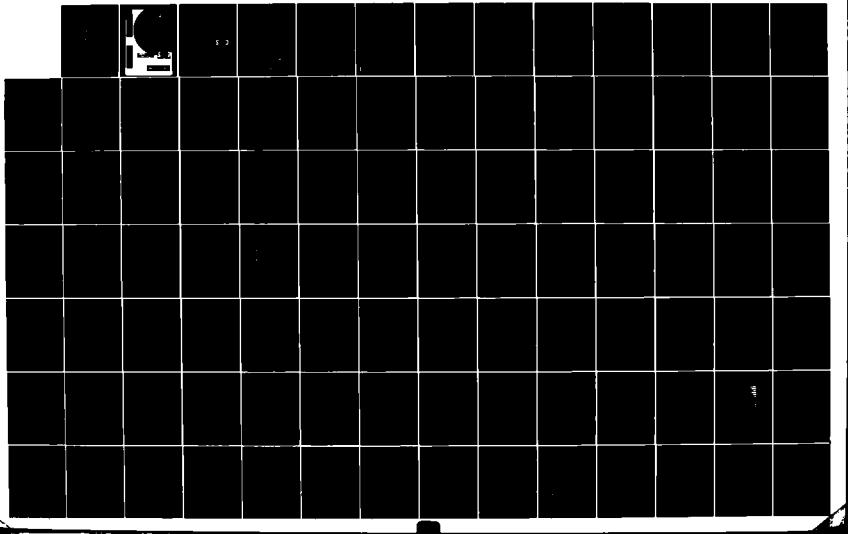
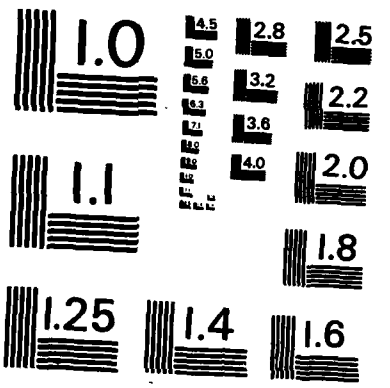
AD-A123 349 JAPANESE INDUSTRIAL DEVELOPMENT POLICIES IN THE 1980'S: 1/3
IMPLICATIONS FOR..(U) HUDSON INST INC CROTON-ON-HUDSON
NY J W WHEELER ET AL. OCT 82 HI-3470-RR FAR-398-GP
UNCLASSIFIED F/G 5/3 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Japanese Industrial Development Policies in the 1980's

Implications for U.S. Trade and Investment

JIMMY W. WHEELER
MERIT E. JANOW
THOMAS PEPPER

with contributions by: MIDORI YAMAMOTO

HUDSON INSTITUTE
CROTON-ON-HUDSON
NEW YORK

HUDSON INSTITUTE

FINAL REPORT

Japanese Industrial Development Policies in the 1980s: Implications for U.S. Trade and Investment

by

Jimmy W. Wheeler

Merit E. Janow

Thomas Pepper

With contributions by
Midori Yamamoto

for the
U.S. Department of State

HI-3470-RR

October 1982

This project was funded by the Office of the United States Trade Representative and the Departments of Commerce and State under contract 1722-120133. Views and conclusions contained in this report should not be interpreted as representing the opinion or policy of the United States Government.

HUDSON INSTITUTE, INC.
Quaker Ridge Road
Croton-on-Hudson
New York 10520

Preface

This study is one of a number done by academic and other research institutions for the Department of State as part of its external research program. This particular study was also supported by the Office of the United States Trade Representative (USTR) and the Department of Commerce. External research projects are designed to supplement the research capabilities of State and other agencies and to provide independent expert views to policy officers and analysts on key questions with important policy implications.

The idea for this study, to examine the implications of Japanese industrial development plans and policies in the 1980s for U.S. trade policy, was put forward initially by Harvey Bale in USTR. The work statement for the project was developed by an interagency working group chaired by Warren H. Reynolds of this office on the basis of a draft prepared by Brian J. Mohler, who was then in State's Office of International Trade in the Bureau of Economic and Business Affairs. This group included officers from the three sponsoring agencies and from the Departments of Treasury and Labor. Among those who assumed heavy portions of the burden for designing and monitoring the project were Lester Davis and William Finan in Commerce, and David Walters and Peter Allgeier in USTR.

The Office of Long-Range Assessments & Research of the Department of State plans and manages research programs that draw on the independent expertise of the private research community. Queries about these programs or comments on this study may be addressed to:

E. Raymond Platig
Director
Office of Long-Range Assessments and Research
Department of State
Washington, D.C. 20520

Acknowledgments

This report is the product of a research contract administered by the U.S. Department of State and financed jointly by the Departments of State and Commerce and the Office of the U.S. Trade Representative. The authors wish to thank members of an interagency working group established to criticize and evaluate the research as it progressed through to completion. We wish to give particular thanks to Warren H. Reynolds of the Office of Long-Range Assessments and Research of the Department of State, who coordinated the administration of the project and whose diligence in this regard help insure that various differences among members of the working group and between the working group and the authors were discussed in a reasoned and restrained manner, even when agreement among the parties could not be achieved.

The project benefited from excellent contributions by many people. It draws heavily on previous Hudson Institute research on the U.S. and Japanese economies and on U.S.-Japanese relations generally. In this regard, the interdisciplinary approach and climate of intellectual freedom encouraged at the Institute enabled us to feel free to challenge many previous ideas, including some previously formulated at Hudson. We are grateful to virtually all our colleagues for comments and contributions on various parts of the research. Special thanks go to John B. Trammell for his work in the early stages of the project, and to Herman Kahn and Irving Leveson for their contributions in discussing many controversial aspects of the study.

The help given us from outside sources is so large as to be impossible to list. Government officials, business and union executives, and academicians in Japan and the U.S. have generously offered their time and ideas, often with considerable patience in the face of our sometimes detailed questions. We received extensive help from numerous participants in various Hudson seminars, particularly from U.S. and Japanese members of Hudson's Corporate Environment Program, who provided continuing comments as the research progressed.

We owe special gratitude to Yvonne Swinton and Roberta McPheeters for their tireless efforts in supervising the preparation of a manuscript with seemingly endless revisions and in penmanship that often appeared to them to have been written in Japanese rather than English, and to Kang Chung-shin, Chizuko Harada, and Sarah Loh of Hudson's Asia-Pacific Office, who said at times they were certain the manuscript was written in Japanese. Barbara L. Lyman of the professional staff prepared many of the quantitative estimates and assisted in the preparation of many tables and figures. Ceci Floren prepared the graphic material. Helen Iadanza, Anne Marsek, and Doris Susa typed much of the earlier draft material.

The report benefited from the contributions of all of these and many other, unnamed people, but none are responsible for the conclusions, recommendations, nor any errors that may rema . These are entirely the responsibility of the authors.

Croton-on-Hudson, New York
October 1982

Jimmy W. Wheeler
Merit E. Janow
Thomas Pepper

Table of Contents

List of Tables

List of Figures

Introduction

This report describes and analyzes Japanese industrial development policies in the 1980s and their implications for U.S. trade and investment. In undertaking this task, we have examined past and present Japanese industrial development policies and various specific instruments through which the Japanese government sought to implement these policies. We gave special attention to policies designed to foster frontier industries and to rationalize declining or stagnating industries. We also tried to describe the relationship between specific instruments of industrial development policy and Japan's broader economic goals, and particularly various ways in which these instruments and goals have changed over time and are likely to change during the 1980s.

In building on the analyses of specific government support measures to industry—e.g., tax and finance measures or other direct or indirect measures to support high technology or declining sectors—we tried to draw implications relevant to U.S. policy makers and, indirectly, the U.S. private sector as well. These implications and our recommendations for dealing with them are presented in summary form in Chapter I.

As discussed in detail in the body of this report, we have defined industrial development policy relatively narrowly: the specific use of available policy instruments for purposes of fostering growth or rationalization in particular sectors, industries, or firms. This definition is designed to differentiate between broad, economy-wide policies and practices and those applying only to particular sectors, industries, or firms. We recognize that, for some purposes, industrial development policy, as used above, may be defined too narrowly, e.g., a broadly-applicable macroeconomic policy may affect one sector of the economy more than others. Nonetheless, we think the distinction is generally a reasonable way to narrow the field of inquiry to a manageable size. Moreover, for those broad, economy-wide measures that seemed to have significant effects on a particular sector or industry, or that seemed to be particularly important to the implementation of targeted measures, we discuss their effects in some detail.

Policy instruments available for use in implementing industrial development policies can also be directed toward many other goals, and typically carry various restrictions on their use.[1] As a result, policy goals and instruments often interact in unexpected ways. Thus, succeeding chapters look at industrial development policy from three separate viewpoints: (1) broad policy areas, such as science and technology policy or policies for declining industries; (2) individual industries, such as computers and electronics, which are growth industries, and shipbuilding, aluminum and nonferrous metals, and petroleum refining and petrochemicals, which are declining industries; and (3) specific instruments, such as taxes, loans, subsidies, legislation, etc. In general, we found it useful to address various specific questions about Japanese industrial development policies in a

[1]Instruments always carry some restrictions on their use; some are applicable only to small firms, to firms engaged in certain activities, to firms in particular industries, to firms facing certain kinds of global conditions, etc.

context that was broad enough t make the answers relevant to policy making in the U.S. Some of the questions addressed were the following: which are the major sectors and subsectors that have been, or are likely to be, targeted for support in the 1980s; how have these sectors been chosen; what instruments have been and are being used to promote these sectors; how have targets and instruments changed over time; and to what extent has the Japanese government responded to industry pressures and vice versa?

We have drawn on interviews conducted in Japan during November and December 1981, and again in June and July 1982, with representatives from various government ministries, research organizations, economic and trade organizations, industries, trade unions, political parties, and academia. We have reviewed economic planning documents, particularly those produced by the Ministry of International Trade and Industry (MITI) and the Economic Planning Agency (EPA); reviewed statistical data compiled by government ministries, industry assocations, banks, and individual companies; and read scholarly writings. Information has been cross-checked; for areas where information is particularly incomplete or inconsistent, we have so indicated in the text. We have also devoted considerable time discussing various problems and issues with U.S. government representatives, business executives, union officials, and academic and policy researchers who have a special interest or expertise in Japanese economic issues.

In general, this study takes a relatively broad approach in an effort to identify both direct and indirect government measures, to emphasize changes over time and to identify the main political and organizational trends that operate across ministerial lines and the main market forces with which the Japanese government must contend in the future. The implications of past, present, and likely future Japanese industrial development policies for Japan itself provide the basis for identifying likely implications for the U.S. and for our recommendations for dealing with them.

This study suffers from a shortcoming common to many country-specific analyses, namely the lack of a comparative framework that would permit detailed comparisons of Japanese policy instruments and their impacts on the Japanese economy with similar or corresponding policy instruments and their economic impacts in other advanced industrial countries. The mandate of the study and resources available in conducting it required us to limit our detailed inquiries to Japan. Yet questions about the effectiveness of policy can only be answered through explicit comparisons; effectiveness is inherently a relative concept. Thus, the main framework of comparison that is used throughout the report is one of comparing current and likely future Japanese policies with similar policies at an earlier time. To the extent that data and information on industrial development policies in other countries was readily available, some tentative comparisons of relative effectiveness on an inter-country basis were incorporated into the study. These comparisons are necessarily more general than a more detailed, explicitly comparative study would permit, but in view of the degree of detail we were able to develop in regard to the Japanese economy and Japanese government policies, we felt justified in using these inter-country comparisons to help derive specific conclusions and policy recommendations for U.S. policy makers and the U.S. economy generally.

In the punctuation and use of transliterated Japanese words, we have taken a somewhat arbitrary, but we hope practical, approach. In footnotes generally, and particularly in citations of authors and titles, where scholarly precision is called for, we have attached diacritical marks over long vowels, as indicated by a line over the vowel. In the text, this convention is not always followed, as in the case of certain Japanese words, such as *sogo shosha*, or general trading company, which are increasingly found in English-language material and usually without diacritical marks. Such words, while not yet fully adopted into English (as, for example, the word sake), seem to us to be in the process of becoming adopted, and thus to justify being punctuated in their (presumptively) English form, rather than in a strictly literal transliteration from the Japanese. Similarly, since the standard English-language abbreviation for the Ministry of International Trade and Industry—MITI—is now so commonly used in American business and government circles, we treat it as a recognized acronym, and unlike the abbreviations used for other Japanese government ministries and organizations, we do not precede it with the definite article. In the case of Japanese names, here too, we chose practicality as a guide, and used the Western style, with the family name last; this contravenes normal Western academic standards, but follows standard Japanese practice in the production of English-language material, and seems to us to be the form most useful to American readers.

Executive Summary

1. Japanese industrial development policies have unquestionably played a major role in Japan's recovery from defeat in World War II and its achievement of historically unprecedented rates of economic growth throughout the postwar period.

2. However, there is considerable disagreement as to exactly what this role may have been, and in particular what role these policies played, as against market forces and more general macroeconomic policies.

3. The key role of government has been as a catalyst to economic development, facilitating and accelerating this development (even if the degree to which government policies acted as a catalyst cannot be measured precisely).

4. The main strength of Japanese industrial development policy as a whole is the way in which the various instruments of this policy have complemented one another and the general market forces of the day.

5. Industrial development policies have become less important to Japanese economic development as the Japanese economy itself has grown and matured.

6. In general, government intervention to promote industrial development has declined over time, while intervention for other purposes—e.g., environmental protection, social welfare goals, and regional development—has increased over time. Future policy making will necessarily become even more pluralistic and focused on heterogeneous goals.

7. Regardless of how effective Japanese industrial policy instruments have been in the past and how effective they remain, relative to similar instruments (or the lack of similar instruments) in other advanced industrial countries, a combination of market forces, budgetary constraints, and political pressures will cause a continuing decline in the effectiveness of many of the specific, direct instruments of industrial development policy.

8. Slowly, though not always steadily, market forces—including domestic pressures for more imports—will become even stronger, compared to government policies, in guiding industrial development. In this environment, even the Japanese government's ever-pervasive indirect controls such as administrative guidance will be more difficult to implement in the future.

9. As more industries lose their competitive position, the process of structural adjustment will become correspondingly more difficult, and more closely resemble the patterns of adjustment in other advanced industrial countries.

10. In one sense, this will lead to increasing difficulties between Japan and its major trading partners, since the latter's expectations of a steady decline in Japanese "infant industry" protectionism will be frustrated,

perhaps to a considerable degree, by a rise in protection for declining industries of the sort found in other advanced industrial countries. In another sense, however, these frustrations will be matched by increasing opportunities for trade with an ever-larger and ever-more open Japanese market.

11. Where the Japanese government continues to intervene in the economy to promote industrial development, it does so mainly at the beginning of the product cycle, as in helping to launch a new industry, or at the end of a cycle, as in helping a declining industry make adjustments. For this reason, difficulties between Japan and its trading partners will unquestionably continue, since this intervention will almost certainly be targeted on industries, either new or declining, that offer the greatest potential to prospective foreign exporters.

12. For at least the next year, the U.S. trade deficit with Japan will widen, under almost any circumstances. Subsequently, barring a global shock on the order of the first and second oil price increases, both cyclical and secular trends will be working to bring the bilateral trade imbalance closer to equilibrium.

13. The Japanese government's general inability to take initiatives to promote smoother bilateral relations with the U.S. will continue, in the absence of external political or economic pressures.

14. The areas where Japanese industrial development policies will continue to be pronounced, in a relative sense, are precisely those areas that are, and will increasingly be, sources of trade friction, i.e., specifically, newly emerging high technology sectors and declining sectors.

15. As Japanese high technology industries come closer to operating on the frontier of the state of knowledge, the advantages of cooperation with foreign firms will increase.

16. Japanese industrial development policies as a whole are an inappropriate model for U.S. economic policy making, though some aspects of Japanese practices, notably the importance given to articulating clear goals and then to formulating consistent policies in search of such goals, are well worth emulating.

Recommendations:

1. U.S.-Japanese trade negotiations, no matter how successfully they might be conducted in bureaucratic terms, cannot produce real economic solutions in the immediate future; to expect fast trade gains will lead only to disappointment, and to still greater frustration on the part of U.S. officials. For this reason, the greatest political leverage should be applied to those remaining Japanese trade barriers that offer the largest potential long-term gains. U.S. trade negotiators should try, as much as existing legislation permits, to concentrate on those areas of bilateral trade subject to direct, government-to-government intervention, and those areas where the U.S. private sector can in fact follow through on gains made by the negotiators.

2. Negotiators should also try to take advantage of the combination of

favorable cyclical and structural trends that are likely to emerge during the next few years. By the same token, U.S. negotiators should minimize or avoid taking actions that are primarily a political response to adverse cyclical economic conditions; specific short-term trade measures have little effect on trade imbalances caused by macroeconomic conditions.

3. U.S. negotiators should continue to apply pressure on the Japanese government to make more "transparent" the ways through which firms become eligible for various forms of high technology industry support. At the same time, such pressure should not be applied excessively in areas that may be of little interest to U.S. firms.

4. U.S. policy should combine specific actions against "nontransparent" Japanese policies and specific responses to Japanese proposals for anti-competitive actions that adversely affect U.S. trade and investment with a more general policy favoring collaborative research among American and Japanese companies in *both* countries.

5. The U.S. should follow developments in declining sectors of the Japanese economy closely to be able to guard against, almost pre-emptively, any imposition of industry support measures that may conflict with the spirit, if not the letter, of existing trade agreements. This monitoring should be steady and consistent—indeed, doggedly persistent—rather than, as has been the case all too often in the past, alternating between "unbenign neglect" and ineffective rage.

6. The U.S. government should create an organization comparable to the National Security Council (NSC) that would perform some of the policy coordinating functions that the Ministry of International Trade and Industry (MITI) performs in Japan, but without the planning role that MITI still has in some sectors or under certain conditions. The main function of such a new but necessarily small organization, in contrast to existing cabinet departments and statutory or ad hoc advisory bodies, would be to institutionalize some kind of economic policy coordination that incorporates both macro and micro considerations, integrates domestic and international effects, and has sufficient authority to do the job.

7. In hard-hit areas of the U.S. economy, we suggest a linking of government financial assistance to mandatory industry and labor adjustment.

8. In tax policy, we endorse the many current reviews of the U.S. tax system that attempt to assess whether savings and investment are being adequately promoted, as against consumption. Moreover, we suggest careful additional study of Japanese tax measures, less because of their possible contribution to growth in targeted areas than because of their possibly indirect subsidization effects on activities that the U.S. government might wish to promote.

9. The U.S. government should push for faster liberalization of Japanese capital markets.

10. We strongly support a major recommendation of the Japan-United States Economic Relations Group (the so-called "Wisemen's Group") calling for improved U.S. policies to enhance U.S. productivity growth. The

efforts that are likely to be most effective in improving overall U.S. competitiveness vis-a-vis Japan are those that can and should be made primarily within the U.S. itself.

11. Indeed, rather than attempting to change the whole Japanese economic system to "bring it more in line" with the U.S. system—hardly a feasible goal—U.S. policy would be more effective if it tried harder to improve economic conditions within the U.S. that would in turn improve the competitiveness of U.S. high technology firms. Specifically, the U.S. government should consider a still more explicit loosening of antitrust standards on collaborative research in the U.S. and/or an explicit waiver from antitrust penalties that might be applied against U.S. firms that participate in Japanese-sponsored collaborative research programs.

12. Such measures designed mainly to improve U.S. competitiveness, combined with steady, low-key pressures on remaining Japanese trade barriers, are far preferable to protectionist actions or other politically-motivated trade restrictions that do no more than "shoot ourselves in the foot."

CHAPTER I

Japanese Industrial Development Policies: Major Findings and Implications for the United States

Sometime in the late 1970s, the idea that the United States faced a "Japanese challenge" became conventional wisdom. Yet the word challenge has two different connotations, one negative and one positive: the former treats a challenge as a threat, the latter as an opportunity. Assuming that a "Japanese challenge" exists in some form, the next question is what form this challenge is taking, i.e., is it being perceived primarily as a threat or primarily as an opportunity? The traditional American answer would clearly be the latter. As a nation of immigrants, with a long history of open borders for both products and people and a commitment to religious and political freedom, the U.S. has traditionally thought of itself as a country that welcomes and meets new challenges in the positive sense of the term.

We believe the "Japanese challenge" now facing the U.S. should be viewed—and, based on the analysis presented in this report, can be viewed—as an opportunity. With regard to the particular aspect of Japanese economic performance that is the subject of this report—namely, Japanese industrial development policies—we do not view these policies as an undifferentiated, monolithic, or all-powerful device designed simply to enable Japan to pass or otherwise "defeat" the U.S. and other advanced industrial countries. To accept this interpretation would be to look upon economic growth as a zero-sum game. Rather, we see Japanese industrial development policies as a continuing attempt to contribute to the goal of increasing the wealth of Japan. This would improve Japan's position in the world without necessarily doing so at the expense of other countries. The question of whether world economic growth will remain a positive-sum game depends considerably, in our view, on what the U.S. does in response to Japan's particular mixture of industrial development policies—i.e., whether the U.S. looks upon the challenge that these policies present as a threat or an opportunity.

A continued *relative decline* in the U.S. position in the world has to be taken as a given. The U.S. itself has fostered this goal since the end of World War II—not only toward its wartime allies, but also toward both defeated powers, Germany and Japan, and more broadly, toward all developing countries.[1] In some respects, the U.S. has fostered this goal even with regard to some communist countries, such as Yugoslavia and more recently China. For their part, West Germany and Japan have been among the leading examples of the success of this U.S. policy; by their achievements, both have played a major role in bringing about a relative decline in the U.S. position. On the other hand, it seems to us that a distinct majority of Japanese (and of West Germans as well) have no objection in principle to the U.S.'s seeking to preserve a certain *absolute position* in the world—economically, militarily, or politically. Again, the decision as to whether and to what degree the U.S. should try to maintain a certain absolute position—particularly a certain minimum level of political and military strength vis-a-vis the Soviet Union, but also a certain level of economic strength vis-a-vis other market economies—is entirely up to the U.S. itself. Thus, the basic challenge that Japan's success represents to the U.S. is whether, like Japan, the U.S. will also continue to seek and in fact achieve increased wealth, and thereby improve its own position in the world.

Estimates differ widely concerning current U.S. economic performance. Many studies argue that a secular decline in U.S. productivity growth since the mid-1960s constitutes an unequivocal sign of a general decline in U.S. economic performance, particularly relative to Japan, whose productivity growth is the highest among countries in the Organisation for Economic Co-operation and Development (OECD). Current popular impressions of U.S. economic performance are, if anything, even more pessimistic, in many cases suggesting that the U.S. economy somehow cannot deal with super-competent Japanese competitors, who are either mysteriously able to make virtually any product more efficiently than Americans or unfairly taking advantage of a government-business conspiracy against the spirit, if

[1]Obviously U.S. postwar reconstruction policies toward Germany were applied only to West Germany.

not the letter, of the rules governing international trade that have evolved since 1945. By contrast, some studies argue that U.S. economic performance during the 1970s was much better, relative to other advanced industrial countries, than widespread expert or popular impressions suggest. In any case, many writers expect an improvement in U.S. economic performance during the mid-1980s, relative to the previous ten years, or at least have proposed policies they contend would lead to such improvement. Almost no one currently argues that the U.S. economy is likely to decline indefinitely.

Whatever the level of current U.S. economic performance and whatever one's estimate of its likely future course, there are strong reasons for acting as if the "Japanese challenge" were a positive opportunity—if only to guard against any hasty departure from the long-established U.S. tradition of dealing with various challenges in the positive sense of the term. At the minimum, a positive approach can help forestall possibly counterproductive U.S. actions that might be taken before the nature of the challenge that Japan represents is more fully understood. In this sense, the growing interest among many groups in the U.S. in the question of how Japan has achieved its postwar economic success is extremely useful, since this interest in Japan's success is likely to lead to greater understanding of how that success came about, and in turn how the U.S. might deal with it.

With these same goals in mind, we begin this first chapter with what we view as the overall context in which Japanese industrial development policies have evolved and which is elaborated on in Chapter II. We then describe what we see as the major characteristics of Japanese industrial development policies and some of their implications for Japan. These are elaborated on in general terms in Chapter III and in more detail in succeeding chapters on tax policy, monetary policy, science and technology policy, and policies for declining industries. We then identify and discuss major implications of Japanese policies for U.S. trade and investment. Finally, we recommend a series of measures the U.S. government might take in light of the preceding analysis of Japanese policies and their implications.

A. Overall Context of Japanese Industrial Development Policies

Japanese industrial development policies have become a major focus—though not necessarily a cause—of international trade friction. This friction is exacerbated by many differences between the U.S. and Japan—e.g., in different stages of economic development that the two countries have reached, in different aims or goals that the two societies foster, and in certain differences in culture and social structure, among other things. For example, in contrast to Japan, the U.S. does not even have an industrial policy in the sense of an explicit and coordinated set of government policies aimed at industrial development, and the issue of whether it should have one is currently a subject of considerable discussion. On the other hand, there are also many similarities between the U.S. and Japan—in some ways increasingly so, as both societies become gradually more affluent. Moreover, the U.S. and Japan share a clear interest in preserving the multilateral free trade system; at least both governments are officially committed to preserving this system, however much they may disagree on how it is to be preserved and at what price.

Previous multilateral and bilateral negotiations have dealt with, and in some cases even "solved," many trade policy problems associated with industrial development policies of different countries, e.g., the opening of some government procurement to international bidding and the establishment of injury tests and other procedures for dealing with the trade effects of subsidization and dumping. Naturally enough, new problems arise as a matter of course—often as a result of "solutions" to earlier problems.

For example, because tariff levels have been much reduced, other impediments to trade have taken on relatively greater importance. Indeed, exchange rate changes, in the volatile post-1973 period of floating rates, have had far greater effects on industrial competitiveness than any of the recent tariff reductions. For a time, in the mid- to late-1970s, the notion arose that different countries' macroeconomic policies were hampering international trade—or at least preventing the development of a more politically tolerable bilateral trade balance between the U.S. and Japan. In the late 1970s, attention turned to so-called "non-tariff barriers," or NTBs, as a major source of trade friction. U.S. and European trade policy officials came to believe that trade with Japan was being excessively hampered by such barriers. Lists were drawn up of specific NTBs thought to impede U.S. and European exports to Japan; Japanese officials prepared corresponding lists of steps Japan was supposedly taking to neutralize these barriers. Then, as U.S. officials became more familiar with NTBs and their causes and consequences, the more the problems stemming from them proved much deeper than could be dealt with by simply listing alleged barriers and asking for (or, in some cases, demanding) relief. The Japan-United States Economic Relations Group (the so-called "Wisemen's Group") noted in its report that market access in Japan is a function not only of Japanese regulations, but also of long-held cultural attitudes—including U.S. attitudes. A major recommendation of the Group was a call for U.S. policies to improve U.S. productivity growth, in the absence of which U.S. manufactured exports to Japan could not be expected to increase significantly even given various

measures the Japanese government might take to improve market access.[1]

Serious trade policy problems do arise from differences in the industrial development policies of different countries. Indeed, because of cultural and institutional differences between Japan and other advanced industrial countries, all of which are predominantly Western countries, such problems are probably more serious between Japan and the West than among the various Western countries. Still, in examining how the U.S. might deal with trade and investment problems arising in part from Japanese industrial development policies, we have concluded that, on balance, the efforts that are likely to be most effective in improving overall U.S. competitiveness vis-a-vis Japan are those that can and should be made primarily within the U.S. itself. This is not to say that the effects of Japanese policies should be ignored or minimized; indeed, the consequences of these policies are serious enough to warrant steady, continuing attention.

On balance, however, it seems to us that various structural changes affecting all advanced industrial economies, including Japan's, are in the process of bringing about improvements in many aspects of Japanese industrial development policy that have to date adversely affected the U.S. Specifically, and as discussed in detail in the body of this report, now that Japan has become an advanced industrial country—with labor costs roughly comparable to other industrial countries, energy costs generally even higher, and various economic and political pressures for further liberalization of trade policy and many "purely domestic" economic policies as well—it, too, is facing the task of making fundamental, structural adjustments in its economy. In particular, Japan, too, now faces the task of phasing out previously important basic manufacturing industries to make way for newer, higher-technology manufacturing industries and various new, high value-added service industries. The Japanese government, for its part, can no longer provide detailed guidance or inducements to many industries; thus, industrial development policies are becoming more general than in the past, clearly supplementing rather than "establishing" (or seeming to establish) market forces. In this context, concerted efforts by U.S. government officials may be able to accelerate changes already under way or otherwise modify these changes to enhance mutual gains; correspondingly, such efforts are unlikely to achieve positive results if they go against the predominant trends of the market.

Our review of Japanese industrial development policies could neither find nor develop a comprehensive methodology for measuring quantitatively the *overall* impact of these policies, as against market forces and more general macroeconomic policies, on industrial development itself. We have identified and where possible quantified some effects of various industrial development policies that have contributed to economic growth and industrial development. However, our or any other discussion of the effects of specific policies is necessarily speculative, since the degree of economic growth or industrial development that would have occurred in the absence of such policies is itself uncertain. For one thing, past policies have been highly interdependent and synergistic. As a result, a small policy change could have either no impact or a significant impact on the effectiveness of a policy package. Similarly, when considering the extent to which the growth of a particular industry was promoted by specific Japanese government policies, such as the "infant industry" protection enjoyed by many basic manufacturing industries in the 1950s and 1960s, one can make only the most general statements as to how effective (or ineffective) such policies would have been if the international environment of the day had been less "tolerant" of these measures, or, alternatively, if foreign (e.g., U.S.) firms had made more vigorous efforts to enter the Japanese market earlier and/or with greater force. In several areas discussed in the body of the report (e.g., petroleum refining, as discussed in Chapter VII), we show how certain government policies *and* foreign tolerance of various policies and practices greatly influenced the shape of the industry that evolved. Discrimination against foreign firms, both explicit and implicit, has clearly gone hand-in-hand with Japanese industrial development policies, especially in the early postwar years, but here, too, it is difficult, if not impossible, to measure in precise terms what the overall competitive effects of this discrimination have been. Selected effects on specific industries are measurable, but require strong assumptions and must be used with great care in drawing implications for the future.

In general, whether one is simply trying to identify the effects of Japanese industrial development policies on the Japanese economy, or trying also to identify implications these policies might have for U.S. trade and investment, it seems to us that many of the narrowly defined quantitative estimates of policy effects are incomplete or, worse yet, misleading. For this reason, we have found it useful to put more or less standard quantitative measures and indicies of those aspects of industrial development policies that can be quantified into the context of the broader problem of comparing values, institutions, goals, and policies between, or among, nations (i.e., problems of comparability).

In an earlier era, when European countries colonized or otherwise dominated most of the rest of the world, they quite naturally brought with them their own concepts of culture, law, and social organiza-

[1] *Report of the Japan-United States Economic Relations Group*, prepared for the President of the United States and the Prime Minister of Japan (Tokyo and Washington, D.C.: January 1981), especially Chapters IV and V.

tion. Now, however, European countries and their offshoots (e.g., the U.S. and other predominantly Western countries in North America and Oceania) can no longer expect to establish the ground rules of international commerce only among themselves. Now that Japan, for example, has become so important economically, it is also sufficiently powerful politically to feel able to seek greater weight for its preferred cultural, legal, or organizational arrangements.[1]

Indeed, there is no easy way to resolve a conflict in national goals of the sort manifested, for example, in Japan's continued intense interest in investment as against consumption, while for reasons of their own, other advanced industrial countries have some time ago reversed these priorities and would like Japan to do the same. If, as discussed in greater detail in Chapter II, Japanese prefer to maintain a higher rate of economic growth for a longer period of time, and to seek this goal through policies that maintain a higher level of investment than other advanced industrial countries—and if Japanese follow this course in the full knowledge that they live less well in the short term than their counterparts elsewhere—there is little that other governments can do in the short term to compensate for any international trade effects created by this choice.[2]

In the language of economic theory, to the extent that Japan's concentration on long-term economic growth is combined with policies that discriminate against the domestic consumer (e.g., that provide the consumer only limited access to lower-priced imported goods or restrict the consumer to artificially low interest rates on household savings), Japanese are choosing a certain degree of allocative inefficiency in the static, or short-term sense, in the hope that the high level of investment that accompanies this choice will produce a rapid enough rate of growth in the dynamic, or long-term, sense to offset the costs of the allocative inefficiencies.[3]

The trade-off between consumption and investment and the costs of concentating on rapid growth in productive capacity emerged as major underlying issues in Japanese domestic politics more than a decade ago.[4] To the degree that Japanese, for reasons of their own, begin to put more emphasis on consumption and infrastructure development over private investment in productive capacity, such a shift in policies (and perhaps also in goals, institutions, and values) would probably contribute significantly to a lessening of trade frictions with the U.S. by accelerating the shift toward greater imports of manufactured goods. But the choice is one for Japan to make, just as it is up to the U.S. to decide on whatever degree of economic revitalization it may undertake in response to the past decade of slow progress and increased competitiveness from Japan (and, by extension, various Newly Industrializing Countries, or NICs, as well).

---

[1]Similarly, at the height of their economic powers, members of the Organization of Petroleum Exporting Countries (OPEC) sought greater weight for their preferred arrangements for international commerce, e.g., an oil embargo against countries deemed by them to be supporting Israel, and much greater government involvement in actual trade transactions.

[2]The gap between Japan and other countries—on this issue—is analogous to differences between two families, one of which sacrifices to send its children to college, while the other neither encourages its children to attend college nor saves the money even to provide for the possibility. The second family may enjoy itself more in the short-term, e.g., have a second car, a third TV set, etc.; that is its business, just as the first family may find greater satisfaction in putting a higher value on education for the second generation.

[3]Carrying the point on theory one step further, we interpret this particular aspect of Japan's postwar economic policies as an interesting—and to Western economists, challenging—synthesis of macro- and micro-economics. In Western textbooks, concepts of consumption and investment are usually discussed only in terms of macroeconomic choices. There are relatively few discussions of a possible relationship between allocative inefficiency, in the microeconomic sense, and the aggregate level of consumption; those that exist are usually in the context of "infant industry" protection in economic development literature. These discussions sometimes refer to the inflationary effects of trade restrictions, and in this sense refer at least indirectly to a relationship between allocative inefficiency and aggregate consumption. But such trade restrictions are usually discussed only in terms of their effects on relative prices, rather than on the overall price level, or some concept of net national welfare. Japanese, by concentrating so single-mindedly on high rates of economic growth as a surrogate for net national welfare, in effect wrote a theory of economic development as they developed. Interestingly, three of the countries that have achieved the most comparably successful growth records in the past 20 years—South Korea, Taiwan, and Singapore—have explicitly sought to copy this aspect of Japanese development policy.

[4]The high level of political interest was evident in the initially widespread support for the so-called Tanaka Plan for infrastructure development, introduced in 1972. This plan and related issues are discussed in detail in Chapter III. However, neither it as such nor any single imitation has been implemented as yet. Further infrastructure development that would deepen the economy in ways that were consciously neglected during earlier postwar years remains basically popular, provided, of course, that such development can be undertaken without triggering the punishing inflation rates of the post-oil shock/post-Tanaka Plan days. Japan still needs new or improved schools, roads, parks, hospitals, and, perhaps most importantly, housing space; the question is not whether such infrastructure will be developed, but when, how, and how much. For a lengthy discussion of these issues, see Herman Kahn and Thomas Pepper, *The Japanese Challenge: The Success and Failure of Economic Success* (New York: Thomas Y. Crowell, Publishers, 1979).

A shift in emphasis from investment toward consumption is one of the characteristics of economic development. Previous Hudson Institute studies argue in particular that economic development follows an upward-sloping, S-shaped path. At first growth is slow; then during a period of industrialization, it rises appreciably; sometime later it slows down again, as people's demands become relatively satisfied and they no longer need or want to work as hard as their forebears.[1] As countries become more affluent, they typically change their mix of investment and consumption, and different countries change this mix at different points along a curve of increasing per capita income.[2] In this sense, the U.S. and Japan are in different stages of economic development, and are thus almost certain to pursue different economic policies with regard to the trade-off between investment and consumption—and also, of course, with regard to industrial development.

By the same token, few differences between the two countries—even cultural differences—are likely to be as immutable as they might seem in the short term. Japanese scholars have often gone to great lengths to foster the notion that Japan has a unique culture. In some respects, this has to be true, as is probably the case for any country. But Japanese culture—again, like other cultures—is also constantly changing, as Japan becomes more affluent and the once relatively isolated Japanese interact more with people from other cultures. In fact, discussions of Japan's alleged cultural uniqueness are as old as Japan itself, and modern Japan has seen many debates over whether some particular change in social structure would undermine the "true essence" of the country.[3] Immediately after World War II, no one could have predicted that Japan would become a significant bread-eating country within 30 years, or that buttered toast and coffee would supplant the traditional combination of rice, seaweed, and fish as the standard Japanese breakfast. Indeed, given the importance of rice-growing constituencies to the fortunes of the Liberal-Democratic Party (LDP), it is hard to believe that LDP leaders would not have preferred to prevent or slow down this transformation in dietary habits.

Yet such changes have unquestionably occurred, and more will also. In general, as Japanese economic development proceeds, patterns of culture and social structure that can be identified as distinctively Japanese will both persist and change, and there is no simple way to extrapolate which specific patterns are likely to change most or least. Take the example of market organization. The traditional Japanese attitude favors an oligopoly of producers; concepts of perfect competition, in the free market sense or of significant countervailing power for labor or consumers are virtually unknown. Accordingly, barriers to entry into Japanese industry have always been relatively strict, even for prospective Japanese entrants. Foreign firms investigating the prospect of entering the Japanese market often mistakenly assume that these barriers to entry are designed specifically to exclude them. In fact, unadmitted Japanese producers are equally unwelcome, in some cases more so; correspondingly, foreigners are often excluded less because they are foreign than because they are outside the existing oligopoly.[4] As in the U.S., increased imports serve to undercut oligopolistic pricing patterns. To the degree that Japanese consumers themselves need (or demand) lower priced products, imports of these products are likely to increase in spite of an alleged "cultural bias" in favor of oligopoly or against imports.

Simply because of Japan's past achievements—basically, its size and importance in the world economy—U.S. business executives and government officials cannot avoid dealing with Japan—and hopefully doing so in a practical way, which in turn requires greater efforts than in the past to find concrete ways of reconciling various differences in values and institutions between themselves and their Japanese counterparts. At the very least, U.S. executives and officials have no choice but to search harder for ways of encouraging Japanese to recalculate their interests in ways that would lead them to greater accommodation than they might otherwise seek.

In any trade policy problem, some aspects can be narrowed down to issues that are amenable to government-to-government negotiations; to those that are likely to be resolved by market forces; and to those that are much more difficult to reconcile even with, or particularly through government-to-government negotiations. The latter category applies, especially to those issues that reflect deep-seated incomparabilities between, or among, societies at different

---

[1] For an elaboration of this idea, see Herman Kahn, William Brown, and Leon Martel, *The Next 200 Years* (New York: William Morrow and Co., 1976), passim., and Kahn, *World Economic Development*, (Boulder, CO: Westview Press, 1979), passim.

[2] This discussion is developed in some detail concerning prospects for Australia, and ways in which Australia relates to the more general theory, in Herman Kahn and Thomas Pepper, *Will She Be Right? The Future of Australia* (Brisbane: University of Queensland Press, 1980).

[3] In 1927, for example, Mitsukoshi department store decided to change its rules and allow customers to enter in their street shoes—presumably a major change, indeed, for a country whose customs had decreed for 2000 years that outside footwear was unclean and thus naturally removed when entering a dwelling. A tremendous public debate ensued as to whether Mitsukoshi's proposed innovation would lead to a breakdown in the "basic" character of Japanese society and the Japanese people. Those who disagreed with the breakdown theory argued that the change could be accommodated as an obvious convenience that also would not prevent shoppers from feeling "basically" Japanese.

[4] Japanese often complain that entry into the U.S. market is hampered by an excess of lawyers, as though this facet of American society were somehow purposely designed to exclude foreigners.

stages of economic development, with different aims or goals, or with sharply different cultural traditions. In the case of U.S.-Japanese trade policy problems, many seemingly immutable "cultural biases," e.g., an alleged Japanese bias against imports of manufactured products, have clearly begun to change; on the other hand, many demands by either side for changes in the values and the institutions of the other, e.g., U.S. demands that Japan radically restructure its wholesale and retail distribution systems or Japanese demands that the U.S. improve its rate of productivity growth, are indeed irreconcilable in the short term.

B. Major Characteristics of Japanese Industrial Development Policies

In our view, there is nothing particularly mysterious about the specific means employed by the Japanese government to foster economic growth and industrial development. In "taking apart" and analyzing industrial development policies, including such specific and quantifiable measures such as tax benefits and credit allocations, as well as much broader qualitative measures such as the formulation of future-oriented "visions," we have concluded that the main strength of Japanese industrial development policies lies not in any particular instrument or set of instruments; many that are used in Japan are also used in other countries. Rather, it seems to us, the main strength of Japanese industrial development policies lies in the way in which these various instruments have complemented each other and the general market forces of the day.[1]

Indeed, to a degree that is probably unmatched anywhere, the Japanese government set about after World War II to formulate and then hold to a more or less clear set of priorities, against which all policy measures were evaluated. Faced with the task of recovering from defeat, the government (and by implication the country as a whole) was intensely interested in "re-catching up" to the other industrialized countries of the West; it effectively translated this single goal into policies that enhanced high economic growth by promoting high savings and investment, and more specifically a high level of investment in certain specified sectors deemed critical to the growth process. The key role of the government was as a catalyst to growth; its industrial development policies promoted private sector confidence in general, and more specifically in targeted sectors, which in turn triggered high levels of investment in more or less the desired pattern, which in turn helped stimulate high growth. This catalytic role of Japanese industrial development policies resulted in large part from their remarkable internal consistency, which itself stemmed from a well-defined and strongly-held set of priorities that dominated the policy making process until recently.[2]

1. Industrial Development Policy Instruments

From 1945 to 1965, Japanese government intervention in the economy was pervasive. The instruments used were detailed and powerful, directed mainly at the revival and expansion of basic manufacturing industries. These instruments included controls over foreign exchange transactions, imports of capital equipment, and, in many cases, the level and direction of domestic investment. From the mid-1960s to the early 1970s, this degree of control became inappropriate, given the level of prosperity achieved, and in some cases inconsistent with international agreements. As both per capita income and the level of industrial development increased, considerable ferment arose within the government as to how to deal with the great variety of new goals, e.g., protection of the environment, better health care facilities for the aged, increased leisure time activities, etc. Despite this ferment, few actual policy changes were made. Then, beginning in the early 1970s and intensifying in the mid-to-late 1970s, a series of external shocks and pressures—some economic, some political—opened the way for, and in fact necessitated, considerable structural adjustment, which in turn led to, and required, various policy changes. Some basic manufacturing industries began to lose their competitiveness. An already strong drive toward new, "knowledge-intensive" industries was accelerated. Various industry-specific trade problems emerged and intensified. New programs and methods had to be adopted to deal with these and many other new conditions.

In general, however, government intervention to promote industrial development has declined over time, while intervention for other reasons—e.g., for environmental protection, promotion of social welfare goals, and regional development—has increased over time. Where the government continues to intervene in the economy to promote industrial development, it does so mainly at the beginning of the product cycle, e.g., to help launch a new industry, or at the end of a cycle, e.g., to help a declining industry make adjustments or simply survive. Specific industrial development instruments and the ways in which they have complemented one another

[1] Specific strengths of individual instruments are discussed in greater detail later in this chapter and again in subsequent chapters.

[2] As discussed in greater detail below, just how important these industrial development policies have been, in comparison to market forces and macroeconomic policies, is a subject of considerable dispute, answerable only in probabilistic and qualitative terms.

are discussed below, as are various ways in which the use of these instruments has changed over time and some of the implications of these changes for the Japanese economy in the future.

a. "Visions"

Various government-sponsored studies, called "visions" (in Japanese technically *bijon*), and denoting a coherent, but purposely sketchy outline of likely future trends, have been drawn up regularly. These have served not only as public relations ventures, officially promulgating a party-line, but also as a genuine consensus of expectations among those groups most directly concerned with the problem at hand. In the case of the broad-based "visions" of industrial development policy, the Ministry of International Trade and Industry (MITI) takes charge of the writing process, but always in consultation with various representatives of industry, labor, the political parties, the media, and certain pressure groups. Drafting of the more detailed sectoral or industrial visions is commonly under the direction of an official advisory body known as the Industrial Structure Council, or some comparable organization drawing upon similar, broad-based consultations. These "visions," though they are invariably too general to serve as an operational document for a specific firm, still provide an important planning tool insofar as they articulate what major spokesmen outside individual firms agree to be a consensus of future trends. Such "visions" are clearly no substitute for the normal determinants of market behavior; neither, however, are they so rigid as to distort the likely chain of events that would occur in the absence of their publication. Moreover, the broad-based discussion stimulated by the process of formulating these visions has helped avoid inconsistent planning among various sectors, although there has always been the danger that all participants could be wrong at once.[1]

b. Direct Government Financial Assistance

The Japanese government has always provided various forms of direct financial support to selected parts of the private sector, but the absolute amounts have tended to be small and often conditional. As a result, this support, whether in the form of research and development (R&D) assistance from various R&D agencies or loans from policy-implementing government financial institutions, etc., has typically served as a catalyst to stimulate private sector support of mutually agreed upon industrial development policy goals. These goals have been both general and specific. For example, one general goal has been the promotion of "high technology and knowledge-intensive industries." Supporting this general goal has been the specific targeting of selected industries (e.g., production of computers), or even selected technologies and devices (e.g., the large-scale integrated circuit). Every year, most intensely during the budgeting process, targeted industries have been selected, promotional plans drawn up, and then implemented, at least in part, e.g., through JDB loans, tax breaks, and other qualitative support measures.[2] These plans rarely rely only on one or two support measures; rather, they typically combine several measures working in the same direction. With the decline in the use of explicit trade and foreign exchange controls, indirect tax and financial measures have become the more important *specific* measures for industrial targeting that remain in use.

c. Monetary and Credit Policies

Through most of the postwar period, the Japanese financial system was credit-rationed, i.e., credit markets were kept chronically in disequilibrium, with demand exceeding supply, by the maintenance of artificially low nominal interest rates and tight control over deliberately segmented markets. This gave the Bank of Japan (BOJ) the ability to enforce detailed oversight over the commercial banks through its allocation of reserves via the rediscount mechanism. By implication, the BOJ was then able to use the kind of "window guidance" procedures normally designed for macro-economic policy to influence micro-economic decisions concerning bank allocations of credit, and thus, indirectly, the investment decisions of corporations as well. Typically, this ability was used to bias flows toward investment in productive infrastructure and capital-intensive manufacturing and away from consumer spending, housing, and social infrastructure—a bias that was felt most intensely near business cycle peaks, as macroeconomic monetary policies shifted to restraint.

However, the conditions that permitted such a tightly controlled, credit-rationed system to operate successfully began to erode in the early 1970s—with growing surpluses on the trade and current account balances providing much increased liquidity to the banking system, with expanding government budget deficits and other forces leading to a gradual, albeit still incomplete, liberalization of domestic financial markets, with the slow opening of the system to international financial flows, and with the growing internationalization of large Japanese enterprises, among other changes. Moreover, in the stagflationary environment of the 1970s, more critical macro-

[1] For example, the decision to expand steel capacity in the early 1970s was accompanied by reasonably consistent capacity plans in firms both up- and down-stream; none expected the events of the mid-1970s that completely undermined such plans, and thus all faced trouble concurrently.

[2] The process is not as abrupt as this short description indicates. Targeted industries and the promotional plans to support these industries are not necessarily changed every year; rather, multiple year planning is the norm. However, many of the instruments used to achieve the various goals, especially tax measures, are evaluated during each budget cycle, and, indeed, frequently changed.

economic concerns of the monetary authorities, such as promotion of economic growth, controlling inflation, and responding to big swings in the exchange rate, have tended to supplant otherwise remaining concerns about credit allocation. Indeed, the operation of monetary policy in Japan is becoming increasingly like that of the other advanced industrial countries—i.e. more control of monetary aggregates than of credit flows.

d. The Government as a Financial Intermediary

The Japanese government has traditionally acted as an important financial intermediary, largely by acquiring control over a significant share of personal savings through the postal savings system and various insurance and retirement funds. These funds have been allocated, through the Fiscal Investment and Loan Program (FILP), to various policy-implementing financial institutions (such as the Japan Development Bank (JDB), the Export-Import Bank, etc.), to local governments, and for use in the acquisition of government bonds. The portion of funds directed toward the private sector can be, and has been, targeted very narrowly, and with much higher leverage on economic decision-making than the number of loans, their magnitude, or the subsidy implicit in the system of below-market interest rates would indicate. These funds have often been interpreted by the private sector as an implicit government guarantee of a project and/or activity. This, of course, is true of most government support, but specifically in the case of direct loans, private banks have tended to interpret government direct lending as a signal that the industry or product line in question would be bailed out if it ran into unexpected difficulties. In this respect, Japanese policy has worked well to date, in part because the economy in general was in a "catch-up" phase in which the next generation of industrial development was relatively clear. Within the constraints of the policy guidance in effect at any one point in time, loans have been evaluated typically on sound financial and technical grounds, and the implicit guarantee has not had to be seriously tested. Increasingly, however, funds from policy-implementing financial institutions have been directed away from industrial development per se and toward other goals, most notably small business and housing, but also energy and environmental projects.

e. Tax System

Soon after the end of the allied occupation in 1952, the Japanese tax system was modified to provide a clear bias toward savings and investment in general, and a more specific bias towards capital-intensive industry. During the 1950s and early 1960s, special tax instruments designed to improve cash flow and profits in firms involved in specified industries or activities were highly targeted, and aimed at stimulating growth in these industries and developing a comparative advantage.[1] Since the mid-1960s,as new goals in society became increasingly important, these, too, came to be addressed by various special tax measures. Even when, indeed particularly when, goals other than economic growth were promoted—e.g., social welfare or environmental protection—the tax system was modified to preserve, to the extent possible, the earlier general bias toward savings, investment, and high economic growth. For example, when environmental regulations were stiffened in the early 1970s, care was taken to permit companies that had to install anti-pollution equipment to write off the mandated extra investment rapidly through special depreciation measures.

Since the early 1970s, both the number of tax measures and degree of benefit provided to the private sector by special taxation measures have sharply declined. Estimated corporate tax revenue losses due to special taxation measures fell from 9 percent of corporate tax revenue in 1972 to just under 2 percent in 1981. Although the total benefits of special taxation measures to taxpayers have declined, the diversity of goals targeted by these measures has widened. On balance, this has reduced considerably the importance of the tax system as a means of achieving detailed industrial development policy goals, relative to the more general goals of promoting investment and savings. Nevertheless, current tax measures retain some of the detailed characteristics of earlier years, most notably with regard to the special depreciation measures that are applicable to "designated plant and equipment."

Two aspects of the tax system have been and remain important for industrial promotion: (1) tax measures are usually implemented as carrots rather than sticks—to promote desired activity rather than penalize undesired activity; (2) in this same spirit, the provision of benefits is made both to producers in targeted sectors and to their consumers. Policies to expand sales of targeted industries have provided important cash flow and economies of scale benefits to both leading edge and declining industries with only modest tax losses—at least to date.

f. Science and Technology Assistance

In Japan, typically no sharp distinction has existed between science and technology policies and industrial development policies; enhancing technological progress has always been an integral part of the promotion of targeted industries. Thus, in contrast to the U.S., the Japanese government has been willing and able to support projects—both directly and indirectly—that had, or soon would have, clear commercial applications. Moreover, despite a growing emphasis on various areas of basic research, the distinction between science and technology policies and industrial development policies has become per-

[1]These and other special tax measures are discussed at length in Chapter IV.

haps even more difficult to make in recent years. Indeed, "knowledge intensification" is a basic goal of both current industrial policy and current science and technology policy. For example, in an effort to develop a computer industry competitive with IBM, the government encouraged formation of the Japan Electronic Computer Corporation (JECC), a leveraged leasing corporation based on a pooling of resources among computer manufacturers, which in turn reduced the financial burden on individual companies. The activities of JECC had the joint effect of promoting the computer industry—a major goal of industrial development policy—and of freeing up resources among firms involved in research on advanced electronic devices—a major goal of science and technology policy. Other organizations, such as the Japan Research Development Corporation (JRDC), were set up to develop and disseminate new technologies, as well as to provide small subsidies to firms for commercialization of some of these technologies. Not surprisingly, many of the supported technologies have been most useful in targeted industries.

Government support for science and technology-related projects has been heavily concentrated in the development of commercial applications, as against basic research. This bias has worked well to date, when the Japanese economy had not developed to the point of needing to work as much on the frontier of research in order to proceed to its next stage of development. In this process, the government has developed an extensive network of institutions to provide direct and indirect support for investment, specifically R&D investment, in high technology areas. This network includes, for example, the various research laboratories of MITI and the Science and Technology Agency (STA), the Machinery and Information Bureau of MITI, various government-private coordinating and advisory councils, and various private-sector development programs such as JRDC.

Now that Japanese industry has moved up to, or close to, the technological frontier in many areas, there is much interest in whether the kind of government support typically provided to date can continue to work so well, and, at least from the point of view of some outsiders, whether or to what extent such continued support (successful or not) constitutes "unfair" subsidization. Neither of these concerns can be given a single general answer. With regard to the former, the government has increased its support for more generalized science and technology programs, roughly comparable to U.S. science and technology programs, even as many specific targeted programs remain, most notably special depreciation measures for designated plant and equipment that Japanese official sources classify as promotion of technology and modernization of equipment. With regard to these targeted programs, their effects on the trade competitiveness of various industries are extremely complex. Indeed, the difficulties in defining what is "fair" and "unfair," and what government support measures translate into competitive advantage, are much greater than the relatively more narrow but still seemingly intractable questions that led to the impasse on the definition of subsidies during the Tokyo Round of GATT negotiations. One is therefore forced to treat most issues on a case-by-case basis.

g. Policies for Declining Industries

Somewhat ironically, now that Japan's level of development has reached a point where the previously developed, and predominantly Western, countries have awakened to the magnitude of the "Japanese challenge" facing them, Japan's level of development has also reached a point where many of its basic manufacturing industries are beginning to be phased out.[1] This decline in basic manufacturing industries is a new trend in Japan, at least in the sense of affecting a broad range of such industries. Recently, aluminum, petrochemicals, paper and pulp, petroleum refining, and even some parts of the steel industry have run into serious trouble, and are increasingly seen as structurally declining, unlikely ever to regain competitiveness in Japan. Other basic materials industries, such as those non-ferrous metals with high energy costs, are also coming under increasing pressure; as a result, imports of copper, nickel, ferro-nickel, zinc, and lead have increased markedly in recent years.

Although the sharp increase in energy costs during the 1970s is the immediate reason for a loss of competitiveness in these industries, in many cases these energy cost increases simply accelerated trends already in motion as a result of rising labor costs and increasing competition from NICs. Such market forces driving structural change in Japan will continue, indeed increase. For this reason, the "phasing out" process for basic manufacturing industries is only just beginning. To the extent that economic progress means the emergence of new industries and a contraction of older industries, this turn of events is inevitable and even desirable. But structural change also requires painful adjustments for both management and labor.

Before the early 1970s, Japan's problems with structural adjustment were either so minor that the country's then high rate of economic growth eliminated the need for special policy measures (e.g., toys, fireworks, and similar industries phased themselves out more or less automatically), or so industry-specific that only the most highly targeted measures were used (e.g., the phasing-out of coal mining during the early to mid-1960s). In recent

[1] Had this phasing out process occurred earlier, or the Western countries' realization of Japan's competitive strength come later, the seemingly accurate—but actually inaccurate—notion that the Japanese insist on manufacturing everything themselves would be much less prevalent.

years, the Japanese government has had to formulate more generally applicable measures to facilitate structural adjustment.

Such measures have typically been grouped together as a policy package, tailored for the particular industry in trouble, designed through collaboration between industry and government, and reinforced by other, more broadly-based programs. Government assistance has also usually been tied to mandatory adjustments on the part of specific firms and the affected industry as a whole. In such cases, the typical pattern is one in which the government has acted as a coordinating body among firms; in some cases, however, the government has even taken a coordinating role between management and labor within individual firms, although this is rare.

Programs for structural adjustment have worked particularly well in instances where they included positive incentives for management and labor to shift to new product lines, and when new areas of diversification were readily apparent. More specifically, the Law on Temporary Measures for the Stabilization of Specified Depressed Industries, passed in 1978, allows the government, at the request of the affected industry, to draft a basic stabilization plan, outlining possible plant reductions, employment measures, and other conversion measures. Such a plan must be requested by the industry in question, and even after it is drafted, it cannot be imposed from above; the draft is just one stage in a bargaining process in which firms commit themselves to specific actions in return for specific government inducements. Indeed, when this particular law is brought into play, the specified industries work directly with the government, usually MITI, to prepare enforceable industry-wide agreements. In such cases, the industry is explicitly exempted from anti-trust regulations.

As in other advanced industrial countries, this process has led to demands for Japanese government support to keep declining industries afloat. In some cases, various consensus-based systems of government-industry negotiations have reduced conflicts of interest and smoothed out the process of adjustment. This process was noticeably successful in shipbuilding. Yet here, the adjustment proceeded more or less smoothly because of the vigor of the industry itself, and because various "special" conditions allowed the industry to diversify into other profitable areas. Other cases where contraction is currently underway, such as aluminum and petrochemicals, have proceeded much less smoothly. Here, significant price differentials have developed between domestic products and imports, and profitable areas of new business have not yet become apparent. In these cases, the initial reaction by both industry and government often has been the all too familiar (especially in Europe, but also in the U.S.) attempt to impose trade restrictions rather than seek positive adjustment. In all cases, the government's monitoring and mediating role has helped bring adjustment negotiations further along, but it is important to recognize that neither the government itself nor the consensus-building process has been particularly successful in anticipating problems ahead of time, or in formulating generally applicable policies to deal with any case that arises.

2. Implications for Japan

a. Policy making in Japan can no longer be based on the clear consensus of the past, and will necessarily become more pluralistic and focused on heterogeneous goals.

We have argued in this report that the main strength of Japanese industrial development policy is the way in which the various instruments of this policy have complemented each other, directly or indirectly. This rather remarkable complementarity among policy instruments reflects several factors: a widely accepted commitment to economic growth as the dominant goal of public policy; a policy making process that encouraged discussion of planning assumptions and forecasts among major business, government and labor groups; and a tendency to design policies in "packages," applying several instruments to a specific task. Until the early 1970s, global conditions largely worked to reinforce these domestic characteristics. Perhaps most importantly, no major adverse "surprises" occurred.

With growing affluence, many new goals and special interests must now be accommodated in the policy process—a trend we expect at the very least to continue and probably to accelerate. In the face of the adverse economic conditions that have occurred since the early 1970s, it has become more difficult to develop generally agreed upon planning assumptions. Moreover, the "shocks" of the 1970s have sensitized Japanese business planners and policy makers to the risk that everyone can be wrong together. Thus, the characteristics that contributed to the strong complementarity in past Japanese policy making have weakened, and will continue to weaken. This, in turn, will require policy making to become more pluralistic and, in all likelihood, will also lead to greater policy conflicts.

b. A continued decline in the effectiveness of many of the specific, direct instruments available to the Japanese government to promote industrial development.

Perhaps the most important implication to be drawn from a review of postwar Japanese industrial development policies is their decreased effectiveness as the Japanese economy itself has matured. This decline is virtually certain to continue as the economy develops further. Regardless of how effective Japanese industrial policy instruments have been in the past and how effective they remain, relative to those in other advanced industrial countries, a com-

bination of market forces, budgetary constraints, and political pressures have already required, and will continue to require, a re-evaluation of the goals and methods of industrial development policy.

Barring an outbreak of global protectionism, the vestiges of Japan's once-detailed trade, capital, and foreign exchange controls, which effectively guided industrial development through the mid-1960s, will become increasingly costly to the domestic economy and increasingly irksome to trading Japan's partners. Moreover, at least for the next several years, and probably for some time beyond then, the large backlog of Japanese government budget deficits will severely limit the use of policy instruments requiring large budgetary expenditures or tax breaks.

In the face of important domestic and foreign pressures for change in market structures and for deregulation, the Japanese government will have to resolve numerous conflicts of interest between these pressures and contrary pressures from groups benefiting from the status quo. The recent frictions among the large department stores, the supermarkets, the franchised convenience stores, and the traditional "mom and pop" stores that have proved so difficult to resolve are an example of the kinds of problems that will increasingly arise. In general, the goal of industrial development will have to compete, in terms of focus and budget, with an increasingly heterogeneous set of goals for Japanese society as a whole; thus, industrial development policies will necessarily become less effective than in the past.

It is important to recognize that this decline is relative to Japan's own history; relative to other countries with a more limited history of, or experience with, detailed industrial development policies, Japanese policies appear formidable indeed. Moreover, in the absence of serious efforts on the part of foreign firms to compete with Japanese firms at home and abroad, Japanese policies certainly give some industries competitive advantages they would not otherwise have.

c. The Japanese government's indirect controls, i.e., administrative guidance, will be more difficult to implement in the future.

Indirect influences, usually referred to as administrative guidance, rely on an implicit threat of some potentially costly action that the ministry in question might take if a firm fails to comply with suggestions it makes. Now that many of the detailed controls over businesses have been constrained or eliminated (notably, again, trade, capital, and foreign exchange restrictions) and many of the benefits that government can offer have been eroded (most importantly, tax breaks and low interest rate loans), the implicit threat that gave so much leverage to the process of administrative guidance has been significantly reduced, though certainly not eliminated.

Moreover, the major Japanese firms, which benefited most from past policies, have become so large and in some cases so diversified internationally that government penalties or assistance have become much less important to their business decisions, relative to a whole variety of other factors. MITI's inability to force a consolidation of the automobile industry in the 1960s shows that its influence in such matters was limited even then. More recently, MITI faced similar difficulty convincing the auto industry to agree to voluntary restraints on exports to the U.S.[1]

Even some ailing industries, which typically seek government assistance, are now less willing than in the past to accept government ideas on their future. For example, the government's attempts to regulate both oil prices and petrochemical feedstock prices have proved unsatisfactory to almost everyone. Significant price differentials have developed between domestically produced and imported petrochemical products; consequently, despite strong government appeals for "patience," the petrochemical industry has continued to pressure MITI for price de-regulation, and in fact has obtained partial de-regulation. Thus, even an industry over which MITI retains strong legal controls has shown itself able and willing publicly to challenge government decisions and administrative guidance. The point here is not that government controls over industry, both direct and indirect, are gone or are now unimportant; rather, they are less effective relative to the past. This has changed and will continue to change the balance of power between industry and government; the impact of this change will be more evident when conflicts of interest emerge during negotiations over the allocation of such increasingly scarce government resources as subsidies, low interest loans, tax breaks, etc., or when the government is attempting to pressure an industry to take actions it does not want to take—the so-called voluntary export restraints on automobiles is the most recent example.

d. As more industries lose their competitive position (e.g., to products from the Newly Industrializing Countries, or from other advanced industrial countries with lower energy costs), the process of structural adjustment will become correspondingly more difficult, and more closely resemble the patterns of adjustment in other advanced industrial countries.

Both government and industry support the general notion that Japan must phase out uncompetitive basic

[1]The automobile companies have been outside of MITI's control for many years. One could argue that MITI's ability to force them to agree to voluntary export restraints in effect brought them once again under MITI control. In our view, however, the difficulties experienced by MITI, and the continuing resistance by the industry, are by far the more salient point. No subsequent negotiations with the auto industry are likely to proceed smoothly simply as a result of current agreements.

manufacturing industries and move into higher-value added, "knowledge intensive" industries. However, this "phasing out" process is just beginning. Japan now has many industries under pressure to retrench, and others showing signs of vulnerability. In ensuing years, still more industries are likely to face large-scale adjustment problems, and at the same time. Moreover, resistance to such a process will doubtless increase, as it has in other advanced industrial countries. As discussed below, this may herald the rise of new depression cartels, and growing MITI influence over these troubled industries (relative to the present).

e. The government is likely to seek new legislative authority in hopes of strengthening its ability to ease the adjustment process for affected industries; it is also likely to seek greater authority to delay adjustment where feasible.

In anticipation of the increasing difficulties facing Japan's basic manufacturing industries, the government will seek new legislative authority that would give it, particularly MITI, a stronger role in the adjustment process. Even with such added authority, however, the government can at best only facilitate the adjustment process; it will be unable to resolve a fundamental loss of competitiveness in various industries. Should it attempt to stave off such competitive declines as a result of domestic political pressures, Japan would then face many of the same chronic subsidy problems that have become so burdensome in other countries, and indeed so burdensome to Japan in the case of the national railway.

f. Despite national security arguments often raised in the hope of gaining special support for troubled manufacturing industries, once it becomes apparent that comparative advantage has shifted elsewhere, imports have and will continue to enter Japan.

Despite the close relationships between suppliers and buyers and other informal trade barriers so often referred to in discussions of trading with Japan to date, when price differentials go beyond a certain point—and this triggering level naturally varies from industry to industry, and from time to time—lower priced imports can and do penetrate the Japanese market.

Various domestic and international political pressures are likely to work both in support of, and in opposition to, market pressures for increased imports. Central government deficits, combined with more diverse social goals, are likely to support market pressures toward a more open economy; the costs of subsidization, protection, or other measures to offset shifts in Japan's comparative advantage are likely to become too great to be tolerated. In addition, various multilateral agreements will limit the scope of subsidization and protection. On the other hand, domestic demands for protection that are certain to be voiced by the declining industries themselves will work against a more open economy.

In time, the traditionally dominant Japanese emphasis on effective results, as measured by the economic viability of an industry, is likely to be the dominant criterion of whatever industrial development policies do emerge. Actual policies toward "sunset" industries are likely to be neither completely protectionist nor completely laissez-faire; in fact, the balance that is eventually struck will probably be based on startlingly pragmatic grounds, depending partly on the degree to which the competitiveness of foreign industries requires accommodation by Japanese interests on economic grounds, and partly also on the degree to which foreign political pressures require accommodation. Development of policies toward "sunset" industries has been a long, drawn-out process of discussion and horse-trading; no single proposal or accommodation is cast in concrete until the final package is put together. As a result, all interested parties have a chance to try to influence the process, including foreigners.

g. Despite a decline in the overall effectiveness of industrial development policy, the relative importance of those instruments targeted on the fostering of new industries and the phasing out of declining industries will remain high.

This concentration of effort reflects a deliberate policy response to economic trends. As the Japanese economy has become more developed, individual firms feel less need for government support and, more importantly, less desire for it—especially if they are doing well in a "business-as-usual" sense. By the same token, firms or product lines at the beginning or end of a life-cycle often need, or willingly accept, government assistance. Given budgeting and other constraints on policy, the Japanese government will have more trouble providing meaningful assistance, relative to the past, even to a limited range of industries at the beginning and the end of a product cycle. Given the traditional Japanese interest in effective results, the government is likely to select a small number of targets for major support, and let the remainder sink or swim.

Policies for new industries or technologies have traditionally included a heavy dose of "infant industry" protection. Since the mid-1960s, formal tariffs, quotas, foreign exchange controls, and investment restrictions have been progressively liberalized. In recent years, with the formal "liberalization" of the computer industry and other high technology sectors, explicit protection has been replaced by more implicit forms of support and protection.[1] Assistance to computer and other high technology firms will

[1]These areas are discussed in the following sector of this chapter.

doubtless continue through JDB loans, subsidies through the JRDC, government/private R&D projects, various targeted tax breaks, etc. But the magnitude of such assistance will be limited by an increased reluctance on the part of the Ministry of Finance (MOF) to maintain or expand subsidies for budgetary reasons, and by criticism from the international community.

Japan's previous infant industry protectionism was more or less tolerated by the U.S. and other advanced industrial countries during the early postwar years because it was seen as part and parcel of Japan's recovery from defeat. Now that Japan's competitive strength has greater adverse effects on the trading positions of other advanced industrial countries, firms in these countries have become much more vocal in their opposition to the allegedly "closed" nature of the Japanese market. At the very least, any additional support to high technology firms will be monitored closely.

As mentioned earlier, a projected increase in the number and scope of declining industries is a new problem for Japan, and one that will require increasing attention. The relatively efficient reallocation of manpower and development of new product lines that characterized the phasing out process in shipbuilding will become more difficult as the numbers of unemployed grow and if or as new business opportunities become less apparent. Under these conditions the government will be under increased pressure, on the one hand, to support declining industries, while also facing increased opposition to such support on budgetary and foreign policy grounds. Low cost options, in terms of the government budget, will become a preferred tactic, e.g., an expanded mediator role and potentially a greater use of anti-depression cartels, that in the short run, like all forms of support for declining industries, tend to restrict imports.

C. Implications for the U.S. of Japanese Industrial Development Policies

1. Implications of Macroeconomic Trends

a. For at least the next year, the U.S.trade deficit with Japan will widen, under almost any circumstances.

A U.S. economic recovery will lead and at least initially be more vigorous than Japan's. One effect will be to expand U.S. imports from Japan, while depressing Japanese imports from the U.S. This adverse trade balance effect will be exacerbated by the lagged effects of a strong dollar (weak yen), which decrease the price of Japanese goods relative to those produced in the U.S. in all markets. Exchange rate changes impact on trade flows over a period lasting some 12 to 18 months on average. Thus, even if the yen strengthened significantly and soon, the trade effects on the U.S.-Japan bilateral balance would take some time to work themselves out.[1] Moreover, monetary conditions suggest that the yen will strengthen only slowly, toward some presumably higher "correct" value. The increased bilateral trade deficit we expect in the short-term will doubtless exacerbate current economic frictions.

b. Subsequently, barring a global shock on the order of the first and second oil price increases, both cyclical and secular trends will be working to improve the bilateral trade balance.

As the Japanese recovery becomes more vigorous—and, as a separate matter, the yen strengthens somewhat—the U.S. bilateral trade deficit will narrow. Moreover, the opening of the economy that has occurred since the mid-1970s and the continued pressure for further opening will work to bring the bilateral trade deficit more in balance; adjustment of trade and investment patterns to such change in market access takes time, time which has lengthened under the recent uncertain global conditions. The particular economic trend likely to have the most immediate effect in this regard is an acceleration of imports of basic manufactured goods with high energy costs. A more general move toward a pattern of horizontal trade, similar to the pattern that characterizes intra-European trade and U.S.-European trade, is also at work, but more slowly. This trend reflects a growing similarity of tastes between Japan and the U.S. as the gap in per capita income narrows, greater contact by Japanese consumers with foreign-made goods, and the increased costs to both consumers and producers of higher priced domestic goods.

c. Japan's growth rate, on average, is likely to remain higher than those of most other advanced industrial countries for some years hence, with comensurate effects upon the competitiveness of key export industries.

Despite cyclical economic swings, potential Japanese economic growth will remain high (i.e., 4-6

[1]Indeed, some evidence suggests that some Japanese exporters are basing their dollar prices and marketing strategy on a long-term yen/dollar exchange rate around the 200 level. If this is true for a large volume of Japanese exports, then a strengthening of the yen rate would not greatly affect the average dollar price of Japanese goods in the short term. As a result, the adjustment of the trade balance to the exchange rate change could be smaller than expected, and could take much longer than the 12 to 18 month average.

percent) for the remainder of the decade.[1] The associated high productivity growth will enhance prospects for Japan's leading edge industries, both domestically and internationally, by holding costs down and expanding markets. Thus, many U.S. industries facing Japanese competition will see this competition continue and in many cases intensify. However, this competition must be viewed in a longer term context: the intensity of the current competitive environment reflects currently sluggish economic conditions, and an unusually weak value of the yen. An assessment of long-term competitiveness should take account of the structural trends discussed above, including some strengthening of the yen and a significant improvement in U.S. productivity growth; both of these factors will work to bring bilateral trade in both goods and services closer to equilibrium.

d. The Japanese government's general unwillingness to take initiatives to promote smoother bilateral relations in the absence of external political or economic pressures will continue.

Japan's foreign policy in the postwar period has been essentially reactive; it has also been extemely successful, at least in the sense of taking no more than the minimum steps necessary to promote Japanese interests. Even with the growing divergence between U.S. and Japanese interests as Japan has grown economically more powerful, Japanese have taken care to limit their demonstrations of independence to low-key (i.e., publicity-shy) actions, rather than the kind of explicitly visible demonstrations of political "independence" taken by France under President de Gaulle. This pattern is likely to continue. Japanese on balance will feel no strong compulsion of their own to take up the kind of "leadership" role that many Americans often advocate on the assumption that such a role would more or less automatically complement (or substitute for) a U.S. role.[2]

[1]Various other projections of Japanese medium term growth have recently been revised downward, falling generally to a 3-5 percent range. We think that such downward revisions are too strongly influenced by current cyclical conditions, and underestimate growth, once recovery begins. In any case, the general thrust of the discussion in the body of the report would not be substantially affected in the event these more pessimistic growth projections prove accurate; the main effect would be to make the adjustments discussed take somewhat longer.

[2]This is the simplest version of the so-called burden sharing argument, and in our view greatly underestimates the ambiguities inherent in an association between a "superpower" and a "superstate." For further discussion of this problem, see Chapter II, Section D.4.

RECOMMENDATIONS:

Many of the current bilateral economic problems between the U.S. and Japan are intractable in the short term. Past liberalization programs, those that might emerge from current or future negotiations, and market conditions will all produce real economic gains only over the medium- to long-term. As a result:

1. Negotiations, no matter how successfully they might be conducted in bureaucratic terms, cannot produce real economic solutions immediately; to expect fast trade gains will lead only to disappointment.
2. Since fast economic gains are not possible, the greatest political leverage should be applied to those remaining Japanese barriers that offer the largest potential long-term gains.
3. Negotiators should try to take advantage of the combination of favorable cyclical and structural trends that are likely to emerge during the next few years.
4. U.S. negotiators should minimize or avoid taking actions that are primarily a political response to adverse cyclical economic conditions, with little or no economic justification; specific short-term trade measures have little effect on trade imbalances caused by macroeconomic conditions.

2. Implications for the U.S. of Japanese Policies for High Technology and Declining Industries

Taking Japanese industrial development policies as a whole, there has been a significant decline in the number of direct and indirect instruments of control, as well as in the absolute size of the benefits provided by some of the most important instruments, such as special taxation measures. Moreover, we anticipate a continued decline in the scope and effectiveness of many of these instruments. Nonetheless, the areas where Japanese industrial development policies will continue to be most pronounced are precisely those areas that are, and will increasingly be, sources of trade friction. More specifically, Japanese policies will focus on newly emerging higher technology sectors and on declining sectors.

a. Implications of Policies Toward High Technology Industries

As noted above, the Japanese government has an extensive network of institutions in place to provide direct and indirect support, particularly for R&D investment, to high technology activities and industries. Support for this network is likely to continue, more or less intact, with incremental budget increases. Moreover, the various institutions (MITI's research laboratories, JRDC, etc.) are likely to con-

tinue to serve as important vehicles for the diffusion of technology and the development of new technology. New private-public R&D projects can be expected to follow the by-now well-established pattern of emphasizing areas where Japan's industry lags behind foreign industries and where a concentration of effort seems likely to yield high benefits. *Explicit* discrimination against foreign-based firms with operations in Japan, as stipulated in laws or policies and manifested in access to subsidies, loans, tax measures, and participation in joint public-private R&D projects, has been reduced.[1] Such explicit discrimination that remains is now under review, with the express purpose of eliminating this bias altogether. Nonetheless, the *process* by which firms become eligible for some of these benefits, especially participation in collaborative public-private R&D projects, continues more or less unchanged; for this reason, an *implicit* anti-foreign bias remains and will probably continue for the foreseeable future.

Japanese firms participating in such projects can more or less assume that foreign firms will, for their own reasons, remain reluctant to participate in projects that, directly or indirectly, require a strong domestic presence in Japan, a willingness and ability to communicate and exchange information with Japanese high technology firms, and an established means of communicating effectively with the Japanese government. Previous patterns will not, and in our view cannot, change overnight.

Nor, for that matter, are the "true" desires of foreign firms uniform or clear. Simply by participating in Japanese-sponsored R&D projects, foreign-based firms can presumably obtain some useful benefits. On the other hand, such benefits may not offset possible costs of sharing technologies or production processes with Japanese competitors. We anticipate that in some truly "frontier areas," government support measures of the sort that have been so useful to Japan in the past will be less useful in the future: the targeting of policy objectives is much easier when one knows generally the direction in which to go and a pioneer has already blazed the trail. Accordingly, the willingness of Japanese high technology firms to begin to collaborate more with foreign firms is likely to increase—the Fifth Generation Computer Project is one example of this trend. In such high-risk, long-lead-time projects, the "costs" of foreign participation, as perceived by Japanese, will increasingly be seen as minimal, compared to the prospective benefits, both technological and political. Whether such collaboration will be attractive to foreign firms remains, of course, to be seen.

[1]For example, tax credits for software development are now available to foreign-based computer firms with manufacturing facilities in Japan. IBM, Univac, NCR, and Olivetti are among those that have taken advantage of this program.

As discussed above, the overall impact of the various elements of government support to high technology industries cannot be evaluated quantitatively.[2] Nor can such a hard-to-evaluate matter as the overall impact be easily dealt with in government-to-government negotiations. Rather, specific aspects of support for high technology industries must be dealt with on a case-by-case basis. Politically this is unsatisfactory, but fortunately both the Japanese government and private industry are likely to be increasingly sensitive to supportable complaints from abroad about continued discrimination, if only because the likelihood of retaliatory action has increased.

RECOMMENDATIONS:

We would of course encourage the U.S. government to continue applying pressure on the Japanese government to make more "transparent" the ways through which firms become eligible for various forms of high technology industry support, including participation in joint public-private R&D projects. This pressure should be maintained in any case, whatever the "true" desires of a majority of U.S. firms. Only when or if the criteria for selection becomes clearer can either the U.S. government or U.S. firms evaluate the alleged "fairness" or "unfairness" of the Japanese system. At the same time, we would caution the U.S. government not to expend excessive political and other negotiating capital in specific areas that may be of little interest to U.S. firms.

We would also argue that broad-based U.S. government attempts to change the Japanese economic system to bring it more in line with U.S. standards of market organization, such as recent U.S. government interest in reducing the scope that Japanese firms currently have for special forms of collaboration, are unlikely to work. The allied occupation authorities insisted, over Japanese objections even then, on creation of the Fair Trade Commission (FTC) as an anti-monopoly agency, but some 30 years later it has still failed to acquire a well-accepted role in Japanese society. There is little reason to believe that U.S. negotiators can succeed in changing such deep-seated ground rules governing Japanese market organization when a combination of the occupation authorities and a Japanese agency specifically created for this purpose has not succeeded. This is not to argue that the U.S. should ignore problems arising from market organization in Japan. When proposals for anti-competitive practices emerge, the FTC will almost certainly oppose them; when such proposals, if implemented, would influence U.S. trade and investment flows, the U.S. government should explicitly support the basic FTC position.

Nonetheless, rather than attempting to change the whole Japanese system to "bring" it more in line

[2]See pp. 5-6 above.

with the U.S. system, U.S. policy is likely to be more effective, it seems to us, if it tries harder to improve economic conditions within the U.S. that would in turn improve the competitiveness of U.S. high-technology firms, e.g., perhaps by a still more explicit loosening of antitrust standards on collaborative research in the U.S. and/or an explicit waiver from antitrust penalties that might be applied against U.S. firms that participate in Japanese-sponsored collaborative research programs. Indeed, a recent decision by various U.S. firms to set up a collaborative research organization of their own, partially modeled on Japanese practices, although distinctly more limited, suggests that this route may yield significant benefits, in contrast, say, to lengthy attempts to gain relief from "normal" Japanese practices. As noted earlier in more general terms, the competitive balance between U.S. and Japanese companies, which can of course be influenced by government policies, is more important than government policies *per se*; the latter are best viewed as part of the former.

The bilateral problems that have recently emerged in high technology areas are virtually certain to continue as Japan and the U.S. move increasingly toward a pattern of horizontal trade; thus, it appears to us useful to design a U.S. policy that combines specific actions against "nontransparent" Japanese policies, specific responses to Japanese proposals for anticompetitive actions that adversely affect U.S. trade and investment by excluding Japanese firms from anti-monopoly laws, and a more general policy favoring collaborative research among American and Japanese companies in both countries. Moreover, precisely because immediate results in genuinely frontier areas may not be forthcoming, both governments have a socially useful role to play in underwriting high-risk, long lead-time higher technology projects of mutual interest, e.g., energy conservation, fusion research, etc. Such joint U.S.-Japanese efforts would, almost by defintion, bring Japanese operating practices more in line with U.S. practices—and do so more effectively than attempts to "negotiate" such changes in the abstract. Finally, the U.S. should re-examine its own policies that are directed toward science and technology, and those that have major impacts on higher technology industries, to evaluate their effects on productivity and competitiveness. The attempts to review and reform the regulatory burden on U.S. firms that have been undertaken during the past several years represent a good first step, but only a first step, in this direction.

b. Implications of Policies Toward Declining Industries

As noted above, as more Japanese industries lose their competitive position, the Japanese government is likely to seek new legislative authority in the hopes of strengthening its ability to deal with the adjustment process. We anticipate that a new law will be passed within a year, resembling the 1978 Law on Temporary Measures for the Stabilization of Structurally Depressed Industries (i.e., the Depressed Industries Law). The new law will almost certainly retain most of the basic features of the 1978 law, simply because the earlier law created a statutory basis for government assistance to declining industries that, on balance, has proven helpful to the industries themselves and that, not incidentally, preserves a role for government at a time when its influence on industrial development is generally declining. More specifically, the following basic characteristics of the old law are likely to be retained:

1. Government financial support will be provided in the form of loan guarantees for the disposition of facilities, provided (a) the industry in question is suffering from severe overcapacity; (b) a majority of the firms in the industry seeks designation under the law; and (c) there is broad agreement in the industry that some scrapping of facilities is necessary.
2. The responsible ministry, usually MITI, will be empowered to draft a stabilization plan outlining possible plant reductions, employment measures and other supports, the details of which will then be hammered out through discussions among union leaders, management, and MITI officials.
3. Some or all of these actions will be exempt from anti-monopoly laws.
4. Relief will be given whether the pressures on the industry derive from domestic or international forces.

Despite this continuity, there will also be modifications in the law, probably along the following lines:

1. Since 1978, certain additional sectors of the economy have acquired the earmarks of a declining industry, but are currently ineligible for support; the new law will seek to cover the additional sectors, possibly including, although not limited to, petrochemicals and ferro-alloys. The new law may also be more general than the 1978 law in the sense of not trying to specify eligible industries ahead of time; rather it may provide broad criteria against which firms in an industry can subsequently file for support.
2. There are strong indications that MITI is trying to have the new law permit a more active pursuit of mergers and related collaborative steps for the revitalization of declining industries.
3. The measures sought by MITI also would allow the law to then be used much more flexibly as a means of dealing with cyclical downturns as well as structural declines. As discussed in some detail in Chapter VII, this shift, assuming it comes about, would bring

an important change in the thrust of Japan's adjustment policy generally—away from capacity reductions in support of structural adjustment and toward a variety of "temporary" measures to support existing capacity levels during a cyclical downturn, a change that in time would increase potential friction with trading partners.

A further loss of competitiveness for Japanese basic manufacturing industries, if augmented by new legislation along the lines outlined above, would have two important implications for the U.S. First, more "rationalization," or depression cartels are likely to be formed. These would allow for industry collaboration on capacity reductions and possibly the imposition of some kind of "temporary" import restraints. Whether such supports turn out to be "temporary" would in turn depend on several factors, most importantly the competitive position of the industry itself. In aluminum refining, for example, Japanese producers at one time asked for voluntary U.S. export restraint, but this position was later dropped after it became clear that nothing could keep the bulk of Japan's aluminum industry competitive. Secondly, and more encouraging to U.S. interests, since pragmatism is a stronger force in Japanese policy making and market behavior than foreigners', or Japanese rhetoric, typically suggest, the creation of more depression cartels in the future may not have as negative an impact on potential U.S. exports to Japan as such a trend might otherwise suggest. As noted above, once the price gap between higher-priced domestic goods and lower-priced imports reach a certain point, imports enter Japan much as they do other countries. Moreover, the process of formulating a new depressed industry law, as well as the process of creating a stabilization plan for an industry in trouble, is a long, drawn-out affair, with much public discussion among interested parties. By implication, the reactions of Japan's major trading partners, especially the U.S., can be actively interjected into the process and potentially could strongly affect subsequent Japanese actions.

RECOMMENDATIONS:

We suggest that the U.S. government follow developments in declining sectors of the economy closely to be able to guard against, almost preemptively, any impositon of industry support measures that may conflict with the spirit, if not the letter, of existing trade agreements. More importantly, perhaps, such monitoring should be steady and consistent. Japanese willingness to gamble on a continuation of previous cycles of U.S. inattention and then anger would be greatly lessened by a switch to lower-key, but more doggedly persistent, U.S. attentiveness to developments in the Japanese domestic economy. This is the Japanese pattern of monitoring developments in the U. S, and while it is not always effective—e.g., it failed completely to foresee the Nixon "shocks"—its use by Americans would have a visible impact on Japanese counterparts.

3. General Implications for the U.S. of Japanese Industrial Development Policies

a. A Non-Model for U. S. Economic Policy

To the extent that Japanese industrial development policies have contributed to Japan's exceptional economic performance during the postwar period, they have also contributed their own diminution. Thus, for Americans to see Japan's overall system of industrial development policies as a model to adopt in the process of trying to revitalize the U.S. economy is to ignore an important lesson from the Japanese experience: the Japanese government's ability to provide detailed direction to some elements of the economic growth and industrial development process has declined over time, as levels of income and wealth rose. For example, the willingness of consumers and other interests to continue sacrificing their own needs and wants to a producer-oriented version of high economic growth has declined. For their part, companies have become so large that the small amounts of government support available are insignificant compared to internal resources, especially when compared to the increasing trouble and costs associated with acquiring this support and having government involved in business decision-making. Moreover, multiple policy goals, in addition to growth, have emerged, adding new demands on government resources and taxing the capacity of government officials to play a central role in all activities.

For this reason, those who argue that the U.S. should adopt an explicit industrial policy modeled along Japanese lines, would do well to ask themselves whether the adoption of a Japanese model is likely to work in the U.S., given that in Japan itself it no longer works as it once did.[1] Advocates of an explicit U.S. industrial policy can of course argue that this inference is not necessarily the only one to be drawn from the Japanese experience. Even if the kind of industrial development policy associated with earlier years of postwar Japan no longer exists, the argument might run, there is no necessary reason why a similar model could not work in the U.S.

There are several concrete reasons, however, each rooted in the economic, social, and cultural conditions of the U.S. First, in contrast to Japan,

[1]Many versions of this idea have been discussed, including the notion of a new cabinet department modeled after MITI (labeled DITI, or Department of Trade and Industry, by some of its advocates), which has probably received the most public attention.

where the relationship between business and government has been and remains generally cooperative, this relationship in the U.S. has generally been more adversarial. Secondly, the U.S. is a much more heterogeneous country than Japan, which suggests that developing the kind of cooperative relationship between business and government needed in a Japanese model (even if not to the same degree as in Japan) is difficult to achieve. Thirdly, the U.S. still has a higher level of per capita income than Japan, and a much higher level of per capita wealth; since a major reason for the decline in the effectiveness of Japanese industrial development policies has been Japan's increased affluence—meaning, in turn, an increased pluralism (relative to the past), and a greater independence on the part of the private sector—it is at least arguable whether it is even possible to introduce a Japanese-style industrial policy in a country as wealthy as the U.S. Finally, the U.S. has never had an industrial policy in the sense that Japan had—or has.

We are also skeptical of proposals to create a new governmental entity with the authority to implement Japanese-style industrial development policies for domestic political reasons. Quite apart from current arguments about the desirability of smaller versus larger government, an agency or department with the discretionary authority still enjoyed by a much-weakened MITI goes against U.S. political traditions—in the sense that MITI's ability to use administrative guidance is based on a much more flexible legislative mandate than is customary in the U.S., and for this reason is rarely subject to judicial review. Some advocates of Japanese-style approaches argue that the U.S. needs a new cabinet department to coordinate U.S. economic policies and thereby strengthen U.S. competitiveness in a world in which many new challenges will have to be faced. Indeed, better policy coordination and more internal consistency are eminently desirable goals, but to suggest that one cabinet department can coordinate the work of others, on behalf of the executive branch as a whole, is to go against the record of numerous previous attempts to give one department responsibility for matters normally within the purview of another.[1]

RECOMMENDATIONS:

To create an organization capable of assuming some of the *policy coordinating* functions that MITI performs in Japan, but *without the planning role* that MITI still has in some sectors or under certain conditions (e.g., frontier and declining industries), we suggest that something comparable to the National Security Council (NSC) be formed within the White House. Naturally, such an economic policy council should have only a small to medium-size staff to prevent its becoming a separate constituency in itself.[2] This could be achieved without setting up a new organization simply by assigning the policy coordinating task to the Council of Economic Advisors (CEA) or the Office of Management and Budget (OMB), which already exist within the White House. As in the case of the Office of the U.S. Trade Representative (USTR), however, both the CEA and the OMB have institutional histories that impede their carrying out a policy coordinating role analogous to the NSC (when the latter performs this role, as against various times when it has taken on operational functions or been too weak to perform a coordinating role). Also, the members and staff of the CEA have traditionally limited themselves to domestic and/or macroeconomic issues. Obviously, if the CEA were to try to take on the task of coordinating the many elements that comprise even the U.S.'s current de facto industrial policy, it would need some additional or modified staff—in particular, an expanded intellectual base and a specific mandate from the President. Similarly, though the OMB is specifically charged with a coordinating function—and in the eyes of other executive branches has performed this function satisfactorily—it has traditionally limited itself to budgeting oversight tasks. If the OMB were to undertake the role of coordinating U.S. industrial policy, it, too, like the CEA, would need an expanded intellectual base and specific mandate from the President. A new organization such as an economic policy council could be established by executive order or by an act of Congress, making it comparable to the NSC, with statutory membership and duties, and thus more permanence than a coordinating body established by executive order. In any case, the main point is to suggest an institutionalization of some kind of economic policy coordination that incorporates both macro and micro factors, that

[1] Even the Office of the U.S. Trade Representative (USTR), which was created 20 years ago to perform a coordinating function with regard to trade policy, cannot, as it is currently structured, perform the broad-based coordinating function we believe to be desirable in dealing just with U.S.-Japanese economic relations, let alone U.S. international economic policy generally. The institutional history of the USTR, by now firmly fixed in the minds of other executive branch agencies, is that of a negotiating body, and one that performs this function to the general satisfaction of others. We see no easy way to expand these responsibilities to enable the USTR to take on coordinating functions for something as broad as industrial policy.

[2] There are precedents for such a coordinating body, but none of these have worked well, or at least well enough, e.g., the Council for International Economic Policy, which operated (for a variety of reasons ineffectively) during the Nixon Administration; the Domestic Council, which, though designed as a counterpart to the NSC, has never had the latter's authority or prestige; or earlier and current ad hoc cabinet-level councils, whose informality has prevented them from operating as effectively as the NSC.

integrates domestic and international impacts, and that has sufficient authority to do the job.[1]

b. The Importance of Goals and Consistent Policies

Despite what we believe to be the inapplicability of detailed government guidance over industrial development for the U.S., some Japanese industrial policy instruments are, in our view, worth considering for possible application to the U.S. Most importantly, the Japanese government has established policies that have by and large been internally consistent, and therefore able to meet their desired objectives. Discussed below are a number of specific "strengths" of the Japanese system that have *potential* implications for the U.S. We cannot be certain whether these particular policies would be applicable to the U.S.; we introduce them as possibly applicable because they have been useful and effective in the Japanese context and also because they are not so different from U.S. legal, social, and other cultural traditions as to be obviously inapplicable in a U.S. context:

1. Japan has long been—and in our view continues to be—a goal-oriented state. Its methods of seeking various goals, including industrial development, have changed over time, and will continue to change. It is easier for a late developing country to adopt a general goal of economic growth and industrial development than for an already developed country; the latter, having achieved considerable growth in the past, naturally has less of a sense of where to go in the future. Yet in Japan, the general goal of growth has been, and continues to be, closely linked to the more specific idea of structural adjustment, in particular, just now, the shift to "knowledge intensive" industries. The recent policy environment in Japan has continued to encourage investment in general and investment in knowledge-intensive or high technology areas in particular, i.e., polices are designed to encourage the application of high technology processes to advanced manufacturing industries and a corresponding contraction of basic manufacturing industries that are no longer competitive. A similarly strong commitment that translates into explicit policy actions does not exist in the U.S.
2. Many OECD countries have adopted so-called "positive adjustment policies," which in principle provide incentives to enable declining industries to change their product mix and otherwise shift resources to reflect changing economic conditions. All too often, however, such assistance has been used simply to subsidize existing production.

   In the U.S., programs for trade adjustment assistance have focused on determining the causes of injury, e.g., whether a troubled industry has been hurt by imports, and if so, whether the degree of trouble is sufficient to constitute injury and warrant government assistance. The more important questions, from an economic viewpoint, of whether declining industries should be supported (whether temporarily or permanently) *even* if their main competition comes from abroad, and to what degree such support should be allowed, have received much less emphasis.

   In Japan, on the other hand, the emphasis in policies specifically aimed at declining industries is on achieving the intended result, regardless of the source of pressure on the industry. When financial support has actually been given to declining industries, it typically has been given with strings attached—namely, that the beneficiaries actually take steps to reduce capacity in unprofitable areas and, to the degree possible, move into new areas that will not require indefinite government assistance. Indeed, under the current policy framework, government assistance specifically targeted to declining industries cannot be provided unless the industry itself initiates the process, which in turn means that the industry commits itself to negotiate with the government on an adjustment program. Because the often politically intractable problems of phasing out declining industries are relatively new for Japan, it is too early to say that Japanese will continue to be able to deal with them as effectively as they have in the past. Indeed, there is some evidence to suggest that Japanese are having more difficulty phasing out basic manufacturing industries, such as aluminum or petrochemicals, than the earlier declining industries, such as toys or basic textiles. Still, in a majority of the cases that have occurred to date, the Japanese government has a much better record in the implementation of policies leading to genuine structural adjustment than other advanced industrial countries.
3. In other areas, too, Japanese industrial development policies are, generally speaking, internally consistent, though, as discussed in later chapters, the more diverse the goals being sought, the more difficult it is to achieve such internal consistency. Rarely can one point to a single policy instrument as critical, but taken together the policy packages that are constructed provide considerable support to the

[1]For all practical purposes, whatever coordinating body is set up must have presidential authority in the real as well as the legal or organizational sense. This suggests, in turn, that it needs to be in the White House, and that it needs a staff with at least the tradition of consistency and quality of the NSC staff.

goal in mind. The obvious implication for U.S. policy makers is the importance of coordinating objectives and instruments to maximize policy leverage on complementary goals, while at the same time minimizing the negative effects of instruments that are targeted on conflicting, or apparently conflicting, goals.

Tax policy, for example, has been important to Japanese industrial development less because of specific provisions of the tax laws directed at particular industries (i.e., "tax breaks") than because of a general bias in the tax system toward savings and investment, which, in turn, has enhanced the effectiveness of the specific provisions. By contrast, and despite recent improvements, the current U.S. tax system has a strong bias toward consumption.

RECOMMENDATIONS:

In hard-hit areas of the U.S. economy, we suggest a linking of government financial assistance to mandatory industrial adjustment. If government money were made more "conditional," it is more likely to be used to phase out uncompetitive production capacity, to diversify product lines, and to retrain workers, rather than simply to improve short-term cash flow for declining industries.

On tax policy, we endorse the many current reviews of the U.S. tax system that attempt to assess whether savings and investment are being adequately promoted, as against consumption. Moreover, we suggest careful and additional study of Japanese tax measures, less because of their possible contribution to growth in targeted areas than because of their possibly indirect subsidization effects to activities that the U.S. government might wish to promote. Both elements are found in Japan's system of tax-free reserves. Tax-free reserves have been used selectively to target industries. But they have also been useful in reducing the systemic risk inherent in types of activity that the government of Japan would like to encourage or at least partially insure. These have been applied effectively for foreign exchange exposure, "bad debts," and many other areas. Take the example of the tax-free reserve established to provide a contingency fund for unanticipated buy-backs of leased computers.[1] The provision permits individual firms to set aside money up-front to respond to the losses implicit in anticipated buy-back requirements. The system effectively improves the cash position of eligible firms in the short-term and appears to us justifiable on U.S. accounting principles (i.e., the losses are tax deductible). There are losses to the treasury in the short-term, but no long-term cash losses because the reserves must be paid back at some point if they are not fully utilized. Since high technology firms are typically constrained by cash flow problems, creation of tax-free reserves for already permissible tax deductions may be a useful mechanism to aid investment by U.S. high technology firms, without the government's needing to get into the business of trying to "pick winners."

Yet a question regarding possible subsidization also emerges: how much are tax-free reserves actually called upon? Do they tend, on average, to be used to the full amount of the reserves, or are they in fact considerably higher than legitimate needs require? If a reserve typically exceeds the firm's actual requirements, then the tax-free reserve is being used as an explicit tax subsidy to particular operations over and above its more or less legitimate use to stabilize and reduce the risk of cash flow variations. We suggest that the U.S. government study whether some of these reserves are being used in ways that might be viewed as export subsidies. This would mean an item-by-item investigation of tax-free reserves that affect an export business in some fashion, e.g., tax-free reserve usage among computer or other high-technology industries, reserves directed to overseas market development for small businesses, etc.

c. Goals and Tactics of Trade Negotiations

The challenge facing U.S. policy makers, in their attempts to improve access to the Japanese market for U.S. exporters, is to seek goals that are achievable as well as desirable, and to do so in ways that do not prove counterproductive to U.S. long-term interests. Japanese officials are unlikely to take bold initiatives in this regard; hence, it is virtually useless to implore them to do so, let alone to rail at them when they fail to do so. Rather, the emphasis should be on attaining practical results, which means in turn to create incentives for Japanese negotiators to see improved market access as a net gain.

As discussed at the beginning of this chapter, having long had in mind the goal of catching up to the West, Japanese have traditionally looked upon international relations in terms of differences between Japan and the rest of the world.[2] To a large extent, Japanese officials have thought of their responsibility as one of staving off unnecessary influence from abroad, i.e., to adopt selected foreign influences that they would find advantageous, while otherwise insulating the country through a combination of Japan's historical isolation and foreign ethnocentrism.

Paradoxically, perhaps, one can characterize Jap-

[1] A large share of main frame computers in both the U.S. and Japan are leased rather than purchased outright. However, since technology and equipment has been improving so rapidly, computer manufacturers have often been forced to take machines back before the end of the lease, which can cause significant losses. To highly leveraged Japanese firms, such take-backs imposed a serious cash flow burden over and above the implied losses.

[2] Brian Beedham, Foreign Editor of *The Economist*, often characterizes Japanese attitudes in this regard with the phrase, "Stop the world. I don't want to get on."

anese policy making, on domestic and international issues, as both rigid and flexible. As discussed below, policy makers have been future-oriented in the rhetorical sense—always on the look out for new ways to achieve economic prosperity and often adjusting industrial policy instruments accordingly—but have also been reluctant to take a pioneering role that involves sacrifice or pain for themselves. For example, after the oil price increases of 1973-74, the government floated a number of proposals for energy conservation and diversification of sources of supply; yet, little action was taken until the exigencies of the market, namely the second round of price increases in 1979-81, forced the private sector to see such changes as the lesser of the two evils. Until the private sector saw conservation and diversification as inevitable, little actual change was undertaken; once the need for change was accepted, both industry and government moved flexibly and imaginatively. Similarly, Japanese policy makers and the private sector have been extremely flexible about recognizing the eventual need for industrial structure shifts, without necessarily taking such steps until forced to by market forces. Here again, however, once agreement among major participants is reached and the changeover begins, both the government and the private sector move quickly, as adjustment in the shipbuilding industry during the late 1970s and current activities in the Japanese computer and electronics industries show.

Specifically, with regard to trade negotiations, there is little likelihood that either the Japanese government or the private sector will take broad initiatives based on a belief that further liberalization of Japanese trade policies and practices is a process to be hastened—at least in the absence of foreign pressure.[1] In the past, however, once it became clear that the costs of following the "preferred" course of staving off liberalization would probably be greater than the costs of token or partial liberalization, the latter course was chosen. By implication, the Japanese government will respond with still further liberalization in the future if and only if it sees a net gain in doing so.[2]

What, then, might U.S. policy makers do, either instead of, or in addition to, their current courses of action, to encourage Japanese officials to see a greater net gain in increased market access for U.S. producers? We can lay no claim, on the basis of a report that has focused mainly on describing and analyzing Japanese industrial development policy, to being able to outline a full program of countermeasures useful to American negotiators in an operational sense. We do suggest below—again, primarily on the basis of an analysis of Japanese industrial development policies—certain ways that we believe U.S.-Japanese trade problems could usefully be formulated.

1. The U.S. government could of course take punitive actions against what are perceived to be "unfair" Japanese practices, in the form of import restraints or other protectionist policies. The problem is to define fairness, i.e., to avoid being arbitrary in a way that is then counterproductive. Any punitive actions would send a strong message to Japan, and for this reason are currently looked upon with favor by some U.S. policy makers. At the same time, strong actions would almost certainly have harmful effects on the U.S. economy. In strictly economic terms, there seems little doubt that protection against imports tends to impede the process of structural adjustment and economic growth in the protecting countries themselves. On political grounds, a sharp move towards protectionism in the U.S. could trigger a series of retaliatory actions in other countries, not only Japan, that in turn would seriously damage the trading system that developed since World War II. On the other hand, if one could define precisely what the term "unfair" might mean in this context, then threats to impose or at least discuss possible punitive actions in response to such unfair practices could significantly improve the

[1] The Japanese penchant to delay concessions no matter what the issue, rather than occasionally taking a broad initiative (and thereby getting credit for generosity or "statesmanship") has unquestionably contributed to the high degree of frustration felt in the U.S. about relations with Japan. See, for example, the comments of Senator John Heinz (R, Pennsylvania), and Representative Barber Conable (R, New York) as quoted in Richard I. Kirkland, Jr., "Washington's Trade War of Words," *Fortune*, April 5, 1982, pp. 35-39. Senator Heinz is quoted as saying, "The American people feel they are on the receiving end of a one-way street, and they're mad as hell about it." Representative Conable is quoted as saying, "I get so sick of going through the catechism with them that I don't even want to see the Japanese any more. But I tell them, 'understand that you are going to be responsible for our shooting ourselves in the foot on trade.'" Japanese delaying tactics may well be frustrating, but it is still questionable whether U.S. suggestions that the Japanese will be responsible for American self-destructiveness are likely to be persuasive.

[2] In our view, the Japanese government is much more likely to see a net gain to liberalization if it must make its calculations in terms of economic as well as political choices. Merely asking Japanese officials to "share the burden," as U.S. negotiators are prone to do, is meaningless; Japanese do not see U.S. burdens as something they necessarily should share, and in any case, they would be inclined to do so only if they could see a concrete gain, or a concrete loss in not doing so. The gain or loss has to be concrete; the notion of abstract, or universalistic, gains, in the Western sense of the term, have almost no impact in Japan. In fact, Japanese policy makers all too often hint that they need, and even rely on, U.S. government pressure to force through decisions that might be desirable in terms of relations with the U.S., but are otherwise unappealing to "normal," i.e., domestically-oriented, policy makers.

level of debate and negotiation among all countries, not just with Japan. This is no easy task, however, and we mention the whole notion of defining fairness mainly to show the difficulties inherent in a course of action that assumes punitive measures would constitute a net gain to the U.S. In any event, "unfair" practices, however defined, must be identified and discussed to the extent possible in a nonconfrontational manner—if only to formulate clearly the goals and constraints facing policy makers in each country in a way that enables their counterparts in other countries to negotiate constructively.

2. In dealing with problems of access to the Japanese market in general, U.S. policy makers should concentrate on areas where the U.S. private sector can in fact follow through on gains made by trade negotiators, and where comparative advantage is clearly in the U.S. favor. In dealing with problems of market access for areas of international trade subject to direct, government-to-government negotiations, U.S. policy makers should take advantage of whatever leverage they themselves directly control and construct proposals with built-in and concrete incentives and disincentives. To pick an area where recent U.S. negotiators have been relatively successful—namely, airline traffic rights—the U.S. side was able to secure concessions from long-resistant Japanese counterparts at least partly, if not largely, because the Japanese side saw concrete benefits to granting the U.S. some long-sought requests. But in this case, perhaps exceptionally so, the industry is both oligopolistic and directly subject to government regulation. Hence, a reciprocity-style strategy could be particularly effective. These same conditions do not hold in other industries.[1] By contrast, attempts to improve access to the Japanese market for U.S. cigarette manufacturers have been less successful at least partly because no comparable disincentive has yet been found to bear on the decisions of the Japan Monopoly Corporation, which has jurisdiction in the case.

The famous case of the ground rules governing purchases by the Nippon Telegraph and Telephone Public Corporation (NTT) involves a combination of government and market pressures. Though U.S. negotiators could and did appeal for concessions based on the GATT framework for government procurement, the incentives and disincentives influencing Japanese producers who themselves sell to NTT seemed to us to be the deciding factor in the Japanese negotiating position. Those companies that might have feared future restrictions on their exports to the U.S. if NTT failed to open its purchasing practices at least to some degree doubtless contributed to the Japanese government's decision to formulate various compromise positions. Here, as well as in other areas of high technology trade, the key factor that influences the course of the negotiations is less the merits (or lack of merits) of market access regulations in the short term than the likely technological and trade developments over a medium to long term (i.e., market forces broadly defined). If, as a result of NTT's trying to prevent U S. producers from bidding on NTT contracts, Japanese firms fear that they will fall behind U.S. firms in technological development—e.g., by having less access to U.S. technology or by having to pay more for it—or fear that they might lose access to those few markets where the U.S. government has direct leverage, the incentive for NTT to liberalize will be much stronger than if U.S. negotiators sought such open bidding simply as a matter of principle.

Similarly, it does little good for U.S. negotiators to complain about discrimination in Japanese private/public high technology research projects if American firms are in fact uninterested in participating in such projects, whether because they feel they have superior technology anyway (a standard IBM position, for example), because they fear their participation in a collaborative project would lead to their losing more technology than they would gain, or, because they fear that such cooperation might open them up to antitrust actions in the U.S. To the extent that a number of U.S. firms would like to participate in these and other kinds of cooperative programs, U.S. negotiators should stress the direct, mutual benefits of national treatment, and the potential direct costs of Japan's continuing its traditionally exclusionary policies. The point, again, is to link U.S.-Japanese negotiations less to matters of principle, as these might be perceived in U.S. domestic politics, than to matters of cost and benefit as Japanese offi-

[1]Interestingly, Japanese complaints that the 1952 airlines treaty is unfair apparently had little impact on U.S. negotiators. Fellow U.S. negotiators representing other industries, or, in the case of the USTR, American interests in general, may well envy the advantageous bargaining position that, because of the historical circumstances, their airline colleagues enjoyed. Still, when all is said and done, no negotiator is going to improve his or her position by spending much time imagining how things would be better if the conditions governing the industry in question were more advantageous at the start of the negotiating process. Certainly Japanese officials have spent little time, in their 37 years of economic growth since the end of World War II, imagining how their position during this period might have been better had Japan not lost the war.

cials (and the private sector interests they represent) are likely to see them.

3. U.S. policy makers should push for faster liberalization of Japanese capital markets. The reason is less the potential gains to the U.S. financial sector *per se*—in fact, there are gains to some parts of the financial sector, and losses to others—than the prospective by-product gains to U.S. manufacturing and service industries generally. By giving a broad range of U.S. firms better access to Japan's already large and growing capital markets, a faster liberalization process would not only improve U.S. prospects for investing in or exporting to Japan, but also improved access to a larger supply of funds for whatever purpose. This additional liberalization of Japanese capital markets would of course create more competition for existing U.S. financial entities in the Japanese market. But other U.S. financial entities, particularly those such as venture capital firms that have a comparative advantage vis-a-vis much less experienced Japanese counterparts, would be given a spur. Although the evidence is so far only suggestive, a liberalization of capital markets that also enhances cross-direct investment between the U.S. and Japan appears likely to expand the share of manufactured goods in Japanese imports.

   In the short term, faster liberalization of Japanese financial markets could weaken the yen still further, and thereby exacerbate the current U.S.-Japan bilateral trade deficit. However, since any proposal for an accelerated opening of Japanese financial markets would doubtless take several years to implement, the feared short-term costs would probably be limited, while the medium-to-long-term gains of greater liberalization would likely improve overall U.S.-Japanese economic relationships by more than a compensating amount. Moreover, U.S. pressures for faster liberalization will support the broad-based domestic pressures in Japan for deregulation of financial (and other) markets. To the extent that such deregulation and a resultant shift to more general types of policy also reduces the government's ability to use the financial system to implement detailed industrial policy objectives, the broad goal of "transparency" is also enhanced.

4. U.S. policy makers should maintain continuing, steady pressure on the Japanese government in those areas where real gains can be made and the U.S. private sector can follow through. In the past, U.S. pressures on Japan to open its markets or make other concessions have been episodic, driven more by domestic political considerations in the U.S. than by the underlying economic merits of each issue. As a result, it has been relatively easy for Japanese negotiators to resolve the immediate issues being raised—or at least to mitigate them for a while—by offering only limited concessions, and then only after raising the costs to the U.S. by putting up a good fight. Japanese policy does respond to outside pressure, especially if Japanese negotiators can envision concrete gains. But, as noted above, Japanese are unlikely to take the initiative in this process. Thus, continued pressure from other countries is needed. The issue is how to apply such pressure in a way that produces concrete gains for the U.S.—as against, to use a popular phrase in Washington today, "shooting ourselves in the foot.

CHAPTER III

Japanese Economic Development

Japan's economic development is an achievement beyond question. The causes and consequences of this achievement, especially the role of government, are subjects of considerable dispute.[1] The scope of this report does not permit a fundamental assessment of these issues. We do try, in this chapter, to outline what these issues are, and to make some comments on them, as a basis for discussing the likely course of Japanese economic development during the 1980s and likely implications for the U.S.

We begin with a brief review of the record of Japanese economic development since the Meiji Restoration, carrying this through to the period since 1973, when the unusually high rates of growth of the earlier postwar years fell to roughly half the previous level. This sets the stage for a review of various explanations of how or why Japan's unprecedented record of development occurred, and a discussion of prospects for future Japanese economic development. In this context, we then look specifically at Japan's economic interaction with the rest of the world, particularly with the U.S. The chapter concludes with a discussion of how likely future trends in growth and trade will influence Japanese industrial development policies and Japan's economic relations with the U.S.

A. The Record of Development

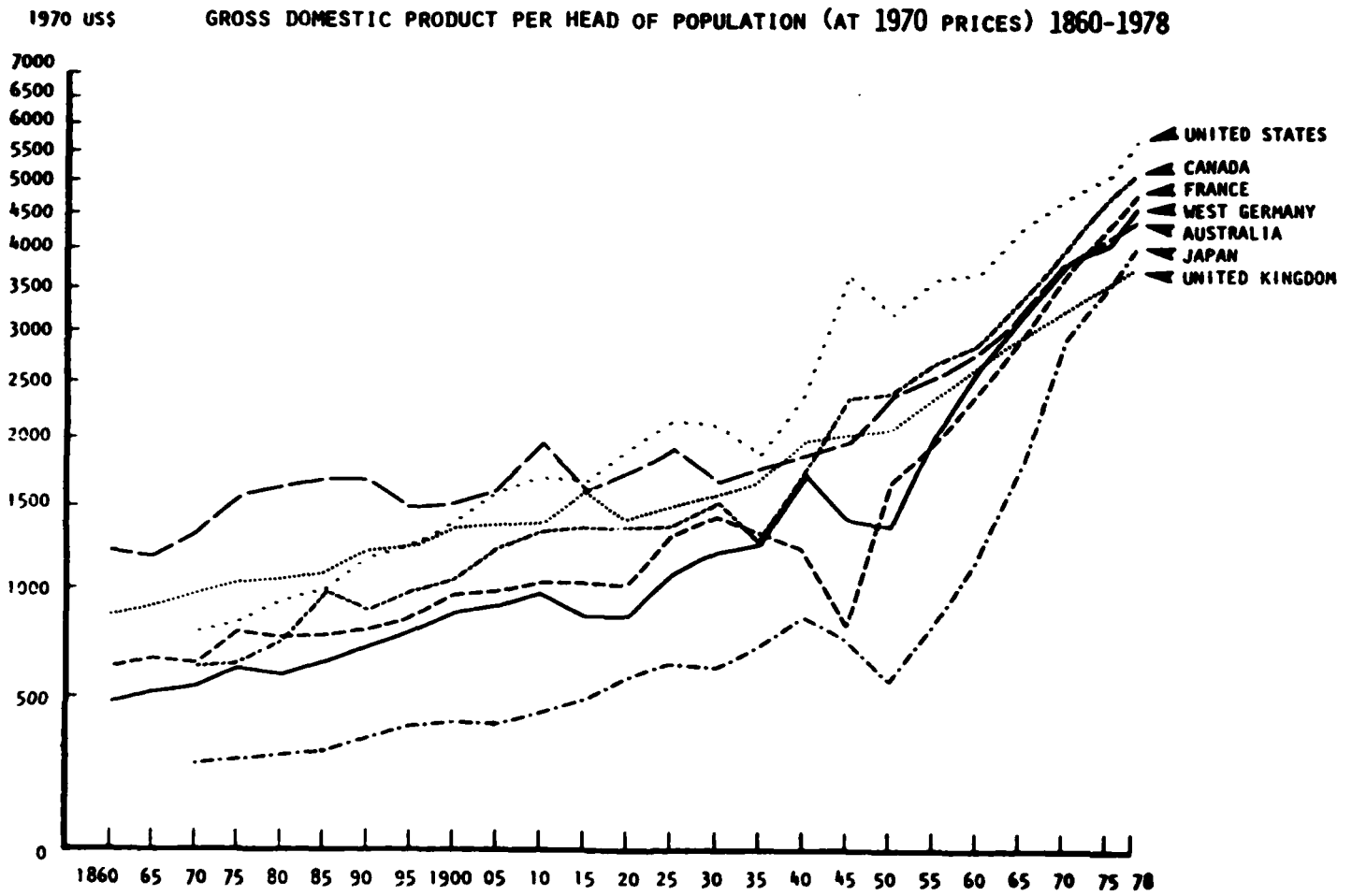
Japan's economic achievements are visible for all to see and, in general terms at least, easy to document. Figure II-1 shows growth in per capita output for roughly a 100-year period for seven advanced industrial countries.[2] Between the Meiji Restoration, dating from 1868, and World War II, Japan's performance in terms of growth in per capita output was comparable to that of the other countries, though, as is evident in the figure, its absolute level of product per capita was much lower. Total output is shown in Figure II-2. It reveals a similar pattern: growth of about 3 percent a year from the Meiji era until World War II, followed by an extraordinary postwar growth rate averaging 9.5 percent a year from 1947 to 1973. As is now well known, Japan's per capita income has risen to a level comparable to, or higher than, levels achieved by other advanced industrial countries.

Since World War II, Japan's performance has been unprecedented: it not only recovered quickly from the worst effects of the war, as did West Germany; it went on to achieve higher rates of economic growth, for a longer period of time, than any other advanced industrial country. Indeed, the record of development itself is indisputable. Japan's evolution from a war-shattered economy, in which food was so short that emergency American aid literally made the difference between starvation and survival, to an economy producing much of the world's lowest-cost steel, highest-quality ships, and most advanced computer and electronic products is known virtually everywhere. Even in the years since 1973, when world growth rates have been much lower than the levels achieved in the preceding 25 years, Japan's growth rate has remained higher than that of

[1] Economic and political success always reflects some degree of success in government policy. However, success also gives a patina of correctness to policies that may have been only marginally useful, or even counterproductive. Japan has grown so rapidly since World War II that the role of government must have been positive. But, as discussed in detail later in this chapter, scholars have found it extremely difficult to measure just how positive this role has been—or even what it has been.

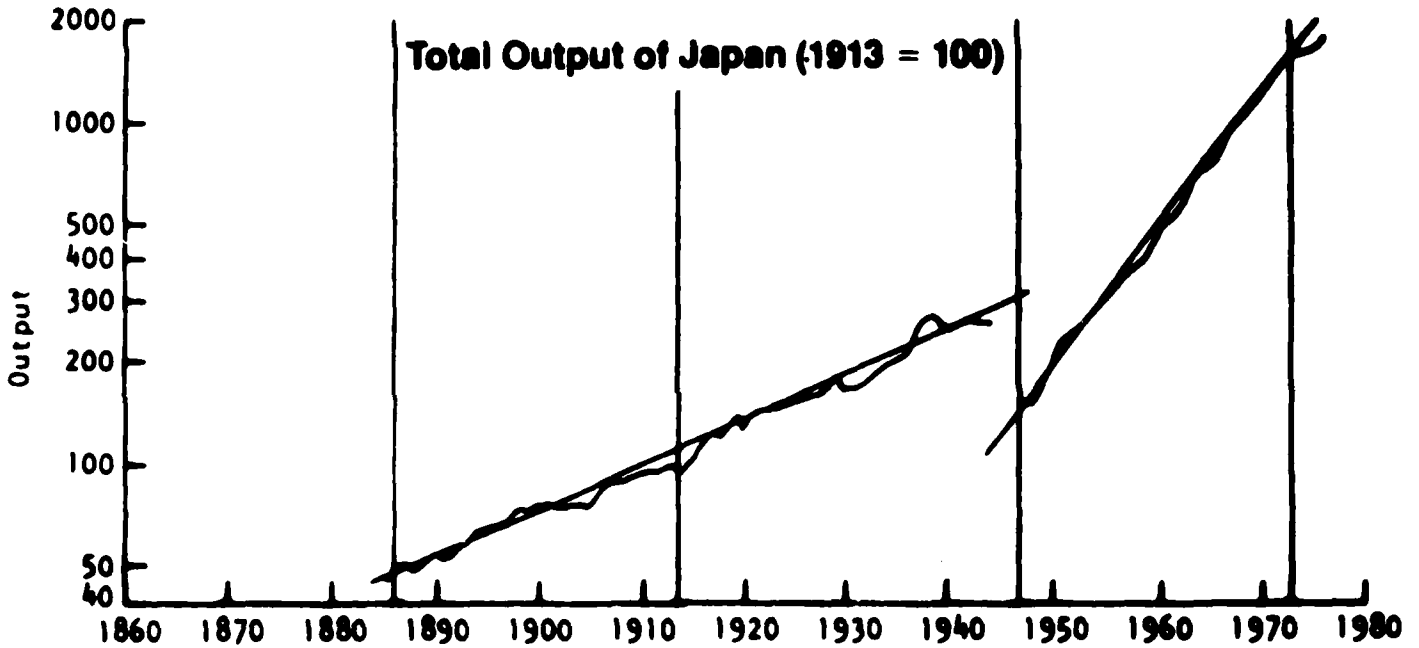
[2] Many terms have been used to describe countries that have achieved a high level of per capita income by historical standards: developed countries, advanced countries, industrial countries, advanced industrial countries, and others. Many standard data sources use the term industrial countries. For reasons explained in greater detail in Chapter III, we use the term "industrial" to refer to a continuum of economic activities not specifically not simply to those activities associated with manufacturing industries. Thus, in referring to the economically most advanced countries, we prefer the term "advanced industrial countries," in spite of the cumbersome nature of the term. All countries are in the process of moving from predominantly one set of industries to another, and the advanced industrial countries, like developing countries (both the middle income and the least developed countries), are also in a process of continuing change and development (e.g., from predominantly manufacturing to predominantly service industries). Accordingly, all tables, figures, and discussions in this report use the categories of countries referred to in the preceding sentence, regardless of usage in the original source.

Figure II-1



SOURCE: ANGUS MADDISON, "PER CAPITA OUTPUT IN THE LONG RUN", KYKLOS, VOL. 32, 1979.

Figure 11-2



Source A Maddison, "Phases of Capitalist Development," *Banca Nazionale del Lavoro Quarterly Review*, no 121 (June 1977), pp 103-137

Note The straight lines are eyeball trend lines The gap represents the war years for which data are unavailable

other advanced industrial countries. This long-lasting drive for relatively high growth has become a subject of considerable interest in the U.S., both with regard to its causes and to the possibility that Japan's growth rate might continue to remain higher than other advanced industrial countries for some years hence.

1. Legacy of the Past: From the Meiji Restoration to Defeat in World War II

Japan's impressive post-World War II growth reflects, in many ways, an equally impressive prewar legacy. Within 40 years of the Meiji Restoration, Japan had transformed itself from a crumbling feudal society to one of the world's major powers. As noted above, economic growth averaged 3 percent a year until World War II, in spite of setbacks sustained in three periods of downturn, including the global depression of the 1930s. Defeat in World War II left much of this achievement shattered, but did not destroy the legacy it imparted to the postwar period.

The Meiji Restoration ushered in a process of modernization, in which a much broader range of government and private institutions and administrative practices evolved, based in part on a conscious adoption of Western practices. Throughout this period, the government actively promoted manufacturing and commercial activities considered vital for the national interest. Often the government built factories at its own initiative, or subsidized their construction by private interests. Industries started by the government were then frequently turned over to the private sector—though more on budgetary, or practical, grounds, rather than the kind of free-market, philosophical grounds associated with economic thinking in the West. In any case, the government's promotion of manufacturing industries did not reflect an interest in industrialization per se, but rather in the more general goal of building a militarily powerful state, which would then be strong enough to offset Western influence, deter and prevent Western colonization (the common pattern elsewhere in the world), and eventually rid Japan of various "unequal" treaties imposed by Western powers, including the U.S., in the 1850s. The success of Japan's modernization enabled the country to colonize Taiwan, Korea, and parts of the Chinese mainland.

Yet the emergence of a government that sought particularly to promote manufacturing industries could not by itself have created the extraordinary rates of economic growth that occurred. For this, considerable social and political flexibility was also required. Indeed, among their other strengths at the beginning of the Meiji period, Japanese were highly educated by the global standards prevailing at the time, and soon became even more so, as the country's new leaders recognized the importance of education as a means of achieving the modernization they sought. Early in their tenure, the Meiji leaders established a system of universal primary education. The idea appears to have been twofold: to create the expertise needed to assimilate Western technologies and methods, and concurrently to promote a strong national identity through the retention and strengthening of Confucian moral training. By the 1920s, men with professional training occupied a high proportion of the top managerial positions in manufacturing and commerce. By the late 1930s, Japan had become a modern industrial state, supporting large military forces and overseeing a colonial empire similar to, if less extensive than, those of the leading Western powers.

Defeat in World War II not only cost Japan this empire, as well as extensive overseas investments, but many traditional markets and sources of supply were also closed off. The country's military and professional elite was discredited. A large proportion of the country's industrial and urban base—40 percent of capital stock by some estimates—was destroyed. Claims for war reparations were imposed by the victorious allied powers.

2. The Japanese "Miracle": From the Allied Occupation to the Early 1970s

Immediately after the war, the country came under the control of the Supreme Commander, Allied Powers (SCAP), meaning General of the Army Douglas MacArthur and his staff of officers and civilian advisors. SCAP's initial policy goals included an effort to prevent Japan from having the physical or moral basis for waging war ever again, the introduction of a democratic political system, the replacement of state-run or oligopolistic industries by a more competitive system that entailed a breakup of the extraordinarily powerful holding companies known as *zaibatsu*, and a major land reform that entailed the breakup of large and/or absentee-owned holdings. In retrospect, the strong hand that SCAP exercised in the initial postwar years seems to have constituted a stabilizing influence on a country that, in its own eyes, was in a state of emotional and psychological shock at being defeated and occupied.

By 1947, as it became clearer to Washington that the Soviet Union had little interest in the kind of cooperative postwar development envisioned in the Yalta and Potsdam agreements, and as China underwent a communist revolution of its own, Japan began to be viewed as a potentially important ally. This shift in American government thinking brought about a major change in occupation policies, away from the previous emphasis on correcting past Japanese behavior and toward a new emphasis on reconstructing Japan's economic power to enable it to assist the U.S.—or at least to insulate it more from

communist appeals in domestic politics, similar to the appeals then plaguing France and Italy. Among various specific policies pursued to this end, the most important was probably the introduction of a sudden (and successful) stabilization program to halt postwar inflation.

The Korean war, which could conceivably have led to renewed bombing of the Japanese islands or a U.S. (and allied) defeat, leading in turn to further communist advances, turned out to have fortuitous consequences for Japan. At the time the war broke out in June 1950, Japan's previously runaway inflation had already been solved by SCAP's stabilization program, manufacturing production had nearly returned to prewar levels, and a viable administrative system had been more or less reconstructed. The Japanese economy was thus able to use the surge in demand stemming from the military requirements of U.N. forces in Korea as a means of building up its basic manufacturing industries still further. Indeed, many of the industries that were later to play a leading role in Japan's subsequent economic progress received an important stimulus from the Korean conflict.

At the end of the occupation on April 28, 1952, Japan still had the per capita income of a poor country, roughly 40 percent of the labor force was still engaged in agriculture, and the absolute level of capital stock, technology, and labor productivity was still very low compared with the West; at the same time, Japan had a history of high economic growth on which to build, the labor force was well-educated, an already large cadre of professionals (engineers, managers, scientists, etc.) was rapidly growing even larger, and the political process was in the hands of a coalition of conservatives that favored and fostered a formal alliance with the U.S. Meanwhile, the U.S. continued to pursue a policy of helping Japan build its economic strength and of maintaining troops and bases in the country that served as a protective umbrella under which further economic development could take place.[1] With the world economy poised to expand at an historically unprecedented rate, Japan took great advantage of this generally favorable environment and of the declining barriers to international trade that both accompanied it and helped spur it.

Even as rapid growth took hold, the pessimism and uncertainty of the 1940s and early 1950s continued to pervade the Japanese economic outlook. Some said the growth achieved at that point was mostly a catch-up phenomenon that could not go on much longer. Others expected the world economic environment to turn against Japan (without, however, being specific about when or why this might happen, or prescient enough to anticipate or head off the actual downturn that began in 1973). One index of this kind of generalized pessimism is the attitudes reflected by official economic plans; as recently as the early 1970s, the actual level of economic growth was still exceeding government plans and projections (see Table II-1).

Yet, by the early 1970s, Japan had unquestionably developed into one of the most advanced countries in the world, as measured by most typical indicators: Adult literacy, already high, reached 98 percent by 1960 and 99 percent by 1970. By 1960, Japanese life expectancy at birth, 68 years, nearly reached the average for advanced industrial countries, 70 years, and went on to exceed the average later in the decade. Infant and child mortality rates behaved similarly—i.e., somewhat worse than, but approaching, the standards of other advanced industrial countries in 1960, equaling or surpassing them by the early 1970s. Gross domestic product per capita rose from $188 in 1952 (in current U.S. dollars) to $2,823 in 1972, or more than half the U.S. level at that time of $5,551. In terms of industrial structure shifts, more than 34 percent of GDP originated in manufacturing in 1960, as against an average of 31 percent for all advanced industrial countries; comparable rates in 1970 were 36 percent for Japan and 29 percent for advanced industrial countries generally (see Table II-2). To be sure, in the rush for development, Japan lagged behind other advanced industrial countries in some indices. For example, 16 percent of the labor force was still in agriculture in 1971, roughly twice the average share for all advanced industrial countries at that time. The distribution system retained many characteristicsof a middle-income country, as did the oft-discussed "dual structure of the economy," meaning a distinction between a small number of large, extremely efficient firms and a large number of small, relatively inefficient firms.[2]

But considering where Japan had come from, the country's many successes were much more important than the gaps that remained in its record of development.

[1]So-called "special procurement" expenditures by the U.S., mainly military activities, accounted for roughly 30 percent of Japan's total commodity imports between 1951 and 1955. For this period and several years thereafter, special procurement expenditures made a significant contribution to Japan's economic recovery, since continued weak export competitiveness provided insufficient foreign exchange to meet import needs.

[2]Data for this paragraph are from the International Bank for Reconstruction and Development, *World Tables*, Second Edition (1980), various tables; idem., *World Development Report 1981*, various tables, and Hugh Patrick and Henry Rosovsky, eds., *Asia's New Giant* (Washington, D.C.: The Brookings Institution, 1970), pp. 4 and 17.

TABLE II-1
ECONOMIC PLANS, 1956-80 (FISCAL YEARS)

Name of Plan	Five-Year Economic Self Support Plan	New Long-range Economic Plan	Income-doubling Plan	Medium Term Economic Plan	Economic & Social Development Plan	New Economic & Social Development Plan	Basic Economic & Social Plan	National Economic Plan
Period covered by Plan	1956-60	1958-62	1961-70	1964-8	1967-71	1970-75	1973-7	1976-80
Rate of economic growth projected (% per year)	5.0	6.5	7.2	8.1	8.2	10.6	9.4	6.25
Actual performance (% per year)	8.7	9.9	10.7	10.6	10.9	6.1	4.1	5.2
Production growth rate in mining & manufacturing projected (% per year)	7.4	8.2 (1957-62)	10.5	9.9	10.2 (1966-71)	12.4	10.0	9.5
Actual performance (% per year)	15.6	13.5 (1957-62)	13.8	13.6	13.2 (1966-71)	3.6	2.1	7.0

SOURCE: *Japan Echo*, Vol. VI, special issue (Tokyo, 1979), pp. 90-1, updated from Bank of Japan, *Economic Statistics Monthly*, No. 421 (April 1982), pp. 7 and 14.

TABLE II-2
STRUCTURE OF PRODUCTION

(DISTRIBUTION OF GROSS DOMESTIC PRODUCT AT FACTOR COST)

	1960		1970		1979*	
	Japan	Advanced industrial countries	Japan	Advanced industrial countries	Japan	Advanced industrial countries
Agriculture	12.8%	6.4%	6.1%	4.2%	5%	4%
Manufacturing	34.3	30.6	35.8	29.4	30	27
Other industry	10.8	10.4	10.6	10.2	12	10
Services	42.1	52.5	47.5	56.1	53	59

*Reported rounded off in the source

SOURCE: 1960 and 1970, International Bank for Reconstruction and Development, *World Tables*, Second Edition [1980], pp. 391-392, 394-395; and 1979, IDEM, *World Development Report 1981*, p. 139.

3. A Changed World Context: 1973 to the Present

With a changed world economic environment, the 1970s also saw a major transformation in the pace and structure of Japanese economic development. The magnitude of the changes in the world environment can be seen even in the aggregate statistics. Table II-3 compares, in real terms, volume growth in GDP, industrial production, exports, and imports among advanced industrial countries for two time periods, 1963 to 1973 and 1973 to 1980. The use of 1973 as a dividing point is based on the occurrence that year of three major changes in the postwar economy: the final dissolution of the Bretton Woods fixed-exchange rate system, a fourfold increase in world oil prices, and the peak of a global business cycle. For the advanced industrial countries as a group, including Japan, the annual rate of growth of output, as measured both by gross domestic product and industrial production, fell by half; export volume growth by 44 percent; import volume growth by two-thirds. As noted above, although Japan's GDP growth rate in absolute terms remained higher than other advanced industrial countries, in relative terms Japan's economy experienced a more severe slowdown after 1973 than the average for such countries: the rate of growth of gross domestic product fell by more than 60 percent, industrial production by 75 percent, export growth by 44 percent, and import growth by more than 90 percent. This precipitous fall in relative terms led the economy, for the first time since the end of the occupation, to perform below expectations (refer back to Table II-1).

The many elements that contributed to this dramatic (and subsequently sustained) weakening of world economic performance were generally not anticipated.[1] Rapid growth had already lasted for more than two decades, and, at the time, even those who were predicting a slowing of growth potential did not foresee the cumulative problems that actually emerged. In retrospect, one can now see that many sources of postwar growth were either temporary or particular to this period; in any case, most were eroding by the mid-to-late 1960s, especially in the U.S. By the late 1960s and early 1970s, various demand and supply factors that had contributed to the catch-up growth that followed the Great Depression and World War II were largely dissipated. For example, much of the growth momentum that stemmed from a narrowing of technological and capital gaps, between Western Europe and Japan on the one hand and the U.S. on the other, had largely played

[1]Many studies discuss these various forces and how they combined to bring about major changes in the economic system as a whole. Hudson Institute studies bearing on this question include: Herman Kahn, *World Economic Development* (Boulder, Colo.: Westview Press, 1979); Irving Leveson and Jimmy W. Wheeler, eds., *Western Economies in Transition: Structural Change and Adjustment Policies in Industrial Countries* (Boulder, Colo.: Westview Press, 1980); Herman Kahn and Thomas Pepper, *The Japanese Challenge: The Success and Failure of Economic Success* (New York: Thomas Y. Crowell, Publishers 1979); and Jimmy W. Wheeler, "Stagnation in the West?, HI-3027/1/2-DP (Croton-on-Hudson, N.Y.: Hudson Institute, July 1979). See also W. W. Rostow, *The World Economy: History and Prospects* (Austin: University of Texas Press, 1978), and Paul McCracken et al., *Towards Full Employment and Price Stability* (Paris: Organisation for Economic Co-operation and Development, June 1977).

TABLE II-3
GROSS DOMESTIC PRODUCT, INDUSTRIAL PRODUCTION AND FOREIGN TRADE OF SELECTED COUNTRIES, 1963-1980

(ANNUAL RATE OF CHANGE IN VOLUME)

	1963-1973	1973-1980
Advanced Industrial Countries[1]		
GDP	5 %	2.5%
Industrial production	6	2.5
Exports	9	5
Imports	9	3
United States		
GDP	4	2
Industrial production	5.5	2
Exports	7.5	6
Imports	9.5	2.5
Canada		
GDP	5.5	1.5
Industrial production	6.5	1.5
Exports	10	2.5
Imports	11	3
Japan		
GDP	10.5	4
Industrial production	12	3
Exports	16	9
Imports	14.5	1
France		
GDP	5.5	2.5
Industrial production	5.5	1.5
Exports	10.5	5.5
Imports	11	5.5
Germany (Federal Republic)		
GDP	4.5	2.5
Industrial production	5	1
Exports	9	4.5
Imports	10.5	4.5
Italy		
GDP	4.5	3
Industrial production	5.5	3
Exports	11.5	5.5
Imports	8	2.5
United Kingdom		
GDP	3	1
Industrial production	3.5	−0.5
Exports	6	4
Imports	7	1.5

[1]Excluding Greece, Portugal, Spain, Turkey and Yugoslavia.

SOURCE: General Agreement on Tariffs and Trade, *International Trade, 1980/81* (Geneva: 1981), Table A 14.

itself out.[1] Similarly, in the U.S., and by the early 1970s in Western Europe as well, economic growth lost momentum with the maturation of two previously leading sectors: automobiles and consumer durables. Basically, with the slowing of population growth and on the aging of the "baby boom" generation, automobile and consumer goods sales became increasingly dominated by replacement demand.[2] Meanwhile, new growth sectors that could pick up the slack failed to emerge. Despite this decline in growth potential, growth rates themselves were maintained at relatively high rates by a combination of excess global liquidity, which had been created in part by attempts to preserve the fixed exchange-rate system, a resulting commodity boom, and a business cycle expansion that had begun in 1971. In this overheated global environment, basic manufacturing industries in many countries expanded capacity simultaneously, creating extreme levels of excess capacity worldwide.

In general, by the early 1970s, most advanced industrial economies were facing a period of declining growth potential, while actual growth persisted at high and unsustainable levels. As a result, the advanced industrial countries were highly susceptible to the shocks that hit the world environment in these years, particularly the three phenomena of 1973 mentioned above, i.e., the collapse of fixed exchange rates, the oil price increases, and the peak of a global business cycle. These shocks not only jolted the system in 1973, leading to a global recession greater than any since the end of World War II, but when they were accompanied by a series of macroeconomic policy mistakes (notably a U.S. failure to dampen inflation) and later by a second "oil shock" in 1979-80, the result was almost a decade of stagflation, replaced during the past year and a half by stagnation and a considerable delay in an expected upturn.

Amidst these many problems in the world environment, Japan has continued to perform better, in terms of economic growth, inflation, and adjustment in its balance of payments, than any of the other advanced industrial countries. (Tables II-4, II-5, and II-6 compare annual data since 1973 for the major advanced industrial countries on output, inflation, and current account balance.) However, as noted above, while performing better than others in abso-

[1]The U.S. still retained important leads in technology and in productivity levels. However, the size of the gap had declined to a point where it no longer represented as strong a force for economic growth in the other advanced industrial countries.

[2]The timing and magnitude of these trends varied significantly among countries, particularly with reference to the "baby boom," which at any rate is a U.S. and Canadian phenomenon. Western Europe and Japan have important age cohort differences, but not of the same magnitude as the two North American countries.

TABLE II-4
ADVANCED INDUSTRIAL COUNTRIES: CHANGES IN OUTPUT, 1963-82[1]

(IN PERCENT)

Real GNP	Average 1963-72[2]	Change from preceding year									
		1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Canada	5.5	7.6	3.6	1.2	5.5	2.1	3.7	3.0	—	3.0	−0.5
United States	4.0	5.8	−0.6	−1.1	5.4	5.5	4.8	3.2	−0.2	2.0	−1.0
Japan	9.8	8.9	−1.2	2.8	5.0	5.3	5.1	5.2	4.2	2.9	3.5
France[3]	5.5	5.4	3.2	0.2	5.2	3.1	3.7	3.5	1.2	0.8	2.1
Germany, Fed. Rep. of	4.5	4.9	0.4	−1.8	5.3	2.8	3.6	4.4	1.8	−0.3	1.0
Italy[3]	4.6	7.0	4.1	−3.6	5.9	1.9	2.7	4.9	3.9	−0.2	2.3
United Kingdom[3]	3.0	7.2	−1.9	−1.1	2.8	1.9	3.6	2.0	−1.6	−2.1	0.8
Other advanced industrial countries	5.0	5.6	3.5	−0.3	3.7	2.4	2.1	3.0	1.9	0.3	1.6
All advanced industrial countries	4.7	6.2	0.6	−0.5	4.9	4.0	4.0	3.6	1.3	1.2	0.8
of which,											
seven larger countries above	4.7	6.3	0.1	−0.6	5.2	4.3	4.3	3.7	1.1	1.4	0.7
European countries	4.5	5.8	2.0	−1.2	4.5	2.7	3.0	3.5	1.5	−0.3	1.5

[1]Composites for the country groups are averages of percentage changes for individual countries weighted by the average U.S. dollar value of their respective GNPs over the previous three years.

[2]Compound annual rates of change.

[3]GDP at market prices.

SOURCE: International Monetary Fund, *World Economic Outlook* (1982), p. 143.

TABLE II-5
ADVANCED INDUSTRIAL COUNTRIES: CHANGES IN PRICES, 1963-82[1]

(IN PERCENT)

	Average 1963-72[2]	Change from preceding year									
		1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
GNP deflator											
Canada	3.6	9.1	15.3	10.8	9.5	7.1	6.3	10.4	10.6	10.0	9.8
United States	3.5	5.7	8.7	9.3	5.2	5.8	7.3	8.5	9.0	9.2	7.0
Japan	5.5	11.7	21.2	7.5	6.6	5.7	4.6	2.6	3.0	2.9	2.3
France[3]	4.8	7.8	11.1	13.4	9.9	9.0	9.5	10.1	11.6	11.0	13.7
Germany, Fed. Rep. of	4.0	6.0	6.9	6.7	3.3	3.8	3.8	3.7	4.8	4.3	4.5
Italy[3]	5.0	11.6	18.5	17.5	18.0	19.1	13.9	15.9	20.8	17.6	17.0
United Kingdom[3]	5.3	7.0	15.0	26.9	14.6	14.0	10.9	15.1	18.9	12.5	10.0
Other advanced industrial countries	5.4	9.3	12.2	12.9	10.4	10.3	9.0	7.7	8.6	8.8	9.0
All advanced industrial countries	4.2	7.4	11.7	11.1	7.6	7.7	7.5	7.9	8.9	8.4	7.6
of which,											
seven larger countries above	4.0	7.2	11.6	10.7	7.2	7.2	7.2	7.9	9.0	8.3	7.5
European countries	4.9	8.0	11.7	13.8	9.7	9.9	8.6	8.8	10.7	9.6	9.8

[1]Composites for the country groups are averages of percentage changes for individual countries weighted by the average U.S. dollar value of their respective GNPs over the previous three years.

[2]Compound annual rates of change.

[3]GDP at market prices.

SOURCE: International Monetary Fund, *World Economic Outlook* (1982), p. 143.

TABLE II-6
SUMMARY OF PAYMENTS ON CURRENT ACCOUNT EXCLUDING OFFICIAL TRANSFERS, 1973-82[1]

(IN BILLIONS OF DOLLARS)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982[2]
Advanced industrial countries	17.7	-13.9	17.9	- 2.6	- 5.7	29.8	-10.2	-44.8	- 3.7	11.0
Canada	—	- 1.6	- 4.6	- 4.0	- 4.0	- 4.0	- 4.3	- 1.9	- 5.8	- 5.0
United States	9.1	7.6	21.2	7.5	-11.3	-10.9	4.9	8.4	11.0	5.0
Japan	0.1	- 4.5	- 0.4	3.9	11.1	18.0	- 8.0	- 9.5	6.2	13.5
France	- 0.1	- 4.9	1.0	- 4.9	- 1.6	5.2	3.0	- 6.3	- 6.6	- 6.5
Germany, Fed. Rep. of	7.1	13.0	7.6	7.7	8.5	13.4	0.1	- 8.8	- 1.0	10.5
Italy	- 2.2	- 7.6	- 0.2	- 2.6	3.1	7.9	6.4	- 9.5	- 7.3	- 6.5
United Kingdom	- 1.3	- 7.2	- 2.9	- 0.6	1.5	4.5	1.3	11.5	19.8	12.5
Other advanced industrial countries	5.0	- 8.7	- 3.9	- 9.6	-12.9	- 4.3	-13.7	-28.7	-20.0	-12.5
Developing countries										
Oil exporting countries	6.7	68.3	35.4	40.3	30.8	2.9	69.8	115.0	70.8	25.0
Non-oil developing countries[3]	-11.6	-37.0	-46.5	-32.0	-28.3	-39.2	-58.9	-86.2	-99.0	-97.0
Total[4]	12.8	17.4	6.8	5.7	- 3.2	- 6.5	0.7	-16.0	-31.9	-61.0

[1]On goods, services, and private transfers. For classification of country groupings shown here, see source.

[2]Figures are rounded to the nearest $0.5 billion.

[3]The People's Republic of China, which is both a net oil exporter and a low-income country, is included in the total (from 1977 onward) but not in the subgroups.

[4]Reflects errors, omissions, and asymmetries in reported balance of payments statistics on current account, plus balance of listed groups with other countries (mainly the Union of Soviet Socialist Republics and other non-member countries of Eastern Europe and, for the years prior to 1977, The People's Republic of China).

SOURCE: International Monetary Fund, *World Economic Outlook* (1982), p. 158.

lute terms, Japan experienced a greater deterioration in performance when compared to its own past history. Only the United Kingdom displayed a similar decline, relative to its own history. This sharp weakening in Japanese performance reflected a number of special strains that had begun to emerge both within Japan and in Japan's relationship with the rest of the world during the late 1960s. For example, by the early 1970s, the neglect of social and physical infrastructure during the drive for rapid growth was becoming too dramatic to ignore further; pollution and other aspects of environmental degradation were becoming similarly severe. Moreover, Japan's relationships with its major trading partners became strained by concentrated export drives in particular commodities such as textiles, steel, and shipbuilding. This friction in individual industries was intensified by a clearly undervalued yen and by Japan's willingness to maintain a still relatively closed domestic market.

All the while, the Japanese government was extremely slow in recognizing that the country had emerged as a major economic power, and that its sustained current account surpluses since 1968 were not only a sign of economic success, but also a signal that, like other advanced industrial countries, Japan should begin to pick up part of the responsibility for maintaining the stability of the international financial system as a whole. Japan's failure to recognize (or act upon) these changes in its underlying position vis-a-vis other advanced industrial countries contributed substantially to the difficulties surrounding the collapse of the fixed exchange-rate system between 1971 and 1973. Indeed, in several respects, e.g., the need (or desire) to catch up to Western standards in those indices of development in which it still lagged behind, an excessive buildup of new capacity during the 1971-73 global boom, and its unusually heavy dependence on external sources of energy and Middle East oil in particular, Japan faced greater adjustment problems than most other advanced industrial countries.

Even at that, Japan adjusted to the slowdown in world economic growth at least as successfully as other advanced industrial countries, and it continues to improve in terms of most measures of quality of life, relative to other advanced industrial countries. For example, its domestic product per capita, in terms of purchasing power parity comparisons, rose from 62 percent of that in the U.S. in 1970 to over 70 percent in 1979, considerably above the U.K., though still well below France and West Germany (see Table II-7). Similarly, life expectancy at birth came to exceed the average for advanced industrial countries (76 years and 74 years respectively) in 1979. The structure of production has moved closer to that in other advanced industrial countries (refer back to Table II-2); most notably the share of GDP from agriculture fell to only 5 percent in 1979, though as of 1980 some 10 percent of civilian employment remained in agriculture.[1]

TABLE II-7
RATIO OF GROSS DOMESTIC PRODUCT PER CAPITA OF SELECTED COUNTRIES TO THAT OF THE UNITED STATES, 1960-1980

	1960	1970	1979 or 1980
United States	100.0	100.0	100.0
Germany	73.3	82.3	87.4 (1980)
France	61.6	75.9	80.0 (1979)
Japan	31.5	61.6	70.2 (1979)
United Kingdom	66.5	64.9	58.6 (1980)

SOURCE: Irving Kravis, Alan Heston, and Robert Summers, "New Insights into the Structure of the World Economy," *Review of Income and Wealth*, December 1981, pp. 348-349, as reported in Herbert Stein, "The Industrial Economies: We Are Not Alone," *The AEI Economist* (May 1982), p. 2.

This lag in employment in agriculture, the higher share of GDP still derived from manufacturing, and various other indicators suggest that Japan, though it now qualifies as an advanced industrial country, is nonetheless at an earlier stage of development than the U.S. and some other advanced industrial countries. Thus, any evaluation of Japanese economic development, or of the role of government in the development process, depends as much on the standard of judgment being employed as on the "objective" achievements themselves. Compared with the West, at any one point in time, Japan has always lagged behind in certain indices of development, and lags behind even now; compared to the Japan of 25-30 years ago, which is the standard of judgment used by most Japanese, the net success of the postwar record of development is without question.

B. Causes of Development: A Review of Scholarly Literature

Some 15 to 20 years ago, the causes of Japanese economic development seemed clearer than today. On reflection, the reasons are deceptively simple: much less had been written on the subject, and Japan's growth itself was less obvious and dramatic.

[1]The data in this paragraph are from *World Development Report, 1981*, op. cit., and *OECD Economic Outlook, Historical Statistics, 1960-1980* (Paris: Organisation for Economic Co-operation and Development, 1982), various tables.

In prewar and through the early postwar years, Western writing on Japan was dominated by historians, many of whom, in turn, came to their work from a background of having lived in Japan as diplomats, resident educators, or as members of missionary families. Generally speaking, the writings of such people tended to emphasize the importance of the West in Japanese history. The West was seen as the major variable stimulating change and modernization in Japan—and as such, it represented the biggest challenge Japan had ever faced. For their part, many Japanese writings were grouped around the theme that Japan must "catch up to the West,"[1] or, in the case of early postwar writings, the more controversial theme of how best to proceed from defeat, e.g., through pacifism and neutrality, or in close association, economically and politically, with the U.S. and other Western countries. In fact, the notion of a close association with the West, in order to "re-catch up to the West," soon won out over attempts by so-called anti-mainstream academics, journalists, social critics, and politicians to dwell on the causes of war and defeat and possibly to reorganize Japanese society in light of various anti-mainstream, often Marxist-influenced ideas.

Thus, until relatively recently, both Japanese and Western writings took much the same approach: a common theme was the influence of the West on Japan's modernization. Events were described more or less chronologically, with a periodization beginning with the immediate pre-Meiji years—specifically the decline of the Tokugawa shogunate, the reaction of Japanese elites to the "carving up" of mainland China by Western powers, the concern of these same elites that Japan would be next, and the arrival of Commodore Perry's "Black Ships" in Shimoda Bay in 1853. The periodization then continued forward with the use of the reigns of the Japanese emperors as benchmarks, and with each such period characterized by a different emphasis in Japanese development.[1] Both Japanese and Western scholars tended also to look back upon the prewar and war years as a distinct break in historical trends, with Japan's prewar militarism depicted as an unfortunate aberration that interrupted the growth of an otherwise nascent democracy that had begun in earnest during the Taisho-era. The postwar fostering of democracy was then depicted as an essentially successful implementation of the country's earlier experiment with democracy. Finally, through these early postwar years, little was written about Japanese history or economic development, either by Japanese or Western scholars, from the viewpoint of other social science disciplines.[2]

Beginning in the late 1950s, a wave of new literature emerged, both among Western scholars, who began to look beyond a chronological approach to history and to examine events since Meiji in terms of concepts of economics, political science, and sociology, and among Japanese scholars, who began to feel free of the intellectual constraints of previous years. The resulting proliferation of materials led to considerable elaboration on the basic notion that Japanese history or economic development could be explained by the country's attempt to "catch up to the West." Paradoxically, however, this elaboration of detail has not led to a corresponding clarification of fundamental causes of Japanese economic development. The identification and measurement of many proximate causes of development, e.g., growth in capital stock, reallocation of labor, etc., has of course contributed to a much greater understanding of the process, but unwittingly perhaps, it has also diffused scholarly attention such that underlying causes—the reasons behind the proximate causes so recently identified and measured—are left unanswered. For example, economists have described in detail *how* Japanese savings and investment rates have been much higher than in other developed countries and how these contributed to a high rate of growth, but neither they nor their sociological or anthropological colleagues have been able to say, with much certainty at least, *why* these savings and investment rates might have become so high. Indeed, there are signs that some of the economists who have been most successful at identifying and measuring proximate causes of Japanese development are recognizing a need to look for "causes behind the causes," though no accepted methodology exists as yet to achieve this goal.[3]

---

[1]For example, the Meiji era (1868-1912) is usually depicted as a period of rapid modernization, and characterized by a major slogan of the day: *Wakon Yōsai* [Japanese Spirit, Western Knowledge]. The rapid economic development and social reorganization of Meiji was followed by a flowering of political parties and the introduction of diverse schools of Western thought during the Taishō era (1912-1926), e.g., German legalism, European socialism, and a generalized sense of Western empiricism. The end of Taishō also marked the end of "prewar democracy," and heralded the rise of militarism, agrarian nationalism, and Japanese imperialism, all identified as belonging to the "early Showa" era (1926-1945).

[2]The famous book by Ruth Benedict, *The Chrysanthemum and the Sword* (Boston: Houghton Mifflin Company, 1946), is a notable exception, whose appeal was perhaps enhanced by its having been written by an anthropologist who, interestingly enough, had never been to Japan.

[3]This is a major point in a paper by Hugh Patrick presented at the United States-Japan Conference on Cultural and Educational Interchange (CULCON), held in Tokyo, June 1982. See the forthcoming records of the Symposium on Cultural Factors Influencing Japan-United States Economic Relations: Implications for Future Cultural and Educational Programs, available through the United States Information Agency (USIA).

Even if the fundamental causes of Japanese economic development remain unclear, much has been written that does attempt to explain the phenomenon or at least to bring together many of the key elements of such an explanation. We summarize below some recent scholarly works that deal with various aspects of Japanese decision-making processes or organizational style that might contribute indirectly to economic performance, or that try to identify various causes of Japanese economic development directly.

There is considerable disagreement among scholars about the decision-making process in Japan, and in turn its relationship to economic development. Political scientists in the West have tended to describe Japanese decision-making as a process characterized either by consensus or conflict. Those who subscribe to a consensus model tend to argue that decision-making occurs in a generally harmonious environment. They usually stress the alleged commonality of interests among Japanese government officials, businessmen, and politicians. They also tend to emphasize cultural factors they believe to be specifically characteristic of Japan and specifically applicable to the Japanese policy making process. On the other hand, those who see Japanese decision-making as fraught with conflict naturally emphasize examples of such conflict as a way of invalidating the consensus model. This second group of theorists tends to see Japanese decision-making conflicts as generally similar to decision-making conflicts in other developed and/or democratic countries. Still other scholars fall somewhere between these two approaches. For example, in one of his earlier works on bureaucratic politics in Japan, Chalmers Johnson of the University of California argues that, while bureaucratic discussions are characterized by some degree of consensus, conflicts of interest do occur.[1] John C. Campbell of the University of Michigan tries to avoid the extremes of either the conflict or the consensus models by looking at policy disputes as conflicts arising from many causes, including both substantive disagreements and disagreements over such procedural matters as status or "turf."[2]

A similar division in schools of thought among both Western and Japanese political scientists is between a so-called elitist and a pluralist model of Japanese decision-making. Scholars in the elitist school argue that a tripartite power elite exists in Japan, consisting of leaders of the Liberal-Democratic Party (LDP), bureaucrats in key ministries, and executives of big business. Proponents of this view differ on the relative importance among these three elements, but agree that, taking Japanese decision-making as a whole, these groups have much more influence than any others. In effect, the elitist school is a more specialized version of the consensus model mentioned above.[3] Scholars in the pluralist school focus on dissent within organizations and political parties and on the influence of specific pressure groups. The pluralist school is thus similar to the conflict model mentioned above.[4]

In general, though political scientists have provided material that is useful to an understanding of Japanese decision-making processes, they have not concentrated on material that is directly applicable to current policy issues. In fact, given the data requirements needed to analyze a particular issue or process in terms that are professionally acceptable (i.e., to have enough information to avoid appearing speculative or journalistic), political scientists have tended to describe phenomena that are clearly in the past—in effect closed cases. As a result, many detailed discussions of the degree of conflict or consensus that one or another scholar believes to have existed often leave entirely to the reader the practical task of applying insights about decision-making in the past to problems of current or future interest.

At the same time, scholars of Japanese decision-making, of whatever school, have also noted that it is relatively easy to imagine how a consensus could be reached among ministries and/or business groups on such broad policy goals as a desired rate of economic growth, but much more difficult to see how a consensus-based system might work if the objective is to deal with more specific problems, e.g., capacity reductions in a dying industry, investment priorities in a frontier industry, or subsidy and loan programs of government agencies. Unfortunately, scholars have generally not yet addressed the question of whether a consensus or a conflict

[1] Chalmers Johnson, "MITI and Japanese International Economic Policy," in Robert Scalapino, ed., *The Foreign Policy of Modern Japan* (Berkeley, CA: University of California Press, 1977).

[2] John C. Campbell, "Policy Conflict and Conflict Resolution Within the Governmental System," in Thomas Rohlen, Ellis S. Krauss, and Patricia G. Steinhoff, eds., *Conflict in Japan* (forthcoming).

[3] For an excellent, if somewhat dated, discussion of the English and Japanese literature on policy-making in Japan and of the major works in both the elitist and pluralist schools, see Haruhiko Fukui, "Studies in Policymaking: A Review of the Literature," in T. J. Pempel, ed., *Policymaking in Contemporary Japan* (Ithaca and London: Cornell University Press, 1977), pp. 22-60.

[4] For examples of some of the numerous references to the importance of dissenting factions within the LDP and their influence at particular points in postwar history, see Donald C. Hellman, *Japanese Foreign Policy and Domestic Politics* (Berkeley and Los Angeles: University of California Press, 1969) and George R. Packard III, *Protest in Tokyo: The Security Treaty Crisis in 1960* (Princeton: Princeton University Press, 1966). For examples of the influence of particular interest groups, see William E. Steslicke, *Doctors in Politics: The Political Life of the Japan Medical Association* (New York: Prager, 1973) and Daiichi Ito, "Keizai kanryō no kōdō yoshiki," [The Economic Bureaucrats' Pattern of Behavior], *Gendai Nihon no Seito to kanryō*, 92.

model applies to Japanese policy making at this level of analysis.[1]

A much different view of Japanese organizations and institutions—one that stresses both the achievements of an alleged consensus within or among individual units and the alleged utility of such a consensus in promoting economic growth—has sprung up and gained extraordinary popularity in the U.S. during the past three years. Ezra F. Vogel, a sociologist from Harvard University, introduced this genre with his book, *Japan as No.1: Lessons for America*.[2] Having once assumed without question that American society and institutions were generally superior to those of any other country, Vogel says he later concluded that "given its limited resources, Japan has dealt more successfully with more of the basic problems of post-industrial society than any other country." Then, in searching for why this might be so, he "became convinced that Japanese success had less to do with traditional character traits than with specific organizational structures, policy programs, and conscious planning." Carrying the argument a step further, Vogel suggests in a general sense that Americans would do well to adopt the Japanese tradition of systematically adopting technologies, organizational patterns, and even values from other countries, if doing so seems likely to promote greater competitiveness in a world in which American performance would otherwise continue to decline. In particular, Vogel suggests that the U.S. adopt a much more explicit industrial and trade policy, based on past Japanese models and formulated in large part by "a small core of permanent high-level bureaucrats."[3]

Two best-selling books by business school professors apply similar arguments to individual firms. William Ouchi of the Graduate School of Management at UCLA urges American businesses to change their internal social structure to satisfy simultaneously "the competitive needs for a new, more fully integrated form, and the needs of individual employees for the satisfaction of their individual self-interest." Ouchi's suggested method of doing this, dubbed "theory Z" in the title of the book, is more or less an adaptation of Japanese corporate organization, at least as he describes it.[4] Similarly, Richard Pascale of Stanford Business School and Anthony Athos of Harvard Business School argue that Japanese companies work well because of greater interdependence and harmony among their employees, and that American firms need much more of both to work comparably well. The way to achieve this, they argue, is not necessarily the adoption of Japanese management techniques, but simply a more efficient utilization of existing American strengths. In contrast to Ouchi, Pascale and Athos see Japanese business practices less as an example to follow than as a standard against which U.S. executives should measure their own company's performance. Like Ouchi, however, they appear to accept descriptions of the ideal of harmony as more or less equivalent to its realization.[5]

As noted above, studies that have directly sought to identify and measure the sources of Japan's economic development contribute greatly to an understanding of *how* this process worked without necessarily explaining *why* it came to work this way. Among the most extensive of the quantitative studies of Japanese growth is the work of two contributors to the landmark Brookings Institution study of Japan's postwar economy, Edward Denison and William Chung.[6]

---

[1] For an illuminating exception that deals with one aspect of industrial development policy, see Chalmers Johnson, *Japan's Public Policy Companies* (Washington, D.C. and Stanford CA: American Enterprise Institute for Public Policy Research and Hoover Institution on War, Revolution and Peace, 1978).

[2] Cambridge, MA: Harvard University Press, 1979.

[3] Ibid., pp. viii, ix, 232-233, and passim.

[4] William G. Ouchi, *Theory Z: How American Business Can Meet the Japanese Challenge* (Reading, MA: Addison-Wesley Publishing Company, 1981), p. 222 and passim. Ouchi's description of internal harmony in Japanese companies is hardly universally accepted. For a less enthusiastic view of corporate internal relations in Japan, see Rodney Clark, *The Japanese Company* (New Haven, CT: Yale University Press, 1979).

[5] Richard Tanner Pascale and Anthony G. Athos, *The Art of Japanese Management: Applications for American Executives* (New York: Simon and Schuster, 1981), passim. For a review of Ouchi, Pascale and Athos, and Clark, see Jules Cohn, "They Go to Bars After Work, Too," *The Nation*, Vol. 233, No. 1, August 8-15, 1981, pp. 117-119. Cohn favorably compares the more specialized Clark book to the best-selling Ouchi and Pascale and Athos books.

[6] See Edward F. Denison and William K. Chung, "Economic Growth and its Sources," in Patrick and Rosovsky, op. cit., and an expanded version by the same authors, *How Japan's Economy Grew So Fast* (Washington, D.C.: The Brookings Institution, 1976). See also, in the English-language literature, Kazushi Ohkawa and Henry Rosovsky, *Japanese Economic Growth: Trend Acceleration in the Twentieth Century* (Stanford, CA: Stanford University Press, 1973), which includes an extensive discussion of the prewar period. A Japanese-language source that also takes an historical approach to try to identify sources of growth, now translated into English, is Takafusa Nakamura, *The Postwar Japanese Economy: Its Development and Structure* (Tokyo: University of Tokyo Press, 1981).

For general works on the Japanese economy in Japanese-language sources see Saburo Ōkita, *Nihon keizai no shōrai* [The Future of the Japanese Economy] (Tokyo: Yūki shōbo, 1960); and *Keizai keikaku* [Economic Plan] (Tokyo: Shiseidō, 1962); Osamu Shimomura, *Nihon keizai nani o nasu bekika*? [The Japanese Economy: What Should It Do?] (Tokyo: Shiseidō, 1966); Hisao Kanamori, *Nihon keizai o dō miruka* [How to Look at the Japanese Economy] (Tokyo: Nihon keizai shimbun sha, 1967); Kamekichi Takahashi, *Nihon kindai keizai hattenshi* [A History of the Development of the Modern Japanese Economy], Vol. 1-3, (Tokyo: Tōyō keizai shimpō sha, 1973); Ryūtarō Komiya, *Gendai nihon keizai kenkyū* [Research on the Modern Japanese Economy] (Tokyo: Tōdai shuppan kai, 1975); Shigeto Tsuru, *Gendai nihon keizai* [The Modern Japanese Econ-

Their major findings are presented in Table II-8, and may be summarized as follows:

> How did Japan attain a postwar growth rate far above that experienced by any other advanced country? According to our results, the answer is not to be found in any single determinant of output. Rather, changes in almost all important determinants were highly favorable in comparison with other countries, and in none was the change particularly unfavorable.[1]

In other words, Japan's spectacularly high postwar growth stemmed not from some single source, but from a combination of major determinants, all working in the same positive direction. Moreover, Japan's growth was comparable to that of other developed countries in terms of the relative importance of the various sources of growth that Denison and Chung were able to measure, using a standard growth accounting framework. But since this framework seeks specifically to quantify those aspects of economic analysis that can reasonably be quantified and treats other factors as a residual, it leaves open many questions about the non-quantifiable factors, which may in fact be more important in understanding "fundamental" causes of Japanese economic growth than the quantifiable factors.

For example, in their discussion of capital stock, Denison and Chung argue that the increase in Japan's capital stock can be attributed to three major developments: a rapid increase in national output, an increase in the proportion of income saved, and declines in the price of capital goods relative to the price of other components of GNP. Yet should the increase in capital stock be in turn attributed, particularly because of the third of these three developments, to government policies? After all, through the selective application of its then-detailed system of trade and foreign exchange controls, the Japanese government was able to use international competition to hold down the price of capital goods, while providing a protected, high-priced domestic market for consumer goods produced primarily at home. Admittedly, such questions cannot be dealt with easily in a growth accounting framework.

Some scholars have tried to take qualitative factors into account, though, again, without definitive results. Some attribute a great part of Japan's economic success to a highly competent bureaucracy and a generally interventionist government.[2] For example, Cyril Black of Princeton University and his colleagues, in a comparative study of Japan and Russia, argue:

> . . . talented bureaucrats at the Ministry of International Trade and Industry have been the chief architects of industrial policy, and they have consistently emphasized working through the market . . . Japanese industrial policy gave the country the advantages of capitalism and socialism at the same time . . . Capitalism's main advantage is efficiency, which was assured by allowing competition and market forces to play their role; simultaneously, close and harmonious government and business connections, together with rational and integrated policies, permitted considerable political control over the growth process . . . The capitalist-socialist approach has resulted in relatively logical, clear, and consistent industrial policies—and is one of the best examples of 'catch-up economics.[3]

Similarly, Andrea Boltho of the OECD, argues that "Japan's government exercized a much greater degree of intervention and protection than did any of its Western European counterparts; and this brings Japan closer to the experience of another set of countries—the centrally planned economies."[4] Tak-

---

omy] (Tokyo: Asahi shimbun sha, 1977); Toshio Shishido, *Nihon keizai no seichōryoku* [The Growth Potential of the Japanese Economy] (Tokyo: Diamond sha, 1977); Masaru Yoshitomi, *Gendai nihon keizai ron* [A Theory of the Modern Japanese Economy] (Tokyo: Tōyō keizai shimpō sha, 1978); Tetsurō Uchino, *Sengo nihon keizai shi* [A History of the Postwar Japanese Economy] (Tokyo: Kōdan sha, 1978); and Yasushi Kosai, *Kōdō seichō no jidai* [The Era of High Growth] (Tokyo: Nihon hyōron sha, 1981).

[1] Denison and Chung, *How Japan's Economy Grew So Fast*, op. cit., p. 46.

[2] The more extreme Western subscribers to an interventionist argument contend that Japan is run by a seamless web of bureaucrats, politicians, and businessmen, i.e., a "Japan, Incorporated," model. See James C. Abegglen, ed., *Business Strategies for Japan* (Tokyo: Sophia University, 1970), and Eugene J. Kaplan, *Japan: The Government-Business Relationship* (Washington, D.C.: USGPO, 1972). Though both books presented the phrase "Japan, Inc." as a reasonable way to describe the Japanese economy at that time (and particularly business-government relations), both were also careful to use the term with qualification. The popularity that the phrase subsequently acquired in the U.S., particularly in a pejorative sense that suggested Japan was doing well because its pattern of business-government relations gave it an unfair advantage over Western countries, cannot be attributed to its use in these books themselves. Indeed, Commerce Secretary Maurice Stans, in a foreword to Kaplan's study (Kaplan was director of the Far East Division, Bureau of International Commerce, U.S. Department of Commerce, at the time), specifically noted that Japanese generally objected to the term "Japan, Incorporated" as "one-sided and inaccurate."

[3] Cyril E. Black, et al., *Modernization of Japan and Russia* (New York: Free Press, 1975), pp. 287-288, as cited in Johnson, *Japan's Public Policy Companies*, op. cit., p. 17.

[4] Andrea Boltho, *Japan: An Economic Survey, 1953-1973* (London: Oxford University Press, 1975), pp. 188, as cited in Johnson, ibid., p. 19.

TABLE II-8
SOURCES OF GROWTH: JAPAN COMPARED TO AN AVERAGE OF TEN OTHER ADVANCED INDUSTRIAL COUNTRIES

Output measure or source of growth	Japan						Average (simple) of ten countries[1]	
	Percentage points			Percent of standardized growth rate			Percentage points	Percent of standardized growth rate
	1953-71	1953-61	1961-71	1953-71	1953-61	1961-71	Period varies	
National income (U.S. deflation procedures)	8.77	8.13	9.29	—	—	—	—	—
Irregular factors	−0.04	0.20	−0.27	—	—	—	—	—
Standardized national income	8.81	7.93	9.56	100.0	100.0	100.0	4.21	100.0
More capital	2.10	1.62	2.57	23.8	20.4	26.9	0.86	20.4
Advances in knowledge and miscellaneous determinants	1.97	1.42	2.43	22.4	17.9	25.4	0.96	22.8
Economies of scale	1.94	1.90	1.96	22.0	24.0	20.5	0.78	18.5
More work done, with account taken of workers' characteristics except education	1.51	1.58	1.43	17.1	19.9	15.0	0.60	14.3
Less labor misallocated to agriculture and nonagricultural self-employment	0.94	1.08	0.81	10.7	13.6	8.5	0.63	15.0
Increased education per worker	0.34	0.33	0.35	3.9	4.2	3.7	0.29	6.9
Reduced international trade barriers	0.01	0.00	0.01	0.1	0.0	0.1	0.09	2.1

[1]United States, Canada, Belgium, Denmark, France, West Germany, Italy, Netherlands, Norway and United Kingdom. The period for which this calculation was made differs among countries, but covers roughly the 1950s and early 1960s; see source for detail.

SOURCE: Edward F. Denison and William K. Chung, *How Japan's Economy Grew so Fast: The Sources of Postwar Expansion* (Washington, D.C.: The Brookings Institution, 1976), pp. 42-43 and 48.

afumi Isomura of Osaka University, who, unlike most Japanese writing on the country's economic development, looks specifically at the role of the government and the market in this process, also argues that Japan's economic success can be credited in large part to an active government role.[1]

Chalmers Johnson, in an outstanding study on the history of Japanese industrial policy, emphasizes the role of government in economic development particularly for countries such as Japan, which were trying to catch up to others for basically political reasons, i.e., they did not want to be poorer or less powerful than countries that had already industrialized. Johnson is amusingly critical of scholars whom he labels "projectionists," meaning they "project onto the Japanese case Western—chiefly Anglo-American—concepts, problems, and norms of economic behavior," and another group he labels the "anything-but-politics" approach, meaning anything from an emphasis on "national character-basic values-consensus" to "no-miracle-occurred" or an alleged "free-ride." In Johnson's view, Japan's modern economic history can be explained by the role of the "developmental state," an institution he traces directly to a German school of thought "sometimes labeled 'economic nationalism,' *Handelspolitik*, or neomercantilism." He attributes the failure of other scholars to emphasize this tradition mainly to its not being part of "the mainstream of economic thought in the English-speaking countries," leading in turn to Japan's "always being studied as a 'variant' of something other than what it is." Simply put, Johnson argues that "in states that were late to industrialize, the state itself led the industrialization drive, that is, it took on *developmental* functions." Thus, he distinguishes Japan from countries like the U.S., where the state performs regulatory functions. Moreover,

> . . . in the developmental state economic interests are explicitly subordinated to political objectives. The very idea of the developmental state originated in the situational nationalism of the late industrializers, and the goals of the developmental state were invariably derived from comparisons with external reference economies.[2]

At the opposite end of the spectrum are most of the scholars who contributed to the Brookings study referred to above.[3] The editors of the volume and co-authors of the introductory and concluding chapters, Hugh Patrick of Yale University and Henry Rosovsky of Harvard University, clearly give the government a subordinate role, relative to the normal workings of a market economy—as such economies have been understood in the U.S. However, they do not address the question of why various specific sources of growth might have been brought into play by the market. Rather, to the degree that they discuss how this process worked, they do so as part of a discussion of the role of government policy *versus* the role of the market. "The main impetus to growth," they write:

> has come from the private sector, both in business initiative and in private demand. The government's role has been supportive, mainly by providing an environment well suited to economic growth . . .
>
> Government intervention generally has tended (and intended) to accelerate trends already put in motion by private market forces—the development of infant industries, the structural adjustment of declining industries, and the like . . .
>
> thus, while government policy may have been important, its impact on economic performance was not 'uniquely Japanese.'[4]

Philip Tresize of Brookings, in a separate chapter that discusses business-government relations in greater detail, takes a similar position. "Policies exposed by MITI," he writes, "did not in any case prevent the economy from going forward at a rapid pace. It is a good deal less clear that these policies provided the consistent and positive—to say nothing of overwhelming—contribution to economic growth that has been attributed to them."[5] Yutaka Kosai of the Tokyo Institute of Technology also emphasizes the role of the market as, on balance, more important than the role of government, noting that the latter had a particularly strong influence on Japanese economic development in earlier postwar years and that its influence has declined in importance over time.[6]

---

[1] Takafumi Isomura, *Nihongata shigyō keizai* [Japanese-Style Market Economy] (Tokyo: Nihon hyōron sha, 1982), passim.

[2] Chalmers Johnson, *MITI and the Japanese Miracle* (Stanford CA: Stanford University Press, 1982); pp. 7, 17, 19, 24, and Chapter 1 passim. The emphasis in the direct quotations is from the original. Though we (and doubtless many other English-speaking readers) have found Johnson's exhaustive, eight-year study extremely useful, we should note that his categorization of other scholars does not always seem accurate. For example, he classifies Vogel as a "projectionist," when by Johnson's own criteria he seems to us to belong more in a category that Johnson describes as emphasizing the influence of unusual Japanese institutions, or even the category in which Johnson places himself, namely that of emphasizing the role of a developmental state.

[3] Patrick and Rosovsky, eds., op. cit.

[4] Hugh Patrick and Henry Rosovksy, "Japan's Economic Performance: An Overview," in Patrick and Rosovsky, op. cit., p. 20, 47, and 48.

[5] Philip H. Tresize, with the collaboration of Yukio Suzuki, "Politics, Government, and Economic Growth in Japan," in Patrick and Rosovsky, op. cit., p. 793.

[6] Kosai, op. cit., especially Chapter IX.

Yet another genre, in both English and Japanese, focuses on Japanese economic development without entering the debate on the relative importance of the government versus the market. A number of scholars have simply focused on specific aspects of industrial policy.[1] These studies tend to be descriptive or narrowly focused on selected aspects of growth. With certain exceptions, the works in this latter group do not attempt to evaluate quantitatively the policy effects of various policy instruments.[2]

In general, and perhaps naturally so, scholarly writings on Japanese industrial development policy have been historical and descriptive, without attempting to draw implications for current policy-related issues. Moreover, in our view at least, the key analytical issue of the role of government, relative to the market, remains unanswered. Chalmers Johnson, perhaps the most definite of the scholars who emphasize the role of government as a decisive cause of Japanese economic development, asserts this as a finding without explicitly testing it against alternative hypotheses. Rather, he deals with alternative explanations simply by listing various reasons why he finds them inadequate. In this, Johnson is often bitingly accurate as in the following description of the "no-miracle-occurred" group:

> [Advocates of this approach come from the realm of professional economic analyses of Japanese growth, and therefore in their own terms are generally impeccable, but they also regularly present extended conclusions that incorporate related matters that their authors have not studied but desperately want to exclude from their equations.][3]

Yet, much the same could be said of Johnson's own view: he settles on the developmental state as a "rosetta stone" that explains Japanese economic growth without systematically comparing Japan's pattern of development with other already developed countries that have had a similarly activist government—or with those, like the U.S., that seemingly developed without benefit of a comparably activist government, but that surely benefited from some government intervention, e.g., land-grant colleges, agricultural extension services, etc.

On the other side of the argument, most of the Brookings scholars who address this issue are correspondingly assertive in their notion that the market has been "the main impetus to growth." Having no methodology to measure such qualitative factors as the role of government, but a well-defined methodology to measure various quantitative factors that fall easily into the standard framework of a market economy, the Brookings scholars tend to generalize from these quantitative measurements to a theory of causation they also do not explicitly outline. Two of the Brookings scholars, Lawrence Krause and Sueo Sekiguchi, recognize this point, and prudently record the following caveat early in their chapter on "Japan and the World Economy":

> The many faceted participation of the government in the operations of the Japanese economy presents a difficult analytical problem. In a sense, the economic model is overdetermined: almost every economic event could be attributed to one or more government policies, yet other policies could be cited that seem to have an opposite thrust. More important, there would seem to be little left to be explained by private initiative and changes in exogenous economic conditions, but even casual observation confirms that a vigorous private economy does exist and that it does respond to the usual economic forces . . . How can the effects of government actions be evaluated separately from those of the private sector? This analytical problem means that in any investigation, much must be left to the judgment of an observer.[4]

In our view—and this much may seem obvious—both the government and the market contributed to Japanese economic development; thus, both Johnson

---

[1]See, for example, Takahide Nakamura, "Nihon ni okeru seisaku no tokushoku to hyōka" [An Evaluation of the Peculiarities of Japanese Policy], *Tōyō Keizai*, May 1974, pp. 58-64; Yūya Ueno, "Waga kuni sangyō seisaku no hassō to hyōka" [The Ideas Behind and an Evaluation of Japanese Industrial Policy], *Kikan Gendai Keizai*, Vol. 20, December 1975, pp. 6-49; Kazunori Echigo, "Tokutei fukyō sangyō antei ringi sochi hō nō kihonteki seisaku," [The Basic Policy of the Depressed Industries Law], *Kigyō Hō Kenkyū*, May 1978, pp. 2-6; Hiroshi Okumura, "Tokutei fukyō sangyō antei ringi sochi hō no ginkō shōsha kyūsaihōteki seisaku" [The Depressed Industries Law can be Considered a Relief Act for Banks and Trading Companies], *Kigyō hō Kenkyū*, May 1978, pp. 22-26; and Mark J. Ramsmeyer, "Comment on Letting Obsolete Firms Die: Trade Adjustment Assistance in the United States and Japan," *Harvard International Law Journal*, Vol. 22, No. 3, Fall 1981, pp. 595-619.

[2]Two notable exceptions are: Shōichi Kinoshita, "Sengo nihon no sozei seisaku to setsubi tōshi kōdō," [Policies and Capital Investment Behaviour in the Postwar Period], *Kikan Gendai Keizai*, June 1972, in which Kinoshita tries to evaluate quantitatively the relationship between tax polices and capital investment in the 1955-65 period; and Fumio Kodama, "A Framework of Retrospective Analysis of Industrial Policy," Institute for Policy Science Research Report No. 78-2, Saitama University, Graduate School of Policy Science, July 1978, in which Kodama tries to calculate the effects of government policy on the development of the Japanese automobile industry.

[3]Johnson, *MITI and the Japanese Miracle*, op. cit., p. 9.

[4]Lawrence Krause and Sueo Sekiguchi, "Japan and the World Economy," in Patrick and Rosovsky, op. cit., pp. 385-386.

and the Brookings scholars are correct, up to a point. However, neither has shown exactly what the role of the government or the market has been, to the exclusion of the other. Neither has found the "rosetta stone."

In any case, the issue for policy makers in the U.S. and other countries is less one of whether Japanese politics is governed by consensus or conflict in a static sense, or whether the government has or has not played a major role in industrial development policy at any one moment (including the current moment), and more one of trying to understand how decision-making in Japan is changing over time and in what direction. In principle, at least, if such changes in Japanese policy-making were better understood, policy makers in the U.S. could deal with contemporary Japan more effectively, and with less risk that economic friction would escalate into political disputes.

C. Prospects for Japanese Economic Development

Whatever the fundamental causes of Japan's economic development, the record of development to date suggests an important implication for policy makers in the U.S. and elsewhere who have to deal with Japan's success as a fact of life: on momentum alone, if not also for more specific reasons, Japan's growth rate is likely to remain higher than those of most other advanced industrial countries for some years hence. At least a continued emphasis on economic growth, aimed mainly at further improvements in living standards as well as a continuing modernization of the industrial structure, seems to us more likely than a significant turning away from economic goals in favor of previously sublimated political or other goals. In a word, having come to think they have now caught up to the previously developed, predominately Western countries in terms of a flow of income, Japanese are now likely to want to catch up in terms of a stock of wealth as well.[1] To be sure, simply seeking a higher rate of economic growth than other advanced industrial countries is not the same as achieving it. Yet as discussed in detail below, the record to date suggests to us that the Japanese economy is at least as likely as any other to be able to cope successfully with the goals and challenges it will face in the 1980s. Moreover, as discussed in detail in Chapter III, to the degree that an industrial development policy can contribute to an economy's capacity for successful structural adjustment, the ways in which Japanese industrial development policies have changed over time also suggest that the Japanese economy is likely to cope at least as successfully as other advanced industrial economies with the problems of the 1980s. In other words, for various reasons Japan is likely to achieve higher growth rates, on average, than other advanced industrial countries no matter what the level of world growth rates.

Japan's ability to maintain a better-than-average performance would obviously be more easily achieved if the world economy were to emerge from the stagflation—and, more recently, the stagnation—of the past decade. For this reason, we next discuss the world economic outlook, and in that context, prospects for the Japanese economy itself.

1. The Global Outlook

At the end of the 1960s, the future of the world economy was seen from the perspective of two decades of rapid economic progress and political sta-

[1]This distinction between catching up to the West in terms of a flow of income and catching up in terms of a stock of wealth comes from the most recently published "visions" in the MITI-sponsored series of such reports, going back more than a decade. See *Hachijū nendai no tsūsan seisaku bijon* [Vision of Trade and Industry Policy for the 1980s], Sangyō kōzō shingikai [Industrial Structure Council], (Tokyo: Ministry of International Trade and Industry, April 1980), pp. 25-27.

The possibility that Japan's rate of economic growth would remain higher than those of other countries for a longer period of time than was then generally expected, together with the specific suggestion that Japan might pass the U.S. in per capita income by the year 2000, were major points in Herman Kahn, *The Emerging Japanese Superstate: Challenge and Response* (Englewood Cliffs, NJ: Prentice-Hall, 1970).

In a crude, exchange-rate comparison—depending, of course, on what rate of exchange is used—Japan is already in the process of passing the U.S. in per capita income (or would be if the current value of the yen were not so low). The gap is much greater if income in the two societies is compared on the basis of the actual quantities of goods and services that can be purchased for an amount of money that is in turn measured on a common basis. Such a measurement, known in economics as a calculation of purchasing power equivalents, requires a large sample of goods and services to be valid, and is thus not easily developed. The currently most well-known of these measurements, undertaken by Irving Kravis, Alan Heston, and Robert Summers, shows in its most recent results a Japanese per capita income of roughly 70 percent of the U.S. figure in 1979, as against 62 percent in 1970 and 32 percent in 1960. (Refer back to Table II-7.) Even by this more rigorous test, Japan is gradually catching up to the U.S. in per capita income; thus, the basic idea of its eventually passing the U.S. is inferable from existing trends.

For two qualitative projections of why and how Japan might continue to achieve higher growth rates than other advanced industrial countries, see Norman Macrae, "Must Japan Slow?," *The Economist*, February 23, 1980, pp. Survey 1-42, and Thomas Pepper, "The Continuing Japanese Challenge," in Yusaku Furuhashi, ed., *Japan and the United States in a Turbulent World: Myths and Reality* (West Babylon, NY: KCG Productions, Inc., 1981).

bility. Mankind's problems were not solved, but they were viewed as soluble. The experiences of the 1970s dramatically altered this vision. As noted earlier in this chapter, economic growth rates declined and became more unstable. Both unemployment and inflation rose. Social and political tensions increased. Earlier visions of a semi-utopian, welfare society crumbled. Largely in the wake of the sudden end of such a long period of extraordinarily high growth, the consensus outlook for the rest of the century became extraordinarily pessimistic. Evidence to the contrary was—and continues to be—ignored. The recent *Global 2000 Report to the President* epitomizes the continuing pessimism of many intellectuals and, as a result, the continuing, if also latent and not necessarily conclusive expectations of many average citizens. The report argued:

> If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead. . . . barring revolutionary changes in technology, life for most people on earth will be more precarious in 2000 than it is now.[1]

Indeed the 1970s were difficult years, and the 1980s offer risks and challenges of great magnitude. Yet such extreme pessimism seems to us unjustified. Rather, various positive trends seem to us to exist and to be growing stronger, although these trends have admittedly sometimes been masked by the legacies of the economic and political problems of the 1970s, including in particular the costs rather than the opportunities inherent in the profound structural changes taking place in the world economy.

We think the following major trends, ranked roughly in order of their relative importance, will characterize the world economy over the ensuing 20 years:

1. A seemingly permanent slowing in the long-term growth rate of productivity and output in the advanced industrial countries, as compared to the trend evident in the 1950s and 1960s;
2. A dramatic increase in the importance of middle-income countries as a source of world-wide growth;
3. A continuation of historically high, but probably declining inflation rates;
4. A persistence of current or possibly falling real prices of energy;
5. A continuation of a higher rate of growth for international trade than for total world output, though by a lesser margin than during the 1950s and 1960s;
6. Continued shifts in the composition of employment, output, and trade from manufacturing to services;
7. An increasingly multipolar world, politically and militarily, as well as economically;
8. A social and political context in which there will be continued demands on governments to compensate for or otherwise alter the results of market-based economic activity.

Within the context of these eight trends, two surprise-free scenarios (meaning that neither would be surprising if they occurred) seem possible enough to merit description: continued stagflation and economic resurgence. A major collapse, an economic boom, or other variations remain possible, but seem to us to have considerably lower probability.

a. Continued Stagflation

As recently as a decade ago, most economists would have argued that the very phenomenon of stagflation—i.e., a persistent combination of excess capacity and high inflation—was impossible. Yet it undeniably occurred, and despite signs of underlying economic strengths and declining inflation rates, the advanced industrial countries have not as yet been able to eradicate the lingering effects of the events of the past nine years. For this reason, another 8, 10, or even 15 years of stagflation remains all-too-plausible.

A scenario of continued stagflation would occur if, over an extended period, the normal adjustments expected in a market economy took place only slowly or not at all. In theory, such postponement or avoidance of adjustment would eventually produce an economic collapse. In today's world, however, sources of economic growth are much more varied than, say, 50 years ago. For example, the continued drive of middle-income countries raises the floor level of world growth rates, without, however, being of sufficient magnitude to trigger a boom in the advanced industrial countries. Under these conditions, the world economy would continue to register low growth rates (comparable to those experienced during the 1970s), excess industrial capacity, and high inflation. The constellation of forces contributing to such a scenario might include high and rising oil prices (in real, i.e., inflation-adjusted, terms); continued high and, in some cases, accelerating inflation rates, leading in turn to high and variable interest rates; tight, but probably also "stop-go," monetary and fiscal policies; increasing protectionism (though still short of the degree of protectionism seen in the 1930s); and a tightening of lending terms for the developing countries. Depending on the details of the way the chain of events worked itself out, average inflation would slowly decline and real growth slowly improve as adjustment proceeded through the late 1980s.

Still, under a scenario of continued stagflation, the world economy would enter the 1990s with nearly two decades of policy mismanagement and

[1]Council on Environmental Quality and Department of State, *The Global 2000 Report to the President*, Vol. 1 (Washington, DC: USGPO, 1980), p. 1.

slow economic progress behind it. Higher levels of protection and other barriers to growth and change would have come into being, in which case the subsequent economic potential of all countries would in turn be lower.

b. Economic Resurgence

A scenario of economic resurgence would occur if, over a medium term period of, say, 10 to 15 years, there were continued prosperity relative to the 1970s, even if this period were to include two or three short-term recessions. The potential for a resurgence can be seen in the vigorous investment that actually occurred during the two most recent recessions in the U.S.; in the long period of capacity underutilization in all advanced industrial countries, which forced through at least some degree of rationalization; in the growing backlog of worldwide expansion opportunities; in the commercialization of a vast array of research and development projects in energy, environmental protection, and health- and safety-related industries; in the adaptation of national and international financial systems to a more uncertain and inflation-prone environment; and in the emergence of important new growth sectors.

Naturally enough, realizing this potential requires both a conducive policy environment and, perhaps even more importantly, an entrepreneurial willingness to take advantage of emerging opportunities. Both the U.S.and Japanese governments are currently pursuing policies that emphasize long-term economic growth, and both are pursuing these policies in the face of political opposition that favors economic stimulation for reasons of short-term gain, even at the risk of re-igniting rapid inflation. Various European governments, most notably the Socialist government in France, are less committed to restraint than the U.S. and Japanese governments, but even in France the actual increase in inflation in the short-term, manifested in a declining exchange rate, has led to a policy of greater restraint, compared to the recent past. In general—though details vary greatly among countries—the notion of short-term demand stimulation is out of favor; current policy commitments are, on balance, tilted toward short-term restraint, in hopes this will lead to a continuing decline in average interest rates and in turn a continuing increase in investment and real growth rates. That the private sector will respond vigorously, if opportunities for real profits (i.e., profit not eroded by inflation) are provided, is evident if one looks at the truly extraordinary performance of those sectors that operate completely outside the government regulatory framework—i.e., the so-called underground economy; Italy is perhaps the best example of this phenomenon. Clearly, the less the burden on private economic activity, whether in the form of heavy taxation and government expenditures or heavy government regulation in a qualitative sense, the stronger the incentive to invest.

A necessary, though not sufficient, condition for a scenario of economic resurgence in the world economy is a vigorous U.S. recovery from the current recession, which recovery would then blend into an extended period of high growth. This report is not the place to go into detail about U.S. prospects, but a strong case can be made for a medium-term outlook of economic growth averaging about 4 percent annually from 1982 to 1988; such a growth rate would reflect both cyclical and structural improvements in the U.S. economy.[1]

A buoyant U.S. recovery during the mid-1980s would stimulate higher growth in the rest of the world, particularly through the demand for imports and through productivity growth induced by declines in inflation and interest rates. If this more rapid growth in the U.S. were to encourage other advanced industrial countries to halt the otherwise steady trend toward further protectionism and further government interference in the workings of the market place, an even more optimistic global growth scenario than economic resurgence would have greater probability.

Until that happens, we assume that a scenario of economic resurgence should be taken as the base case, i.e., as the least surprising of various surprise-free alternatives. Prospects for the medium-term success of current market-oriented policies in the U.S. are good. The combination of improved growth prospects and pragmatic, growth-oriented policies will probably be strong enough to introduce a virtuous cycle in which greater private sector confidence would stimulate higher investment, higher growth, greater price restraint (relative to the previous decade), and further improvements in policy, which in turn would reinforce still greater private sector confidence.

Admittedly, a U.S. recovery has been delayed, beyond the expectations of most forecasters, by the persistence of high interest rates, depressed corporate liquidity, continued excess capacity, and, perhaps most importantly, continued expectations of inflation and of policy uncertainties. Still, the most likely near-term scenario is a continued fall in short-term interest rates (though a much less sharp fall in long-

[1]For recent Hudson Institute views on prospects for the U.S. economy, from which this estimate is drawn, see Herman Kahn, *The Coming Boom: Economic, Political, and Social* (New York: Simon and Schuster, 1982); Irving Leveson, *The Economic Future of the United States* (Boulder, CO: Westview Press, forthcoming); idem *First Light of Economic Resurgence*, HSG-100-P, (Croton-on-Hudson, NY: Hudson Strategy Group, Inc., August 1982); and Ernest Schneider, ed., *Revitalization of the United States*, HI-3450-P, (Croton-on-Hudson, NY: Hudson Institute, December 1981). The 4 percent forecast cited above should be compared to a recent consensus forecast of an average annual growth rate of 3.2 percent for this same period. See *Blue Chip Economic Indicators* (May 10, 1982).

term rates), leading to a cyclical recovery that, when combined with favorable structural trends, blends imperceptibly into a mid-1980s economic boom, leading in turn to a period of economic resurgence for the world economy as a whole. Less likely, but still possible in the event of major policy mistakes or major, unexpected shocks to the system, is a cyclical recovery that causes such severe upward pressures on inflation, interest rates, and oil prices that these increases choke off the recovery and in doing so bring about a return to stagflation.

2. The Japanese Outlook

Among the main beneficiaries of a U.S. recovery, particularly if such a recovery were strong enough to lead to a period of economic resurgence worldwide, would be Japan. Even in a scenario of continued stagflation, U.S. economic performance is likely to improve during the next five years, compared to the recent past. Thus, the Japanese economy is likely to receive at least some stimulus from the U.S. economy during the next five years, under almost any circumstances.[1]

Domestic demand in Japan has been flat for some time, and is likely to remain weaker than experienced before 1973. At the same time, new sources of growth, most notably in the development of public and private infrastructure aimed at deepening the country's wealth, and a policy commitment to prevent growth rates from falling "too low" will probably keep average growth rates within a range of 4-6 percent a year for the rest of the decade. This would be higher than in the U.S. and other advanced industrial countries and higher than Japan's own performance for the past few years, but well below the record that Japan achieved from the early 1950s to the early 1970s. Under a scenario of economic resurgence, Japan would be likely to grow toward the top of this range; under continued stagflation, toward the bottom of the range.

Previous growth projections issued by the government and various outside organizations for the decade of the 1980s estimated an average annual rate of about 5 percent. This is consistent with the 4-6 percent range that we project. However, the past two years have been ones of exceptionally slow growth; actual growth in 1981 was 3 percent, the lowest rate in five years, and the most recent projection by the OECD is for only 2 percent in calendar 1982. This poorer-than-expected performance has led to criticism of various "optimistic" medium-term projections and to a general move to scale down many growth forecasts.[2] Arguments for a scaling down of Japanese growth prospects are based on several factors in the current economic environment, e.g., (1) political barriers to rapid export growth, (2) limited scope for an expansionary fiscal policy, (3) similarly limited scope for flexibility in monetary policy, (4) a widespread need for disinvestment in declining industries, and (5) perhaps most importantly, a possible "savings trap," meaning a deflationary situation in which planned savings will exceed investment demand, even taking into account the large borrowing needs of the government. Indeed, there is something to be said for each of these factors.

At various times in recent years—notably in 1977 and again in 1981— exports accounted for an overwhelming share of Japanese demand growth. Such export surges contributed, in turn, to increased friction between Japan and her major trading partners. As a result, the potential for continued rapid export growth during the next several years is limited by a political constraint against further trade friction, particularly with regard to such previously important export-oriented industries as automobiles and steel, where the effects on unemployment in other countries have already been high. This political constraint against renewed (i.e., increased) export growth would limit Japanese economic growth even in a scenario of economic resurgence, but it could become particularly limiting in a scenario of continued stagflation. In the latter case, protectionism is likely to increase, both as a cause and as a consequence of stagflationary conditions.

Following a precipitous increase in government budget deficits in the 1970s, Japan has little scope for stimulative, Keynesian-style fiscal policies. An increasing number of business, bureaucratic, and political voices have been raised in recent months in favor of increased stimulation, but even if some steps are taken—such as passage of a supplementary budget, a frequently used device in the past—the scale of such steps will in any case be constrained

[1] The effects of this stimulus on bilateral economic relations, for both the short- and medium-terms, are discussed in Section D below.

[2] In July, for example, Prime Minister Suzuki was reported as having asked the Economic Council, a cabinet-level advisory group, to prepare a new five-year economic plan (covering FY83-FY87) for submission by April 1983. In a previous report on long-term economic prospects, the Council predicted the Japanese economy would be able to attain an average annual growth rate of 4 percent (in real terms) through the end of the century. The new plan is reportedly likely to set a growth target of 4 percent a year for the ensuing five years, in contrast to the 5.1 percent figure in the current seven-year plan (covering FY79-FY85). By implication, both the medium- and long-term forecasts are being scaled down. See "Suzuki Wants 5-Year Plan with Lower Growth Rate," *The Japan Economic Journal*, July 20, 1982, p. 4.

by the already large size of the deficit.[1] At the same time, with domestic demand already weak, there is little scope in the short-term for tax increases that would reduce the government's need to finance its deficits in the domestic capital markets. Although Prime Minister Suzuki has made a special point of trying to reduce "unnecessary" government spending through administrative rationalization, this goal faces the usual political resistance from entrenched special interests.

Japan's monetary policy faces similar constraints. Since World War II, monetary policy has served as the most important instrument for the general control of macroeconomic conditions. Through the late 1960s, when the main goal of Japanese economic policy was unequivocally one of promoting high growth, the principal means used to achieve this goal was a system of artificially low interest rates. Demand for funds naturally outpaced supply, but credit was rationed and borrowing was approved in ways that were biased toward private capital investment and away from consumer spending (including housing) or social infrastructure. Over the course of a business cycle, this policy was maintained except when balance of payments constraints forced the aggregate level of credit to be tightened. The tightening process itself was also biased in favor of private capital investment, particularly capital-intensive manufacturing industries. All of this was possible for a variety of reasons, including the insulation of Japanese capital markets from international forces and the segmentation of these markets within Japan (i.e., only limited financial flows from one subsector of the capital market to another). As discussed in greater detail in Chapter V, once the Japanese economy became increasingly international—particularly in the 1970s, as balance of payments surpluses enabled Japanese companies to reduce their dependence on the banking system as a source of funds—the traditional postwar system of low interest rates and credit rationing began to unravel. Moreover, the traditional macroeconomic goal of restraining the economy for balance of payments reasons was no longer important. Rather, it became necessary to follow patterns that prevail in other advanced industrial countries, and to use monetary policy to control domestic inflation or, alternatively, to stimulate domestic demand.

Legacies of the traditional postwar system remain, however. While international forces have greatly reduced the insulation of Japanese capital markets, the formal structure of these markets remains highly regulated, segmented, and therefore inflexible, relative to the degree of internationalization that has already occurred. For example, when unregulated U.S. interest rates rose during the past two years to levels roughly double those in Japan's regulated market, Japan experienced a substantial outflow of short-term capital, which in turn helped to weaken the value of the yen beyond all expectations. With domestic demand weak, Japanese monetary authorities can ill afford to raise interest rates, but in the face of a continuing disparity between Japan's still-regulated (and still artificially low) domestic interest rates and the much higher rates prevailing abroad, the authorities can ill afford to lower Japanese rates either. Thus, monetary policy in Japan is for the moment boxed in. Indeed, both fiscal and monetary policy are boxed in, and somewhat like the U.S., if for different reasons, Japan has little choice, in terms of macroeconomic policy, but to wait out a longer-than-politically-desirable period of squeezing previous excesses out of the system.

As for declining industries, which are discussed in greater detail in Chapter VII, a number of them—including petrochemicals, aluminum, and a variety of other nonferrous metals—face significant pressures to retrench, rationalize, or phase out altogether. Any such restructuring will obviously restrain economic growth. However, the adjustment process is probably proceeding more rapidly in Japan than in any other advanced industrial country. As we note in Chapter VII—indeed, it is a major point in the discussion of industrial policy with regard to declining industries—Japan is likely to face more problems in this area in the future than in the past, partly because its economic development is now reaching a stage where previously developed basic manufacturing industries are becoming uncompetitive, and partly because political pressures to keep such industries afloat through subsidization are only now making themselves felt, as Japan's drive for high economic growth eases in the wake of the affluence achieved to date. Still, in absolute terms, Japan's ability to restructure declining industries has been, and seems likely to remain, greater than other advanced industrial countries. Typically, resources are moved relatively rapidly from the declining sector to more productive activities, and those parts of a declining sector that are retained are the more productive plants or firms in the industry.

To be sure, if the Japanese economy were to continue to expand at its current relatively sluggish rate, the adjustment process for declining industries

[1] For summaries of the recent discussions, see "Slowing Down Ruins the Budget," *The Economist*, August 14, 1982, p. 56, and John Marcom, Jr., "Japan is Seen Doing Well, Though Not Well Enough," *The Asian Wall Street Journal*, August 27, 1982, pp. 1, 11. Advocates of increased stimulation often argue that Japan's high savings rate means that its budget deficits are much less inflationary than those in other countries, and they see higher growth as the only way, short of supposedly infeasible (and deflationary) tax increases, of ever bringing the deficit down anyway. By contrast, advocates of restraint argue that the deficit must be pared before increased stimulation can even be considered, lest future deficits become so large that, even with Japan's high savings rate, they are inflationary in themselves or they crowd out private investment.

would be particularly effective in contributing to even slower growth. By the same token, if the U.S. economy proceeds to recover and to have the stimulative effects on the Japanese economy mentioned above, the adjustment burden would be eased considerably, and the dragging effects of this process would be greatly ameliorated. In a buoyant economic environment, sufficient cash flow would accrue to enable an industry undergoing structural change to compensate for the adjustments it must make. In time, such adjustments become a positive factor promoting economic growth. In other words, the process of structural adjustment has something of a U-shaped effect on economic growth: the initial adjustments are costly; they divert resources away from productive activities; in the short-term, they are deflationary; as this initial phase proceeds and the newly-released factors of production are re-employed in areas of higher productivity, the process becomes increasingly positive; new products are produced with high growth potential; new investment is generated, etc. Alternatively, the failure to proceed with structural adjustment raises the eventual cost of the whole process. Employment and production that is saved in the short-term is made much less productive in the medium- and long-term.

Perhaps the strongest case being made for a scaling down of projected Japanese growth rates is the so-called "savings trap" issue. The simplest version of this argument goes as follows: when planned savings exceed the actual demand for investment funds (both private investment spending and government borrowing), more funds are leaking out of the income flow than are being put back in; as a result, aggregate demand and aggregate income both fall. Given Japan's continuing high savings rates, data during the past two years might be interpreted to support fears of a "savings trap." Even at that, however, a persistent "savings trap," lasting more than another 1-2 years, is in our view unlikely. For one thing, a cyclical recovery, both in Japan and abroad, is likely by that time, and the fiscal and monetary constraints operating on the system at the moment would no longer be so strong. Secondly, after doing without it for many years, the Japanese economy is developing a growing use of consumer credit. Thirdly, in spite of pressures for administrative rationalization, government demand will continue to grow (especially for infrastructure investment). Fourthly, the housing industry, though in a slump for several years, has considerable potential simply because the quality of Japan's existing housing is so low, compared with other advanced industrial countries. Finally, as economic recovery proceeds, many industries will want to invest to initiate a restructuring process and thereby take advantage of the boom—the right-hand portion of the U-shaped process of structural adjustment referred to above. For all these reasons, we see the "savings trap" issue as a short-term problem. Even if it were to turn out to be a more serious, medium-term problem, the consequences would probably be limited to a lowering of our projected range of growth rates by no more than about one percentage point, i.e., to 3-5 percent, rather than 4-6 percent.

Looking more generally at the medium- to long-term prospects, there is a clear commitment, in both public and private discussions in Japan, to the importance of moving towards an information-based society. At least in the policy discussions that have taken place to date, Japanese make almost no distinction between information-intensive manufacturing activities and information-intensive service activities, and considerable private sector planning is already underway to implement this shift—and not incidentally maintain high investment and high growth. In practice, of course, the usual sticky questions remain as to what particular manufacturing industries (or companies) will have to be phased out. These questions also raise potentially serious political problems. On balance, however, there is a broad consensus in Japan for continued, relatively high economic growth—at least relative to comparable views in other advanced industrial economies. Indeed, more than other countries, Japan is attempting to transform its economy from one that is primarily engaged in manufacturing activities to one that is primarily engaged in services; or, with regard to the manufacturing sector, in high-technology manufacturing activities.

As noted above, Japan also continues to show a larger fraction of output and employment in agriculture and manufacturing than most other advanced industrial countries. Similarly, Japan's financial and distribution systems have clearly not evolved at the same pace as its basic manufacturing industries. This kind of lag among sectors of the economy is often seen in the history of other industrializing countries, but the contrast is perhaps more striking in Japan's case simply because differences between the more modern and more traditional sectors are easily visible. In fact, as we noted at the beginning of this section, the maturation of lagging sectors of the Japanese economy are likely to provide a significant source of future growth—and of higher rates of growth, for the rest of the decade or longer, than those likely in other advanced industrial countries.

D. Japan and the World Economy

International trade has been important to Japan's economy since the beginnings of its modern growth. Indeed, one of the main justifications for Japan's colonial expansion was to gain control of raw materials and markets. During the reconstruction from World War II and the subsequent period of rapid economic growth, it was the balance of trade that constrained what would otherwise have been even

more rapid progress. Since the development of basic manufacturing industries depended so much on the import of raw materials, in which Japan was seriously under-endowed, a pattern developed early in the Meiji era of consciously limiting imports of other, "unessential" goods and of restricting access to foreign capital markets as well, thereby husbanding what foreign currency earnings were amassed for supposedly the highest priority objectives. In this way, export earnings served as a key source of growth for the economy as a whole—and, at the same time, as the main constraint on growth. Each postwar recession, which in Japan typically meant a decline in growth rates rather than an absolute decline in GDP, stemmed from a tightening of monetary, fiscal, and other policies in direct response to a worsening in the balance of payments. Only after the mid-1960s did regular current account surpluses become the norm. However, even after the mid-1960s, Japan's current account has periodically moved into deficit, typically because the large and growing deficit in the services account (occasioned by large payments for shipping, technology licenses, etc.) exceeded the more volatile surplus in the trade account (see Table II-9). A large, long-term capital outflow emerged in the early 1970s, and has continued ever since, though with considerable volatility in the level of outflow.

1. Role of Trade to Date

Without question, exports have been vital to Japan's economic growth; only through exports could Japan pay for the imports it needed to support the extensive growth that it has achieved. It is more difficult to argue that exports drove economic growth. Even though exports grew faster than GDP in real terms, their share in GDP was small enough that the stimulus to aggregate demand was also relatively small, at least until the early 1970s (see Table II-10). The indirect stimulus was considerably more pronounced. Since exports tended to be concentrated in the more modern and highly productive industries, rapid export growth expanded still further the ability of a particular industry to take advantage of economies of scale, which in turn further improved productivity growth and held the prices of exported products down, relative to the prices of other goods. Moreover, producers who were forced to compete in

TABLE II-9
BALANCE OF PAYMENTS SUMMARY: 1967-1982
(U.S. $ MILLION)

C.Y.	Current account balance	Trade balance	Services balance	Long term capital	Short term capital	Overall balance	Exchange rate (period average, ¥/$)
1961-1966 cumulative	-104	4230	-3926	-488	344	-263	360
1967	-190	1160	-1172	-812	506	-571	360
1968	1048	2529	-1306	-239	209	1102	360
1969	2119	3699	-1399	-155	178	2283	360
1970	1970	3963	-1785	-1591	724	1374	350
1971	5797	7787	-1738	-1082	2435	7677	350
1972	6624	8971	-1883	-4487	1966	4741	303
1973	-136	3688	-3510	-9750	2407	-10074	271
1974	-4693	1436	-5842	-3881	1778	-6839	291
1975	-682	5028	-5354	-272	-1138	-2676	297
1976	3680	9887	-5867	-984	111	2924	297
1977	10918	17311	-6004	-3184	-648	7743	266
1978	16534	24596	-7387	-12389	1538	5950	210
1979	-8754	1845	-9472	-12618	2377	-16662	219
1980	-10746	2125	-11343	2394	3071	-8396	227
1981	4770	19967	-13573	-6449	-958	-2144	220
1982 Jan.-Mar.[P]	-899	2556	-2988	-5649	807	-3291	233

SOURCES: (1961-66) Lawrence B. Krause and Sueo Sekiguchi, "Japan and the World Economy," Chapter Six in Hugh Patrick and Henry Rosovsky (Eds.), *Asia's New Giant* (Washington, D.C.: The Brookings Institution, 1976); (1967-1982) Bank of Japan, *Economic Statistics Monthly*, No. 421 (April 1982), p. 6; and (exchange rate) International Monetary Fund, *International Financial Statistics*, various issues.

TABLE II-10
EXPORTS OF GOODS AND SERVICES AS A PERCENT OF GNP: 1955-1981

	Current prices	Constant prices
1955	12.8	7.6
1960	11.4	9.1
1965	11.2	11.2
1970	11.6	13.2
1973	10.8	13.9
1977	13.9	16.2
1978	11.9	15.5
1979	12.7	15.7
1980	15.2	17.9
1981	16.8	20.2

SOURCES: Lawrence B. Krause and Sueo Sekiguchi, "Japan and the World Economy," Chapter Six in Hugh Patrick and Henry Rosovsky, *Asia's New Giant* (Washington, D.C.: The Brookings Institution, 1976), p. 399; and Economic Planning Agency, *Japanese Economic Indicators*, No. 363 (May 1982), pp. 43, 45.

international markets sought aggressively to acquire the best technology and processes available. On the other hand, the Japanese domestic market was heavily shielded from foreign competition during the 1950s and 1960s.

Krause and Sekiguchi, in their work for the Brookings study of postwar Japanese development, specifically investigated the hypothesis that Japan's growth was driven or led by exports through the early 1970s. They found little support for a measurable version of the hypothesis, while acknowledging that exports did grow at a more rapid rate than GDP.[1] They also noted a commonly observed characteristic that exports tended to expand during domestic recessions. This has been even more pronounced during the 1970s, following the two oil shocks, which in turn suggests a hypothesis that Japanese industry uses exports to offset depressed domestic demand. Ki-ho Kim investigated this hypothesis in a detailed analysis of trade balance changes during 1974-76. Although his results are far from conclusive, the statistical tests utilized suggest that an "export drive cannot be ignored as a principal determinant of the Japanese trade balance and that the $9 billion improvement between 1974 and 1976 was due largely to such a drive during and following the 1973-75 recession in Japan."[2] Although recession-induced export expansion can be explained by looking at the market incentives facing firms,[3] rather than some overall policy, this behavior—whatever its origins—has certainly exacerbated the trade policy environment between Japan and its major trading partners.

Relative price trends have also contributed to Japan's export growth, although these trends reflect more fundamental processes at work. With exceptions in individual years, export prices have risen more slowly than the GNP implicit price deflator. Indeed, the export price index was virtually constant through the 1960s, and grew less than half as fast as the GNP implicit price deflator from 1970-1980. These price trends reflect the rapid rate of productivity growth, compared with other advanced industrial countries, and conservative macroeconomic policies that kept domestic inflation, after adjusting for productivity, low enough for Japan's international competitiveness to remain high. The Smithsonian exchange rate adjustments in late 1971 and the move to floating exchange rates in early 1973 corrected a serious undervaluation of the yen that had persisted since the mid-1960s. However, except for the abnormal inflation experienced in 1973 and 1974, Japan continued to out-perform other industrial countries in terms of relative price trends, especially for certain manufactured goods industries.

In only two decades (1950 to 1970), Japan moved from being an insignificant player on the world market to among the largest players in the industrialized world. Japan's share of free world exports doubled between 1960 and the early 1970s, reaching a rank of third largest, after the U.S. and West Germany; it has remained relatively constant since then (Table II-11). In terms of manufactured exports, Japan exceeded its prewar share during the early 1960s; this share has continued to rise to the present (Tables II-12 and II-13), where Japan is again third-ranking, after West Germany and the U.S. The rapid increase in Japan's balance of payments surpluses during the late 1960s was particularly disruptive to an already weakened Bretton Woods system, while the rapid export growth, highly concentrated in a handful of industries and markets, strained the ability of competing producers in other countries to adjust. Obviously, if Japanese imports had been larger, some of the balance of payments pressures on the global system would have been eased, and if Japanese imports of manufactured products had been larger, some of the political pressures on the global trading system would doubtless have been less severe. How-

[1] Krause and Sekiguchi, op. cit., pp. 398-402.

[2] Ki-ho Kim, *A Study of the Factors Affecting Japan's Trade Balance 1974-76*, Doctoral Thesis, (New Brunswick, N.J.: Rutgers University, May 1979), p. iii.

[3] The main forces at work are the build-up of inventories resulting from slack domestic demand, and the importance of maintaining cash flow in firms that are highly leveraged.

TABLE II-11
SHARES OF FREE-WORLD EXPORTS

	1960	1970	1973	1978	1980
U.S.	18.2%	15.4%	13.7%	12.1%	12.0%
France	6.0	6.4	7.0	6.7	6.3
Germany (F.R.)	10.1	12.1	13.0	12.0	10.5
Italy	3.2	4.7	4.3	4.7	4.2
Netherlands	3.6	4.2	4.6	4.2	4.0
U.K.	9.4	7.0	5.9	6.0	6.3
Japan	3.6	6.9	7.1	8.3	7.1
Canada	5.1	5.9	5.1	4.1	3.7

SOURCE: *International Economic Indicators,* U.S. Department of Commerce (March 1978) and (March 1982).

TABLE II-12
PERCENTAGE SHARES OF WORLD TRADE IN MANUFACTURES[1]

	1883	1890	1899	1913	1929	1937	1954
U.S.	3.4%	3.9%	9.8%	11.0%	18.2%	17.3%	25.8%
U.K.	37.1	35.8	28.4	25.4	20.4	19.1	15.8
Germany	17.2	17.2	19.5	23.0	18.4	19.7	11.6[2]
France	14.6	14.5	12.6	10.6	9.4	5.2	7.1
Belgium	4.8	5.1	4.9	4.3	4.9	5.2	4.8
Canada	0.1	0.1	0.3	0.6	2.9	4.2	4.8
Japan	0.1	0.3	1.3	2.1	3.4	6.4	3.7
Others	22.7	23.1	23.2	23.0	22.4	22.9	26.4

[1]Despite the title, the table in the original article refers only to data on exports of manufactures.

[2]West Germany only.

SOURCE: W. Arthur Lewis, "International Competition in Manufactures," *American Economic Review* (May, 1957), p. 579.

TABLE II-13
SHARES OF WORLD EXPORTS OF MANUFACTURES[1]

	1960	1970	1980
U.S.	22.8%	18.4%	16.4%
France	9.1	8.3	9.6
Germany (F.R.)	18.2	19.0	19.0
Italy	4.8	6.9	7.6
Netherlands	3.8	4.2	4.4
U.K.	15.3	10.1	9.8
Japan	6.5	11.2	14.2
Canada	4.5	6.0	3.9

[1]World exports are defined as the sum of exports from 14 major industrial countries.

SOURCE: *International Economic Indicators,* U.S. Department of Commerce (March 1978) and Office of Trade and Investment, International Trade Administration, U.S. Department of Commerce.

ever, even if Japanese import markets had been open, the pace at which Japanese exports penetrated individual markets abroad would have strained the international trading system.

The structure of Japanese exports has changed dramatically since the 1950s. Between 1955 and 1973, the most notable change was a decline in the importance of labor-intensive products, especially traditional products. The most rapidly growing category of exports was that of capital-intensive and high wage goods—meaning skilled, labor-intensive goods, mainly automobiles. Research and development-intensive goods also showed significant growth.[1] These trends continued after 1973, although the increase in oil prices sharply curtailed growth in some of the more capital-intensive goods. Table II-14 shows how the country and commodity composition of trade changed between 1973 and 1980.

[1]See Krause and Sekiguchi, op. cit., p. 409, for supporting data.

TABLE II-14
JAPANESE TRADE BY AREAS AND COMMODITY GROUPS, 1973 AND 1980

(BILLIONS DOLLARS, EXPORTS F.O.B., IMPORTS C.I.F.)

	Year	United States		Canada		Western Europe		Advanced Industrial countries		Australia New Zealand S. Africa		Traditional oil exporters		Other developing countries		Eastern trading area		Total trade	
		Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp
Food	1973	.28	2.74	.04	.60	.16	.42	.48	3.77	.04	1.07	.07	.23	.28	1.86	.01	.33	.88	7.25
	1980	.26	6.56	.05	1.22	.21	1.19	.52	8.97	.06	2.27	.36	.42	.75	4.45	.02	.74	1.70	16.85
Raw materials	1973	.04	1.68	.01	.28	.09	.14	.14	2.11	.04	1.09	.05	.66	.35	1.84	.04	.85	.63	6.55
	1980	.03	3.53	.01	1.10	.17	.24	.21	4.87	.05	1.03	.15	1.49	.56	3.53	.25	1.16	1.22	12.08
Ores and other	1973		.53		.70	.01	.05	.01	1.27		1.27		.08	.03	1.73		.11	.05	4.46
minerals	1980		1.46	.01	.88	.01	.13	.02	2.47	.02	2.49	.01	.38	.11	3.96	.02	.18	.17	9.49
Fuels	1973	.02	.62		.24		.01	.02	.87		.57	.01	5.98	.06	.73		.20	.09	8.34
	1980	.04	2.10		.74	.02	.04	.07	2.89	.02	2.30	.03	53.72	.29	8.34	.10	2.74	.50	69.99
Non ferrous	1973	.08	.21		.08	.03	.12	.12	.42		.19	.01	.03	.15	.72	.03	.31	.31	1.67
metals	1980	.55	.86	.01	.24	.33	.30	.89	1.41	.03	.66	.16	.34	.72	1.61	.12	.46	1.92	4.48
Total primary	**1973**	**.42**	**5.79**	**.05**	**1.90**	**.31**	**.74**	**.78**	**8.43**	**.09**	**4.18**	**.14**	**6.97**	**.87**	**6.88**	**.08**	**1.79**	**1.96**	**28.27**
products	**1980**	**.89**	**14.51**	**.07**	**4.19**	**.75**	**1.91**	**1.71**	**20.61**	**.17**	**8.74**	**.70**	**56.35**	**2.42**	**21.89**	**.51**	**5.29**	**5.51**	**112.89**
Iron and steel	1973	.97	.02	.11		.63	.04	1.71	.07	.29	.08	.63		1.93	.05	.75	.03	5.31	.23
	1980	2.72	.06	.25	.02	.82	.13	3.79	.22	.46	.15	3.05	.03	5.64	.42	2.51	.07	15.45	.89
Chemicals	1973	.27	.79	.02	.04	.35	.82	.64	1.65	.13	.08	.15		1.03	.13	.30	.09	2.25	1.95
	1980	1.03	2.79	.12	.19	1.18	2.13	2.32	5.11	.39	.30	.69	.02	3.17	.75	1.03	.29	7.60	6.47
Other semi-	1973	.26	.30	.03	.02	.23	.24	.52	.57	.10	.11	.11		.38	.58	.04	.04	1.16	1.30
manufactures	1980	.59	1.05	.10	.13	.49	.49	1.17	1.66	.27	.37	.87	.03	1.53	.87	.27	.13	4.11	3.06
Total engineering	1973	6.38	1.93	.64	.03	4.46	1.38	11.47	3.34	1.06	.02	1.22		5.11	.26	.65	.03	21.57	3.65
products	1980	24.27	5.17	1.72	.15	16.23	3.44	42.23	8.77	4.05	.03	11.34	.01	21.65	1.37	3.94	.09	85.43	10.27
Machinery for	1973	.37	.47	.05	.01	.42	.56	.85	1.04	.20	.01	.28		1.30	.02	.34	.02	2.97	1.08
specialized	1980	2.16	.96	.20	.02	1.70	1.12	4.06	2.11	.70	.01	2.00		4.84	.10	1.76	.02	13.35	2.23
indus.																			
Office & tele-	1973	.72	.43	.07	.01	.49	.21	1.28	.66	.08		.06		.50	.11	.02		1.94	.77
communica-	1980	2.41	1.23	.13	.03	2.20	.28	4.74	1.55	.34		.35		2.47	.46	.12		8.01	2.01
tions equip.																			

(Continued)

TABLE II-14 (continued)

JAPANESE TRADE BY AREAS AND COMMODITY GROUPS, 1973 AND 1980

(BILLIONS DOLLARS, EXPORTS F.O.B., IMPORTS C.I.F.)

	Year	United States		Canada		Western Europe		Advanced Industrial countries		Australia New Zealand S. Africa		Traditional oil exporters		Other developing countries		Eastern trading area		Total trade	
		Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp
Road motor vehicles	1973	2.30	.09	.22		.76	.10	3.28	.19	.45		.34		.78		.04		4.90	.19
	1980	12.05	.19	.76		4.76	.42	17.57	.60	1.80		3.83		4.60	.01	.28		28.09	.61
Other machinery & transport equip.	1973	1.34	.86	.12	.01	1.82	.36	3.28	1.22	.20	.01	.35		1.80	.10	.23	.01	7.91	1.33
	1980	3.84	2.63	.26	.08	3.28	1.36	7.38	4.08	.69	.01	3.19	.01	6.28	.52	1.51	.06	21.27	4.68
Household appliances	1973	1.64	.08	.17		.97	.15	2.78	.23	.13		.19		.73	.03	.02		3.85	.27
	1980	3.82	.16	.38	.02	4.28	.25	8.47	.43	.53		1.97		3.46	.28	.28		14.71	.73
Textiles	1973	.27	.11	.06		.13	.29	.46	.41	.29		.38		1.17	.55	.15	.16	2.45	1.13
	1980	.38	.13	.06		.39	.47	.83	.60	.33		1.20	.01	2.19	.73	.55	.31	5.10	1.65
Clothing	1973	.23	.02	.02		.04	.09	.29	.11	.01		.01		.04	.42	.01	.05	.37	.57
	1980	.21	.09	.01	.01	.09	.34	.31	.43	.01		.06		.09	.85	.03	.24	.50	1.53
Other consumer goods	1973	.62	.28	.06	.01	.39	.43	1.07	.71	.09	.01	.06		.23	.21	.02	.11	1.47	1.05
	1980	1.21	.50	.11	.01	1.39	.83	2.71	1.34	.18		.51		.97	.73	.12	.14	4.48	2.22
Total manufactures	**1973**	**8.99**	**3.45**	**.95**	**.11**	**6.22**	**3.30**	**16.16**	**6.85**	**1.95**	**.29**	**2.57**	**.02**	**9.90**	**2.21**	**1.94**	**.51**	**34.58**	**9.88**
	1980	**30.41**	**9.79**	**2.37**	**.51**	**20.58**	**7.83**	**53.35**	**18.13**	**5.68**	**.86**	**17.72**	**.11**	**35.24**	**5.73**	**8.46**	**1.26**	**122.68**	**26.09**
Total[1]	**1973**	**9.55**	**9.28**	**1.00**	**2.01**	**6.61**	**4.07**	**17.16**	**15.36**	**2.05**	**4.48**	**2.72**	**7.00**	**10.89**	**9.16**	**2.04**	**2.31**	**36.93**	**38.31**
	1980	**31.65**	**24.45**	**2.44**	**4.72**	**21.66**	**9.88**	**55.74**	**39.05**	**5.87**	**9.62**	**18.48**	**56.49**	**38.06**	**28.11**	**9.16**	**6.62**	**129.54**	**139.89**

[1]Including commodities not classified according to kind.

SOURCE: General Agreement on Tariffs and Trade, *International Trade, 1980/81* (Geneva: 1981), Table A 19.

In nominal terms, Japanese total exports grew by 251 percent between 1973 and 1980. Exports growing above this average include other semi-manufacturers (at 254 percent) and total engineering products (at 296 percent). Within total engineering products, all of the categories except other machinery and transport equipment grew faster than total exports: machinery for specialized industries (at 349 percent); office and telecommunications equipment (at 313 percent); road motor vehicles (at 473 percent); and household appliances (at 282 percent). Obviously, in terms of share and rate of growth, road motor vehicles, principally automobiles, were the star performer.

Historically, Japan's trade pattern can be described as a textbook example of a simple Heckscher-Ohlin model, in which one country buys or sells agricultural products and other raw materials with another that buys or sells predominantly manufactured goods. This pattern has dominated trading relations between Japan and most of its trading partners since since the Meiji Restoration. As shown in Figure II-3, Japan's imports of manufactured goods, as a percent of total imports, are strikingly lower than those of other advanced industrial countries. Indeed, Japan's imports of manufactured goods are even strikingly lower than South Korea's, a country with a similar lack of natural resource endowments and a similar culture.[1] Given Japan's lack of natural resource endowments, the distance from its major trading partners, and thus, in the common view at least, its consequently inordinate dependence on exports of manufactured goods as a source of funds for the purchase of raw materials, many, if not most, Japanese have always considered a low level of imports of manufactured goods to be *prima facie* a necessity. This once inviolate notion has begun to change, however, as continued economic development brings about changes in Japan's comparative advantage and in the tastes of Japanese consumers. Before the oil price increase of 1973-74, the share of manufactured imports in Japan's total of merchandise imports was already increasing, if only gradually and from an extremely low base. Figure II-4, which adjusts the data to exclude the effects of imports of mineral fuels, lubricants, and related materials, shows slow but steady growth in the share of manufactured product imports before 1974, and then, after a sharp drop beginning in 1974 and a second, but much less sharp, drop beginning in 1978, a return to the previous trend in spite of the 1979-80 oil price increases. Many critics of Japanese trade policy would consider the trend shown in Figure II-4 to be rising far too slowly, but for purposes of establishing what the trend has actually been, we find it important that at least the previous rate of growth of manufactured imports has resumed; as discussed in the following section, we expect this trend to continue, and probably to accelerate.

Referring back to Table II-14, one can identify those categories of manufactured goods that have experienced the most rapid import expansion. Imports of total manufactures (in nominal terms) grew 164 percent between 1973 and 1980 (considerably less than the 251 percent growth rate of total exports). Above-average import growth was experienced in nonferrous metals (168 percent), iron and steel (287 percent), chemicals (232 percent), total engineering products (281 percent), and clothing (168 percent). Within total engineering products, the sectors showing the most rapid growth included road motor vehicles, from a very low base (at 221 percent), other machinery and transport equipment (at 252 percent), and household appliances, also from a very small base (at 170 percent).

Naturally, this level of aggregation hides many interesting industry-specific trends, but the data do support conclusions reported elsewhere in this report, particularly in Chapter VII on declining industries. A number of basic manufactured goods are becoming increasingly uncompetitive in Japan, and imports as a percentage of domestic consumption have begun to rise. To date these have mostly been producer goods such as bulk chemicals and processed metals, rather than consumer goods, but in time these, too, can be expected to increase. At the other end of the competitive spectrum, the rapid growth in imports of other machinery and transport equipment reflects a lag in Japan's manufacturing capability, relative to the U.S. and some European countries, in certain high technology, capital-intensive industries such as aircraft.

---

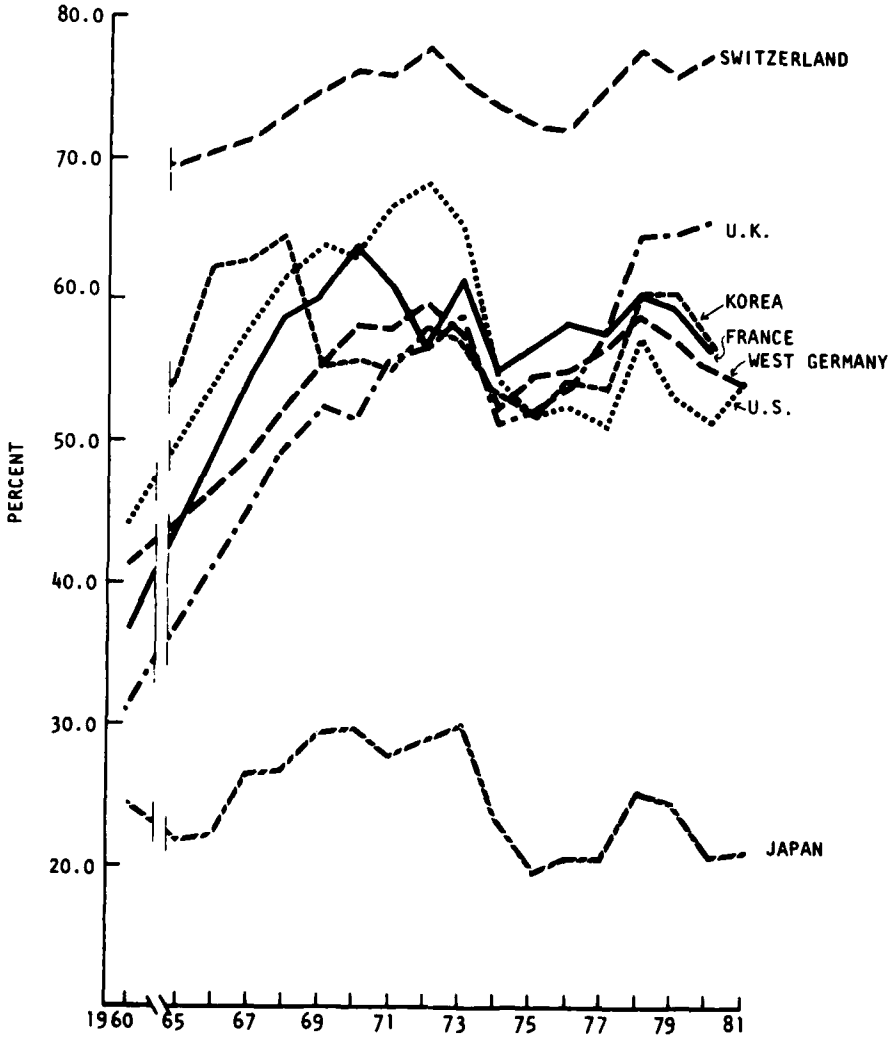
[1] In terms of classical international trade theory, the most likely explanation of South Korea's high level of manufactured imports lies in the country's small size and its need, particularly as economic development accelerated in the 1960s, for capital goods imports.

Japan, too, has been an importer of capital goods, particularly those with high technology content that could not yet be produced at home. But Japan's much larger size, in terms of population and, even after the destruction wrought by World War II, income per capita, also permitted Japanese firms to develop new products for the domestic market first. Indeed, this has been the traditional Japanese pattern in the consumer goods exports for which the country is so famous, and, for that matter, in capital goods exports as well: because of the large domestic market, Japanese firms could built up large production runs, lower their unit costs, and seek export markets only after their products had been refined to a point, in both price and quality, where they were very likely to be sold successfully abroad. In the particular set of circumstances following World War II—when the shock of Japan's first military defeat in its history was mixed with a strong consensus to "re-catch up to the West"—the Japanese public simply did without many finished products, especially consumer goods, that could not be manufactured at home.

Arguably, no other country, regardless of its size, can repeat this particular postwar Japanese pattern because no other country's consumer sector will ever again be as self-abnegating as Japan's was until recently.

Figure II-3

MANUFACTURED PRODUCT IMPORTS AS A PERCENT OF TOTAL MERCHANDISE IMPORTS, 1960-1981 (c.i.f.)

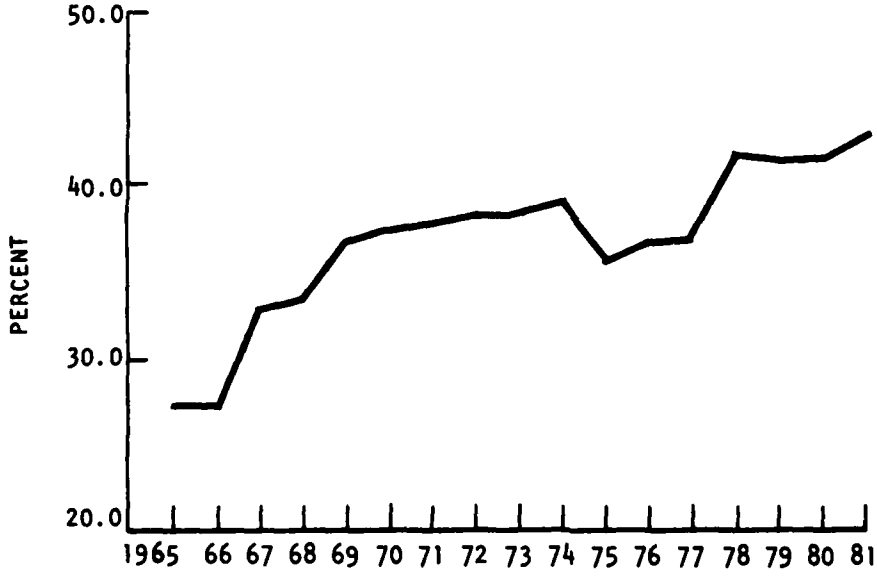


NOTE: MERCHANDISE IMPORT DATA FOR THE UNITED KINGDOM AND FRANCE WAS CONVERTED FROM f.o.b TO c.i.f. FOR 1960, 1967-69 AND 1971-1974 (ALSO FOR JAPAN, 1960) USING THE FACTOR OF 1.1 AS DONE IN INTERNATIONAL MONETARY FUND, DIRECTION OF TRADE; U.S. MANUFACTURED DATA FOR 1960, 1967-69 and 1971-74, WAS CONVERTED FROM f.a.s. to c.i.f. USING THE FACTOR OF 1.06.

SOURCE: OECD, ECONOMIC SURVEYS: SWITZERLAND, MARCH 1973, P. 72, AND OCTOBER 1980, P. 59; U.S. DEPARTMENT OF COMMERCE, INTERNATIONAL ECONOMIC INDICATORS, VARIOUS ISSUES: INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, VARIOUS ISSUES: ECONOMIC PLANNING BOARD, SEOUL, KOREA, OFFICE OF CUSTOMS ADMINISTRATION, MAJOR STATISTICS OF KOREAN ECONOMY, 1981; AND UNITED NATIONS STATISTICAL OFFICE.

Figure II-4

MANUFACTURED PRODUCT IMPORTS AS
A PERCENT OF TOTAL MERCHANDISE IMPORTS, LESS IMPORTS
OF MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS, 1965-81
(c.i.f.)



SOURCE: OECD, ECONOMIC SURVEYS: JAPAN, JULY 1973 AND JULY 1980; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, VARIOUS ISSUES; AND UNITED NATIONS STATISTICAL OFFICE.

2. Future Trends in Japanese Trade

The most important trend influencing Japanese trade patterns is, as noted above, the obvious one of changing comparative advantage. Having caught up with other, predominantly Western advanced industrial countries in terms of GNP per capita, Japan is slowly moving toward a so-called "horizontal," or intra-industry, trade pattern that has long characterized exchanges among other advanced industrial countries. This pattern is most visible in intra-European trade, in which two nations buy and sell many of the same commodities—German cars are sold in France, French cars in Germany, and so on. This is in contrast to the textbook Heckscher-Ohlin, or "vertical," trade pattern mentioned above, in which one country buys or sells agricultural products or raw materials to another that sells or buys manufactured goods. Morever, this shift toward a horizontal pattern is occurring in spite of whatever cultural bias may have prevented it from occurring in the past, or as rapidly as it might have occurred in another country moving through various stages of development. Indeed, the slow pace at which this shift is occurring in Japan is itself a major issue between Japan and its trading partners. But the issue of the pace at which the shift to a horizontal trade pattern is occurring should be understood for what it is—namely, a political issue—and a separate question from the economic issue of whether such a shift is occurring at all, even if slowly.

Much of the traditional Japanese pattern of eschewing manufactured imports will doubtless remain intact, and for the reasons Japanese usually put forth, i.e., a poor endowment of natural resources and various national security arguments, many of them implicit. Japan's much discussed array of informal barriers will doubtless also leave a legacy affecting actual trade transactions for many years. Increasingly, however, the traditional pattern will change over time. As noted briefly above and discussed in detail in Chapter VII, the changes will be seen first in basic and intermediate manufacturing industries that are becoming uncompetitive, e.g., petrochemicals, aluminum, and other base metals, roughly in order of their energy-intensity. Imports of these goods have been increasing apace, and will become much larger during the next 4-5 years. A broader spectrum of forces will work to expand imports of other manufactured goods, more or less steadily in the direction of a horizontal trade pattern, but significant changes in the volume of these imports are likely only after 6 to 8 years and beyond.

The Japanese economy itself, like that of other advanced industrial countries, will be moving toward a more specialized manufacturing sector (i.e., high-technology manufacturing) and a more modernized service sector (i.e., where services are less a residual category for under-employed persons or low-paying jobs and more a source of productivity growth comparable to the manufacturing sector). As Japan comes to manufacture more high technology products, it will inevitably begin to import more "low-end-of-the-market" manufactured goods. Indeed, it has to make this shift in order to be able to export new products competitively, since various NICs will come to out-compete Japan and other advanced industrial countries in many basic manufacturing industries. And as it makes this shift, Japan will probably continue to do well in a high technology version of its traditionally successful pattern in manufacturing, namely to concentrate on certain selected products, to develop these products for both a domestic and an export market, and to do particularly well in selling these in specially targeted markets.

With regard to services, Japan will follow a path already laid by the U.S. and other trading partners, which are well into a shift to more trade in services than has traditionally been thought likely. The U.S. perhaps has a particular advantage over Japan in services trade because the flexibilty of the U.S. social structure helps to nurture many new types of jobs and businesses. Advertising, accounting, banking, hotel management, certain kinds of consulting (especially in software), and various other forms of information processing are examples of the kinds of services in which Japan may be at a relative disadvantage, in part because the Japanese language and culture are less easily transferable internationally than the English language and American culture. By the same token, Japanese will excel at other tradeable services, e.g., engineering-related consulting, wholesale trading (where Japan's famous *sogo shosha*—trading companies such as Mitsui—have an enormous head start over American firms now entering this field), and freight forwarding (where a Japanese affection for detailed administration leaves Americans standing on the docks with their hands in their pockets).

Japanese tastes are also changing, as economic development proceeds and the value system of earlier postwar years no longer governs consumer preferences. As noted above, before balance of payments surpluses began to be amassed in the early 1970s (and were then temporarily, but only temporarily, interrupted by oil price increases), few Japanese consumers sought, or thought they had a right or a need to seek, lower-priced imported products in lieu of higher-priced, domestically-produced products. Such was the discipline of the day that Japanese consumers at both the wholesale and retail level took for granted the idea that, except for "essential" capital goods, they were simply not entitled to import finished products. The regulatory system supported—and to a degree created—this value system. Today, the availability of, and regulations governing, import licenses and foreign exchange have been liberalized, and consumers at both the retail and the wholesale level are changing their preferences at an increasing rate. At the retail level, the once-unquestioned idea

that foreign consumer goods were simply "luxuries" is changing for various reasons—partly a result of increased travel, since foreign exchange allocations for tourism were liberalized in the early 1970s, partly a result of greater efforts by foreign exporters to sell to the Japanese market, and partly a result of official attempts to encourage imports or at least not discourage them.[1] It is at the wholesale level, however, that changing tastes (or preferences) are likely to have a more immediate impact on Japanese trade patterns. When Japanese producers find they can no longer sell goods competitively if they buy only (or mainly) higher-priced, domestically-produced inputs, they are likely to purchase foreign-produced inputs, and to do so with few second thoughts. Indeed, as noted above, this shift has already occurred in various energy-intensive industries where the price differentials between domestically-produced and foreign produced inputs are so great that Japanese users of these inputs have, as they would put it, "no choice" but to buy the foreign product.

In time, if not quite within the next five years, a shift to horizontal trade in manufactures and to increased trade in services will be visible in still more parts of the economy. Perhaps the best illustrations of changes in manufacturing trade that are already in the works are in the producer goods sectors where price differentials are too great to ignore and in the two-way U.S.-Japanese trade in semiconductors. For various and quite different reasons, Japanese and American firms are now establishing semiconductor manufacturing facilities in the U.S. and Japan respectively, a pattern that was previously unknown (or at least unnoticed). As wage levels in the two countries converge, relative to the past, the reasons behind such investment will increasingly stem from qualitative, rather than quantitative, factors, e.g., access to markets, facilitation of delivery, and expansion of the concept of complementarity to more and more products (e.g., a "world computer," as well as a "world car"). In services trade, the by-now obvious growth of sushi shops in New York and McDonald's-style fast food chains in Tokyo are two examples of how intangible concepts of taste, industrial engineering, and marketing can cross national boundaries with great flexibility. In general, both kinds of changes—more horizontal trade in high technology manufactures and more trade volume in a variety of services—are likely to characterize Japanese trade patterns in the 1980s, certainly more than in the 1970s, and under almost any set of cyclical conditions, though the pace at which such changes occur would clearly be greater in a scenario of worldwide economic resurgence than one of continued stagflation.

[1]This latter motivation lay behind Prime Minister Suzuki's statement of May 28, 1982, just before the Versailles summit, that imports of foreign-made manufactured products should be welcomed.

3. International Transactions

Japanese international financial transactions have been tightly controlled since the end of the occupation. Just after the war, foreign exchange was so scarce that its use for anything except imports of "necessities" was strictly regulated, and kept generally restricted until the late 1960s. Somewhat surprisingly, given the scarcity of foreign exchange, inward flows of capital were also strictly regulated. Some inflows were permitted before the early 1970s in order to expand investment and accelerate economic growth, but these were usually limited to loans to, or arranged by, the Japanese government, and were drawn from other government organizations such as the U.S. Export-Import Bank and the World Bank. The explanation usually given for such tight control on capital inflows is that the Japanese government did not want either the public or private sectors to build up a debt burden that could not be paid off if economic conditions turned against Japan. This does not, however, explain the maintenance of rigid controls on inward direct investment (i.e., equity, not debt) until the late 1960s.[2] These controls were maintained because the government was explicitly trying to minimize foreign ownership of domestic productive assets. To achieve this goal and still promote high economic growth, the government needed to raise domestic savings, which led it to introduce a variety of tax and other incentives to promote such savings.[3] The fear of substantial foreign ownership apparently outweighed what would otherwise have been an intense short-term need for foreign exchange and more investment capital. Fortunately for Japan, a combination of unusual circumstances prevented the maintenance of tight controls on inward capital flows from seriously retarding domestic growth—most importantly, in the early 1950s, the materiel requirements for U.N. forces in Korea and, continuing through the decade, "special procurement" expenditures for U.S. forces in Japan. Under less fortuitous circumstances, the government might have been forced to relax capital controls or to live with a considerably lower growth rate.[4]

With Japan's development of a trade surplus from the mid-1960s, and a generally persistent current account surplus from the late 1960s, many changes in the regulations governing capital flows were instituted. Most of the changes were part of a long-term liberalization policy, biased more toward permitting capital outflows than inflows. However, the

[2]Control of foreign direct investment was authorized in the 1950 law concerning foreign investment.

[3]Details concerning these incentives and the success of this attempt to raise savings rates are discussed in Chapter IV.

[4]As discussed in Chapter V, such tight control of international financial transactions was matched by comparably tight controls over domestic financial transactions.

Ministry of Finance (MOF) retained considerable case-by-case discretionary authority, which in turn enabled the pace of the liberalization process to vary according to economic conditions. For example, capital outflow restrictions were first eased when the trade and current account balances moved into substantial surplus in the early 1970s. Then, when the first oil shock hit, capital outflows were once again restrained. Meanwhile, capital inflows remained highly controlled, with only gradual easing lest "too much" foreign investment come in.[1] Because of the threat that speculative pressure might cause the (previously undervalued) yen to increase further, short-term capital inflows were also kept under tight reign.

Perhaps the most important legal change affecting Japanese international transactions was the Foreign Exchange Law introduced in December 1980. The assumption on which earlier legislation was based—namely that foreign exchange transactions were prohibited except where expressly permitted—was changed to one permitting all transactions except those specifically prohibited. Japanese officials regard this as a very major change. In practice, since Japanese laws are normally written with wide latitude left to bureaucratic discretion, and, as discussed in Chapter III, the system of administrative guidance based on this latitude is so important to the governing process, the actual impact of this change is likely to be less than the wording of the law might indicate. On the other hand, the 1980 Foreign Exchange Law was more than simply a cosmetic change. The capital outflows and increased activity in foreign exchange and capital markets that have occurred since the law was enacted demonstrate that the change is having genuine consequences on Japan's international financial transactions.

The further liberalization of the Japanese capital market to foreigners is currently an important topic of discussion both within Japan itself and between Japanese government officials and their counterparts in other countries. This discussion has several important dimensions: First, inside Japan, capital market liberalization is only one aspect of the broader issue of the liberalization of Japanese financial markets in general. Many groups have conflicting interests, including the sometimes quite different concerns of the MOF and the Bank of Japan (BOJ). For example, BOJ officials are concerned that greater liberalization of Japanese financial markets would increase to the point of being "intolerable," i.e., it would exacerbate the difficulty the BOJ already has in controlling the domestic financial system. From the traditional viewpoint of the BOJ, this concern is justified, since, as discussed in Chapter V, its ability to direct the flow of credit in a detailed manner among sectors of the economy has already become much more difficult than in the past, and since changes in global financial markets are influencing domestic conditions much more directly than in the past. However, and this appears closer to the MOF view, much of this loosening up of Japanese financial markets is occurring anyway, as the domestic financial system becomes more sophisticated, more modernized, and more integrated into the world economy. Indeed, it is the high costs of maintaining the existing system that are increasing the domestic pressure for greater liberalization, domestically and internationally.

A second major dimension of the liberalization issue is the increased internationalization of the yen. Although Japan has become a major economic power, the government in general has resisted any expansion of the role of the yen as an international currency, either for private or official purposes.[2] There are, after all, real costs as well as benefits to the internationalization of a currency. The main cost is the government's loss of an ability to intervene easily in the flow of funds affecting the exchange rate. Some loss of control has of course already occurred, but as overseas yen transactions increase further, the degree of control that remains would fall off dramatically. In any case, the larger the international market for yen, the more difficult it would be to pursue a monetary policy that diverges sharply from world conditions—large domestic firms could simply lend or borrow directly on international markets in yen. Over time, the Japanese government can impede the internationalization of the yen, but it probably cannot stop the process. Considerable international use of the yen has occurred already, and continuing pressure exists through official channels for Japan to take on greater international financial responsibilities.

A third dimension of the liberalization issue is that of the efficiency of the capital market and a separate, but related, issue of reciprocity. On balance, most economic analysts would argue that freer capital markets increase the efficiency of the international financial system (i.e., increase the return to ultimate savers and reduce the cost to ultimate borrowers). By extension, a greater degree of integration of the largest capital market in Asia, namely Tokyo, into the global market would further increase the efficiency gains already made. This raises the reciprocity issue. To date, Japanese firms have been able to take advantage of open capital markets elsewhere in the world, while outsiders have had only limited, though increasing, access to Japanese capital markets. Since domestic interest rates in Japan are held below those that would emerge in a freer market—domestically or internationally—the

[1] Beginning in 1968 a series of capital liberalizations very slowly opened the range of possibilities for foreign investors.

[2] West Germany has done the same, and for similar reasons.

restrictions that foreigners face in obtaining access to Japanese capital markets are increasingly being perceived as an unfair trade practice. Although simple newspaper comparisons of interest rates do not give an accurate account of the gap between Japanese and world rates, since the use of compensating balances, fees, and other practices significantly increase the real interest cost in Japan, there is, at least at the moment, an unusually large gap between world and Japanese interest rates, which in turn has contributed to the degree of criticism that Japan's system of administered rates faces. A further internationalization of the capital market would almost certainly lead to a further liberalization of domestic financial markets, and in turn would almost certainly benefit foreign firms seeking to borrow in Japan. However, such internationalization would also very likely mean a lessening of the interest rate differentials that now make the idea of borrowing in Japan so attractive to foreigners.

A fourth dimension of capital market liberalization is the concern expressed by many foreign government officials and business representatives that Japanese officials are using a controlled capital market to maintain an artificially low exchange rate to promote exports. In part, this concern reflects a legacy of the late 1960s and early 1970s, when such a practice was indeed the case (and was followed by European countries as well). In part the yen is seemingly undervalued at the moment because Japan's low interest rates, compared with the U.S. and Eurocurrency rates, have caused a substantial capital outlow, which has depressed the exchange rate in spite of Japan's large current account surplus. Indeed, Japanese officials have tried, without much success, to use various administrative practices to stem this flow. The capital liberalization that has occurred to date has released a pent-up domestic demand for foreign assets (a phenomenon likely whenever administered controls on prices are removed). This pent-up demand has been increased by the unusually high interest rates available to Japanese lenders in U.S. and European markets. At the same time, again due to interest rate differentials, borrowing abroad is not particularly attractive to Japanese firms at the moment. Moreover, despite liberalization of restrictions on foreign direct investment, Japan remains a difficult market to enter for a variety of institutional reasons, and capital investment in general has been weak for several years for macroeconomic reasons. All these imbalances of earlier periods will take some time to work themselves out, e.g., the expansion of incoming investment that is bound to occur in response to liberalization will not take place overnight. In the face of these trends it is difficult to argue that the system can easily be manipulated to hold the exchange rate down. Indeed, much evidence points to a desire by officials for the exchange rate to rise; the market has dictated otherwise.

As discussed above, little help can be provided at the moment by domestic monetary policy, which is tightly constrained on the one hand by the need to maintain generally low domestic interest rates to stimulate investment in the short-term and to hold down the government's debt service burden. On the other hand, interest rates also cannot easily be lowered any further because of a fear of increased capital outflows and/or an even weaker exchange rate. The compromise policy that is currently being followed satisfies no one, but cannot easily be changed. Beyond the general macroeconomic policies available to all advanced industrial countries, more detailed control of the Japanese exchange rate through monetary instruments has become less and less possible over time, as the size of the foreign exchange market has grown much larger than the reserves available to the government for intervention.

4. U.S.-Japan Bilateral Trends

As Japan has moved from a defeated, war-damaged country, concentrating virtually all its energies on economic growth, to one of the most economically powerful countries in the world, its relationship with the U.S. has changed fundamentally—and not always as smoothly as either country might have preferred. Simply by virtue of its size, and the concomitant economic role it has been playing and will increasingly play, Japan has become a major U.S. ally in world affairs generally, and easily the principal U.S. ally in Asia. It is easy to foresee adverse consequences of scenarios in which Japan were less closely allied to the U.S.: Regional trade blocs would be more likely to develop and, as a result, rates of economic growth for the rest of the world, and the U.S. as well, could be measurably below existing rates. Japan's defense forces would probably be much larger, far beyond the increased self-defense levels sought by the U.S. and perhaps also armed with nuclear weapons; more importantly, whether nuclear-armed armed or not, Japan's defense forces would probably be operating more autonomously, and less in conjunction with U.S. forces. The political complications of a strong Japan that were not allied with the U.S. would be vast indeed, e.g., a possible struggle between China and Japan for influence in other countries in Asia, and an intensified regional arms race, up to and including the proliferation of nuclear weapons to South Korea, Taiwan, Australia, and Indonesia. On the other hand, the price the U.S. is prepared to pay to avoid bringing about these potential complications is not unlimited, particularly since they have a low probability of occurring. Indeed, throughout the postwar period, the key political issue between the U.S. and Japan has always been the degree to which Japan has (or has not) taken on increased responsibilities for supposedly common interests as its economic power to

take on such responsibilities has increased. In general, of course, the issue of burden sharing between the U.S. and all its allies is among the most intractable policy problems of the postwar period.[1]

Without discussing such strictly political issues further, suffice it to say that the perennial debate over burden sharing has itself been a burden to U.S.-Japanese relations, with Americans invariably expecting Japan to take up a larger share of what they assume to be commonly-perceived burdens than Japanese, with a different perception of common interests, were inclined to do. To make matters worse, at various times (e.g., in 1971, with the collapse of the Bretton Woods system of fixed exchange rates and the conclusion shortly thereafter of a bilateral agreement limiting Japanese textile imports to the U.S.), unilateral U.S. actions have appeared to be an effective method of galvanizing the Japanese government into action.

Economic issues have caused the most serious specific problems between the U.S. and Japan. In the mid-1960s, Japan's concentrated export drives in various labor-intensive industries, most notably in textiles and clothing, contributed to an already difficult adjustment process in industries that were in decline in the U.S. In the late 1960s and early 1970s, Japan's growing balance of trade surpluses and an undervalued yen, combined with an unwillingness to take serious actions to correct these problems, contributed to the collapse of the Bretton Woods fixed exchange rate system. In the 1970s and early 1980s, Japan's export growth has continued at an extraordinary pace in industries such as steel and automobiles, which importing nations considered especially important either for strategic reasons or because of adverse unemployment effects. Japan's more recent export successes in semi-conductors, printers and other computer components have raised similar questions. After both oil shocks, Japan returned quickly to large trade and current account surpluses, which in turn contributed to the concurrent global problem of adjusting to the transfer of resources to oil exporting countries. Large swings in both the bilateral trade balance with the U.S. and yen/dollar exchange rate have occurred since the early 1970s (see Figure II-5).

Not surprisingly, U.S.-Japanese relations tended to deteriorate whenever the bilateral trade balance moved sharply against the U.S. Japan's past history of mercantilist policies combined with very rapid and highly visible successes in many products, have created almost a seige or warfare mentality among many Americans, both specialists and ordinary citizens. In fact, however, a significant portion of the swings in the bilateral trade balance stemmed from different macroeconomic policies and divergent responses to exogenous events (e.g., the oil shocks or the timing of business cycles).

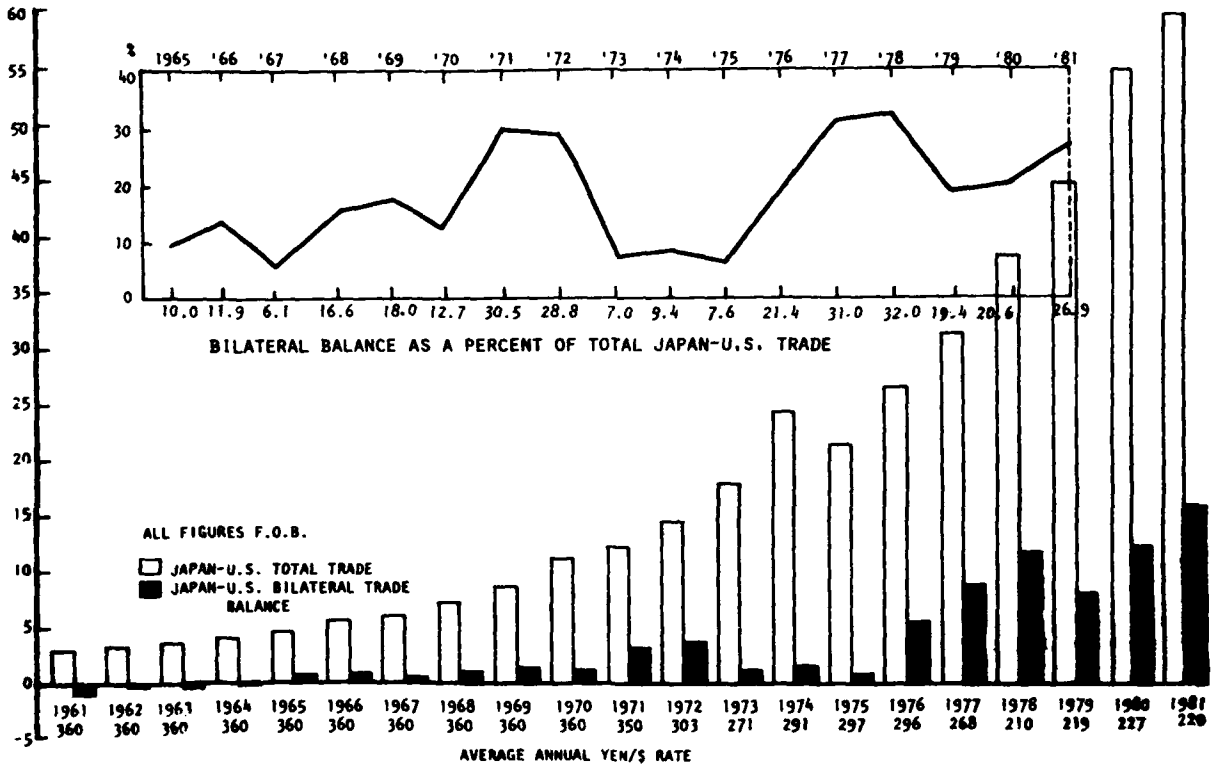
The political rhetoric of bilateral relations has a dynamic of its own, and is frequently quite different from underlying economic trends. Political rhetoric is highly sensitive to short-term declines in cyclical economic conditions, but much less sensitive to an improvement in these conditions. For example, it is easy to imagine cases in which members of Congress might propose protectionist solutions to problems that, in terms of underlying economic conditions, were on their way to a solution. Take the case of the U.S. auto industry. "Temporary" and "voluntary" export quotas were agreed upon in 1981 specifically to buy time in which the U.S. industry might make adjustments during a period of short-term cyclical recession. Assuming management and labor were really able to make better cars (in terms of quality, price, and overall consumer preferences), continued quantitative restrictions on Japanese automobile exports, let alone the more intense protectionism represented by the proposed local content legislation, would actually tend to work against the U.S. industry's making further improvements. Such protection would tend to drive auto prices up for both domestically-produced and imported cars; in so doing, the restrictions would make U.S. auto workers less inclined to accept wage restraints, perhaps in exchange for job security, and U.S. auto-industry managers less inclined to design cost-reducing production processes. Yet members of Congress might well want to maintain existing quantitative restrictions or impose new barriers precisely because they were a highly visible—if also economically counterproductive—way of dealing with their particular political problems.

In light of such differences between economic and political trends in the relations between countries, we feel that the more productive approach is to look first at underlying economic conditions and then move subsequently to a consideration of political issues. Since political issues are usually more subjective and volatile than economic issues, it is more

[1]Serious ambiguities in the relationship between an overwhelmingly powerful country and even a moderately powerful ally were the basis for Herman Kahn's distinction between a "superpower" and "superstate." See Kahn, op. cit., in which he defined a "superstate" as a country with great size and capabilities—particularly economic, financial, and technological— but one that stops short of being a "superpower" capable of defending itself, exerting political influence over other countries, and initiating and controlling great events. By this definition, there are only two "superpowers"—the U.S. and the Soviet Union. Japan, because of a global outlook stemming from its already large and ever growing economy, is more of a "superstate" than West Germany, France, or Britain, even though the latter two are stronger than Japan in military terms. On the other hand, China, in spite of its low level of per capita income, probably qualifies as something between a "superpower" and a "superstate" because of its geographical size, large population, and a demonstrated ability to convert its potential power and moral authority into actual or at least perceived power.

Figure II-5

U.S.-JAPAN BILATERAL TRADE AND EXCHANGE RATES: 1961-81



SOURCE: INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, VARIOUS ISSUES, AND IDEM, DIRECTION OF TRADE, VARIOUS ISSUES.

effective to try first to clarify the relatively more objective economic trends, and then to devise political solutions in light of these economic trends; this is in lieu of trying to devise economically sound solutions to basically political problems. Moreover, in looking at economic trends, we attempt to sort out the effects of the main short-term cyclical factors from longer-term structural factors.

a. Cyclical Factors

Slow growth in Japan impedes an improvement in bilateral relations by holding imports down, stimulating the export of inventories by highly-leveraged firms, and seriously constraining government policy flexibility. Both the U.S. and Japan are likely to experience business cycle recoveries in the near term, but the U.S. recovery will probably occur first and be more vigorous, at least initially.

The main implication of this likelihood for bilateral relations is that the U.S. trade deficit with Japan will worsen as economic growth draws in imports, while export growth will remain relatively stagnant as a result of slow growth in Japan and other major trading partners. Exchange rate trends are also likely to hold down U.S. exports while stimulating Japanese exports. High U.S. interest rates and newly-released demand for foreign assets by Japanese investors have weakened the yen, relative to the dollar, at a time when Japan's trade and current account surpluses would normally lead to a strengthening of the yen. Indeed, even if the bilateral exchange rate moved overnight to a more "correct" level, i.e., a higher yen, the residual effects of the previously low value of the yen will still be felt on transactions—and thus on the trade balance—for at least another 18 months. Yet monetary trends suggest that it is highly unlikely that the exchange rate will move to a seemingly "correct" level any time soon.

This combination of leads-and-lags in business cycle conditions and the lagged exchange rate effects suggest that for the next 1-2 years the bilateral U.S.-Japanese imbalance on merchandise trade is likely to worsen, under almost any circumstances. In fact, there is almost nothing that can be done to avoid this deterioration, with the exception of something as dramatic as exporting Alaskan oil to Japan. In time, say 2-5 years out, these cyclical trends will almost certainly move the trade balance toward an equilibrium, although also very likely somewhat overshooting initially.

The large swings in the bilateral trade balance and the exchange rate shown in Figure II-5 need not be repeated. In our view, they resulted from specific shocks and instabilities in the global economy of the 1970s. Changes in the international financial system beginning in 1971 and culminating in the introduction of floating exchange rates in 1973 permitted these events to trigger large, self-generating cyclical changes in the U.S.-Japanese bilateral merchandise trade balance and exchange rate. Abstracting from these shocks, the cyclical forces appeared to move as follows: when Japan's trade surplus rose to a considerably higher level, as a percent of total Japan-U.S. trade, the value of the yen subsequently rose as well. With a stronger yen then increasing the price of Japanese exports, the trade surplus declined, and subsequently the yen also fell, at which point the cycle repeated itself. These cyclical forces are consistent with economic theory, but a question remains whether such a cycle will repeat itself, since currency values now appear to depend less on merchandise trade movements alone than on a combination of trade movements, present and expected underlying inflation rates, relative interest rates, and current account movements. At the time of the two oil shocks, it may be that the trade balance effects of these shocks were so large that in those years they dominated all other forces. For example, the 1981 U.S.-Japan data are "off cycle," in the sense that the yen strengthened in a year when it was already strong, while Japan's merchandise trade surplus also increased, both in absolute terms and as a percentage of total bilateral trade.

The practical question, from the viewpoint of overall U.S.-Japanese relations, is whether political relations are strong enough to tolerate a prospective worsening of bilateral trade balances in the short term. Before looking at this question, however, we turn to a consideration of structural trends.

b. Structural Trends

On balance, structural trends seem likely to bring about an improvement in bilateral economic relations, if not in the short-term, then at least over the medium-term. Under this projection, two years from now both cyclical and structural trends will be working to improve bilateral U.S.-Japanese economic relations.

The most important structural trend influencing U.S.-Japanese economic relations is changing comparative advantage. Production in both countries is moving increasingly toward higher technology manufactured goods and toward an increasing share of services in economic activity. In general, Japan lags the U.S. in this shift, and the U.S. has a comparative advantage in many of the industries leading the shift, most notably in a variety of services—especially financial services. In terms of manufactured goods, the U.S. and Japan are, and will continue to be, directly competitive across a range of high-technology goods.

In the process of change discussed above, Japan will move toward the more typical horizontal, "intra-industry" trading pattern that characterizes trade among other industrial countries—most notably within Western Europe—but also in European-U.S. trade. Without question this evolution will be slow, but the efficiency gains from such a shift will become increasingly important to Japan. Opening the country to increased imports of manufactured goods

will pass more of the gains of economic growth on to consumers—through lower prices—particularly in the face of the anticipated more sluggish growth of real disposable incomes. Increased imports will also be needed to hold down the cost of inputs to Japanese producers. Once Japanese producers become convinced that greater imports of manufactured goods are in their own best interest, markets will open rapidly. However, large increases in the volume of U.S.-Japanese trade along a more horizontal pattern will only occur later in the decade.[1]

Economic frictions also reflect profound differences in institutions and values between Japan and the other, predominantly Western, advanced industrial countries; these are, in turn, a result of Japan's later development. As noted above, Japanese sought for many years to catch up to the West in terms of a stream of income; having more or less done this, the next goal is to catch up in terms of a stock of wealth as well. As this process unfolds, many, if not most, Japanese would be pleased with a change in emphasis, toward more consumption for the present as against investment for the future—in effect, to live better.

In time, as we have noted above, exchange rate changes, changes in consumer tastes, changes in production costs, reductions in both formal and informal trade barriers, and in general, a whole variety of changes in comparative advantage will work to increase allocative efficiency, which in turn should ameliorate the frictions between Japan and the U.S. But such long-term adjustment processes, however elegantly they may operate in theory (and in time in practice as well), normally do not operate well enough to satisfy U.S. politicians (or those in any democratic country), who have much shorter-term political cycles against which they are measuring their own self-interest.

c. Policy Outlook

There has always been room for Japan to take more policy initiatives to promote smoother bilateral economic relations. However, Japanese political leaders have generally been unwilling to take such initiatives. Indeed, the Japanese government has almost always required external pressure, either political or economic, real or contrived, to institute major policy changes. The U.S., too, is taking time to adjust to a world in which its major allies act increasingly independently.

Japan's independence has so far been manifested not in the kind of explicit steps that France took under President DeGaulle (e.g., withdrawing its military forces from NATO while remaining within the broad political bounds of the alliance), but rather in an implicit and altogether pragmatic calculation of its own interests in a narrow sense and a correspondingly implicit assumption that the U.S. will do the same. The Japanese are fully prepared to cooperate with U.S. actions if such cooperation is perceived by them to be in their own interest as well. Japanese will not go out of their way to help the U.S. help itself, but they also will not go out of their way to prevent the U.S. from doing so.

Thus, we see ahead a period of increasing economic friction between the U.S. and Japan lasting at least a year, possibly longer. However, a combination of cyclical and structural changes are likely to improve bilateral economic relations in the medium-term, and thus provide a basis for improved political relations. Indeed, the benefits of the U.S.-Japan relationship to both sides are so large that it is hard to see how short-term economic differences, however great, would undermine the relationship as a whole. Pressures for compromise on both sides are great, and in time we expect these to prevent hasty, self-destructive actions in either country.

E. Conclusions and Implications

The success or failure of Japanese industrial development policies, and their implications for U.S. trade and investment, can only be evaluated in the context of the economic and political conditions in which they take place. This long and rather complex chapter was structured specifically to describe this context. We do not attempt here to summarize all the main points of this chapter—which itself is a summary. Rather, we discuss certain points that we think are particularly relevant for evaluating Japanese industrial development policies.

To state the obvious, Japan has been extraordinarily successful in achieving economic progress. Even since 1973, relative to other advanced industrial countries, Japan's economy has performed extremely well. Many scholars have identified various proximate causes of Japan's success, but we argue that no one, including ourselves, understands exactly why Japan's extraordinary record of economic growth actually occurred—i.e., the causes behind the causes. We do believe there was no single cause of success, let alone some grand conspiracy centered on a series of industrial development policies promulgated by the government. Rather, Japanese economic success reflects a complex interaction of historical trends, ambition, hard work, good luck, and reasonably effective public policy (of which industrial development policy is only one part); each of these factors played a key role.

[1]Recent growth in direct investment of Japanese firms into the U.S. and the growth, though much slower, of direct investment of U.S. firms into Japan will also contribute to this shift. Data on U.S. and European trade flows clearly indicate that a large fraction of manufactured goods trade represents intra-firm trade, i.e., one division or subsidiary of a multinational dealing with the parent company or another division or subsidiary of the same multinational.

Focusing specifically on government policy, we find several characteristics particularly important. First, the total size of government was kept small and reasonably efficient, at least through the early 1970s, by a serious commitment to balanced budgets and a commitment to keep the tax burden no higher than 20 percent of GDP. Secondly, Japan maintained a strong commitment to economic growth—against which all other goals were weighed. Finally, relatively small-scale policies (in terms of the absolute cost to the budget, size of subsidies to specific sectors, etc.) were applied with great success, largely because these various policies were by and large working in the same direction. Even when conflicts among different policies become unavoidable—e.g., monetary restraint at business cycle peaks or the imposition of pollution control regulations, both of which impeded growth in the short term—great care was taken to minimize the negative effects on high-priority industries and activities.

During the 1970s Japan has, and increasingly in the 1980s Japan will, come to face many of the same kinds of problems, policy dilemmas, and political constraints that the other advanced industrial countries have already encountered. Two of the more important of these include the need to disinvest in several uncompetitive industries simultaneously and conflicts between policy goals (e.g., infrastructure development vs. reduction of budget deficits, or low interest rates to stimulate investment vs. high rates to strengthen the exchange rate). Moreover, the goals of Japanese society on a whole are becoming much more heterogeneous, compared to the era when catching up to the West in terms of per capita income dominated all other goals.

A signal characteristic of Japanese economic success—and one that has contributed significantly to specific bilateral and multilateral trade frictions—has been a concentration of effort in a limited number of product areas and export markets. We believe Japan's export successes will continue to be characterized by such concentrations for the foreseeable future. However, the levels of tension reached in the past and the prospective levels of tension that could be reached in the future reflect macroeconomic trends as well as various industry-specific problems. In an important sense, the industry-specific problems are typically brought to a head by more general adverse conditions. For example, there is a strong correlation between a sharp increase in U.S.-Japan frictions over specific industries and the periods when the overall bilateral trade balance moved sharply against the U.S. Typically, this correlation has in turn reflected large swings in exchange rates and divergent business cycles in the two countries, as well as different responses to global shocks.

Since the late 1960s, Japan has faced many political pressures to open its economy. It has responded to these pressures with varying degrees of liberalization, yielding the greatest gains only since the mid-1970s. Global economic difficulties have impeded both the ability and willingness of foreign firms to take advantage of these changes, as well as the actual implementation of the changes themselves. Given the relative competitiveness of various U.S. and Japanese industries at the moment, as well as the current level of the yen/dollar exchange rate and the likely paths of cyclical recovery in both countries, many bilateral economic problems are intractable in the short-term. Only over the medium- to long-term can one expect to see significant economic gains from adjustments based on market conditions and/or past liberalization programs and those that might emerge from current or forthcoming trade negotiations.

This intractability in bilateral economic relations in the short-term, assuming it to be an accurate forecast, has important implications for U.S. negotiating strategy vis-a-vis Japan: (1) genuine economic solutions will not emerge immediately, even in the wake of brilliant political or negotiating successes; to expect large, immediate trade gains from bilateral discussions will only lead to disappointment; (2) political leverage should be applied most to Japan's remaining trade barriers and other impediments that offer the greatest potential gains over the longer term; and (3) where possible, U.S. negotiators should seek gains that take advantage of a combination of favorable cyclical and structural trends that in turn would strengthen the economic and political gains to both sides.

CHAPTER III

Japanese Industrial Development Policies: Past and Present

The previous chapter tried to describe the record of Japanese economic development and prospects for future development, including Japan's interaction with the rest of the world, particularly the U.S. In this chapter, we try to present a general outline of past and present Japanese industrial development policies, together with some projections about the likely directions that future policies might take. It is important to emphasize, in such discussions, a distinction between industrial development itself and industrial development policies. These phenomena are often assumed, inaccurately, to be one and the same, particularly with regard to Japan.

Industrial development, as we use the term, is a specific aspect of the more general subject of economic development. Industrial development, in the sense used here, refers to an ever-changing mix of activities on the production side of an economy. Typically, as an economy develops (i.e., as its output or income per capita increases over time), the kinds of activities that are engaged in change as well, and in broadly similar patterns across countries. This process has been described and analyzed in a large body of literature on long-term economic growth, and can be summarized with a brief reference to the by-now classical characterization of industrial development as a shift of resources, both in terms of output and employment, from agriculture to manufacturing to services.[1] This process is more a relative than an absolute shift. As economies develop, they do not necessarily produce less agricultural or manufacturing output. In fact, those economies that are particularly well-suited to one or the other of these activities typically produce more such output in absolute terms, but—and this is the key point—they do so with much less input of labor. This change in circumstances is made possible by the application of increasing amounts of capital and technology, relative to the past, leading to productivity improvements, which lead in turn to an economy's being able to undertake many new activities in addition to or instead of the activities previously undertaken.[2]

If the above description seems straightforward or even obvious, all the better, since there seems to us to be considerable confusion as to the meaning of industrial development. Industrial development is often used to refer only to the growth of manufacturing industries, and not to a broader progression through many kinds of economic activities. In effect, industry and manufacturing are often considered synonymous. Thus, when people talk about industrial development, they are often referring to the progression from a primarily agricultural to a primarily manufacturing economy, but no further. In fact, equating industrial development with the growth of manufacturing industries is an accurate reading of economic development in the more advanced countries only up to roughly the early 1950s (though it still remains accurate for many of the world's poorer countries). At that point in the history of the more advanced economies, services began to overtake manufacturing, as a percent of both output and employment. By the mid-1970s, service industries began to be seen as frontier sectors of the more advanced economies, and thus of the overall process of industrial development.

In other words, the term industrial development, as used in this report, refers to a continuing process that is likely to continue indefinitely, with still further shifts expected in the kinds of activities under-

[1] See, for example, Colin Clark, *The Conditions of Economic Progress* 3rd ed., (New York: St. Martin's Press, 1957), and Simon Kuznets, *Modern Economic Growth: Rate, Structure, and Spread* (New Haven, CT: Yale University Press, 1966).

[2] The increased capital and technology applied to a production process is usually so effective that the real (i.e., inflation-adjusted) price of the product in question declines over time. Meanwhile, the surplus labor does not stand idle. Rather, with some exceptions, it shifts to higher productivity (and therefore usually higher paying) work. Indeed, this shift of labor is normally viewed as one of the major contributions of economic growth to society, or human progress, in general. The most obvious exceptions to this process are older workers who are difficult to retrain.

taken in both the manufacturing and the services sectors of highly developed economies.[1] The once accurate emphasis on the manufacturing sector as the most important indicator of economic development is thus losing its relevance for highly developed economies such as the U.S. and Japan, as they lose comparative advantage in basic manufacturing industries and either need or want to shift their frontier activities to higher technology manufacturing and to highly paid services. Industrial development, then, is not to be equated with manufacturing sector growth; it includes services as well, and for the more advanced economies, increasingly so.

By implication, the term industrial development policy refers to attempts by governments to accelerate or otherwise influence the process of industrial development. Where the term might have once referred to policies designed to promote manufacturing industries, in the future it is likely to refer to policies designed to promote service industries at least as much as manufacturing, if not more so. The term industrial policy, though sometimes used in a technical sense to refer to an even broader range of policies, can for all practical purposes be used interchangeably with industrial development policy. Other than in the general sense of a term used to describe attempts by government to influence the process of industrial development, the terms industrial development policy and industrial policy have actually been rather loosely defined, in the sense of being used by different authors and governments in many different ways.[2] In this study, we define industrial development policy (and industrial policy) in the narrow sense already implied above: the specific use of available policy instruments for purposes of fostering growth or rationalization in particular sectors, industries, or firms. We define trade policy similarly narrowly: the specific use of policy instruments to affect the flow of goods and services across national boundaries. The two are inextricably linked, of course, all the more so in an economy like Japan's, where, relative to the U.S., the government has pursued active industrial and trade policies in the sense of selecting (or strongly influencing) which industries to promote.

Japanese industrial development policy, like Japanese industrial development itself, has always been subject to change. Indeed, economic growth brings change as a matter of course. For Japan, which experienced the most rapid rate of economic growth in world history for a 25-year period, this process brought with it considerable change in industrial structure and, correspondingly, in industrial development policies as well.[3] The kinds of economic activ-

[1] With regard to manufacturing activities, there is considerable data already on record to suggest that highly developed economies are likely to shift increasingly toward higher technology manufacturing, while leaving basic, or assembly line, manufacturing activities to middle-income countries, e.g., Brazil, South Korea, or Taiwan, and eventually other countries as well. Correspondingly, the service sectors of highly developed economies are likely to change to higher value-added activities, relative to the past, e.g., fewer bank tellers and more financial consultants. Interestingly, the shares of output and employment of the manufacturing and service sectors are not likely to change that much, relative to the shares they have come to occupy in recent years. But the quality of the activities in both these sectors is likely to change considerably, and it is this change—which, in many ways, is also a change in what people typically perceive to be a "natural" economic structure—that seems to us not to have been well enough understood.

[2] The OECD defines industrial policy by referring to its purpose: "The main purpose of industrial policy instruments is to permit the transfer of resources between the State and industry in order to achieve specific objectives." More specifically, "Industrial policy instruments are the means used by the public authorities to influence the behavior of enterprises in relation to targets fixed, in some cases, as part of a given strategy. These instruments are intended above all to influence either the profitability prospects of investment or operating conditions in enterprises by transferring financial costs or resources." *Selected Industrial Policy Instruments: Objectives and Scope* (Paris: Organisation for Economic Co-operation and Development, 1978), pp. 7-8. Industrial policy by this definition incorporates many traditional areas of policy such as: (1) competition policy; (2) technology policy; (3) regional policy; (4) adjustment policy; (5) environmental policy; health and safety regulations; and other policies aimed at improving non-economic aspects of lifestyles; (6) other social policies; (7) commercial policy; and (8) national security policy. Indeed, even macro-economic policies to stimulate investment also fit this OECD definition. Overlapping policy objectives and the problems they create are addressed in Irving Leveson and Jimmy W. Wheeler, eds., op. cit., passim.

[3] Chalmers Johnson, in his extensive work on the history of MITI, distinguishes between economies that are "market-rational," where "efficiency" in the sense of achieving a certain output with a minimum expenditure of inputs (or the maximum possible output for a fixed quantity of inputs), is the main criterion of decision-making, and economies that are "plan-rational," where "effectiveness," in the sense of achieving certain specified objectives without necessarily seeking an economy of resources in achieving these objectives, is the main criterion of decision-making. Johnson considers Japan and other late developing countries to be plan-rational, and he sees the government in such states as naturally taking a more active, developmental role than in countries that developed earlier. Carrying the point a step further, Johnson argues that in a market-rational economy, the state concerns itself mainly with regulating the ground rules within which economic activities take place, without trying to direct which economic activities might be undertaken. In a plan-rational economy, on the other hand, a key role of the state is to direct what economic activities are best engaged in. Obviously, the plan-rational state is more likely to have an industrial development policy—indeed, as Johnson notes, to give such policy "the greatest precedence." By contrast, "the market-rational state usually will not even have an industrial policy (or, at any rate, will not recognize it as such)." Thus, in Johnson's classification system, the U.S. today is a good example of a market-rational economy, and Japan today is a good example of a plan-rational economy. See Johnson, *MITI and the Japanese Miracle*, op. cit., pp. 18-19.

ity and government policies that were appropriate for a period of recovery from war, such as direct administrative control over the use of scarce foreign exchange earnings, quite naturally became inappropriate as this period gradually faded away. Trade and investment policies designed for "infant industries" became unjustified and to a large extent counterproductive, once such industries succeeded in establishing an initial degree of competitiveness in world markets. In 1964, when Japan, with U.S. sponsorship, was admitted to membership in the OECD—with the specific implication that it was joining the ranks of the advanced industrial countries—the Japanese government was thereby committed to follow the same policies of (relatively) free trade and investment that already prevailed among other OECD countries.[1] Meanwhile, continuing changes in world market conditions—most notably high global growth in the 1950s and 1960s, increases in energy prices in 1973-74 and again in 1979-80, and the growing importance of the so-called Newly Industrializing Countries (NICs) in the late 1970s—have brought with them significant changes in Japan's comparative advantage. This has become particularly evident in the last five years, with the much-increased need for new policies to deal with declining as well as advancing industries. In other words, Japan's industrial development itself and government policies contributing to that development have both been tied to specific conditions dominating the economic environment of the time.

Accordingly, this chapter presents a general description of how postwar Japanese industrial development policies have changed over time, followed by a description of how current policies reflect the entry of new government ministries and pressure groups into the policy-making process. The chapter concludes with some speculation on future trends in industrial development policy.

A. Historical Evolution of Japanese Industrial Development Policies

Broadly speaking, Japanese government intervention in the economy, for purposes of promoting industrial development, has declined as the economy itself has grown, while government intervention for other reasons—most notably, the promotion of social welfare goals—has increased over time. As the economy has grown, Japanese society as a whole has adopted new goals in addition to the traditionally dominant postwar goal of economic growth, e.g., protection of the environment, increased leisure time, and better health care. Thus the Japanese government has either stepped in, or been forced to step in, to promote such goals in much the same way that this shift occurred earlier in other advanced industrial countries.

1. Revival of Basic Manufacturing Industries: 1945-1965

The process of promoting growth began, in one sense, as soon as the war had ended, and was considerably accelerated in 1948-49, when U.S. occupation policy shifted from one of trying to limit Japan's re-emergence as a major power to one that deliberately sought to foster such re-emergence as a counterweight to the newly perceived threat represented by the Soviet Union and the transformation of China from an ally under a Nationalist government to an adversary under the new Communist government. By 1949, occupation policy on Japanese trade and industrial development had shifted completely to one of promoting both as quickly as possible.

The Ministry of International Trade and Industry (MITI) was formed in 1949 as an amalgamation of the Ministry of Commerce and Industry and an occupation-organized Board of Trade. MITI became the principal architect of industrial development policies which, generally speaking, have adhered closely to traditionally Japanese concepts of economic organization going back to the prewar and even Meiji periods. These policies fit the pattern of what Johnson refers to as a plan-rational economy, in which the government could and did influence both the kinds of products to be produced and the levels of production.[2] Earlier efforts at modernization, going back to the Meiji era, were heavily influenced by a small number of explicitly political goals, e.g., to prevent Japan from being taken over or dominated by foreign countries, a seemingly all too likely prospect in the mid-19th century. In Japanese eyes, modernization was not limited to the concept of economic growth as defined by Simon Kuznets, meaning simply "sustained increases in product per capita."[3] Rather, it was—and still is—associated with a much broader concept of "national strength," which includes military strength, eco-

[1] Japan had declared Article 11 status in the GATT in 1963; this involved a commitment to remove certain export subsidies and foreign exchange allocations. Japan shifted from Article 14 to Article 8 status in the International Monetary Fund in 1964, a step that required it to end controls on foreign exchange used for current account transactions and restrictions on yen convertibility by nonresidents. These steps were followed in 1967 by a phased program of liberalization of capital account transactions.

[2] See footnote 3 on the preceding page, and for still more details, see Johnson, *MITI and the Japanese Miracle*, op. cit., passim.

[3] Simon Kuznets, op. cit., p. 1.

nomic strength, social stability, and, as a result, political strength.[1]

For this purpose, basic manufacturing industries were essential. Thus, the main goal of the early postwar years, at once both simple and elegant, was to revive and expand Japan's basic manufacturing industries, and do so in a way that would produce goods for export, which would, in turn, earn the foreign exchange required to develop the next, more sophisticated step in the manufacturing cycle. Moreover, Japan's lack of natural resources (or large tracts of arable land) meant that, at least until recently, its comparative advantage for purposes of economic development almost certainly lay in manufactured goods.

One may reasonably doubt that Meiji leaders consciously thought in terms of comparative advantage as defined in international trade theory, or even that the early postwar leaders thought in these terms. Their motivation, as noted above, was probably closer to the broader idea of "national strength." But as Japanese exports of manufactured goods became and remained continually successful in world markets, the success that these exports achieved gradually led to the now widely-held view that the country's comparative advantage lay overwhelmingly in basic manufactured goods. The success stories in toys, textiles, Christmas tree lights, radios, stainless steel, hot rolled steel, ships, light trucks, heavy trucks, automobiles, industrial machinery, cameras, precision instruments, transistor radios, black-and-white television sets, color TVs, tape recorders, electronic calculators, hand-held computers, and now 64K RAMs are of course well-known. And at least some credit for these successes must be given to government policies, and particularly to MITI as the primary agency responsible for industrial development policy, though, as noted in Chapter II, there is considerable disagreement among scholars as to exactly what the role of government policy has been.

A clearly unequivocal example of the government's role in influencing industrial development was the postwar system of laws and regulations governing foreign trade. These gave officials authority to allocate foreign exchange for purchases of imports. This authority carried with it the implication that government officials could and would decide, based on their interpretation of the national interest, which particular activities (or, in some cases no doubt, which particular firms) deserved highest priority. This they did forcefully, particularly in the early postwar years. As Krause and Sekiguchi describe MITI's role in those days:

> The MITI had to approve, on a case-by-case basis, any foreign trade transaction that was not to be based on the standard method [of payment]. Thus, the MITI became intimately involved in business decisions from its beginning and was able to evolve into a very powerful ministry.[2]

They also note that under the "standard method of payment," export transactions were treated more generously than imports, financial resources were directed toward tradeable goods and thus away from goods only for domestic consumption, and imports were limited to allegedly essential goods; indeed, financial preferences for foreign trade, in the form of lower interest rates, were not completely eliminated until August 1971.

At the same time, as also noted in Chapter II, new Japanese products were not developed exclusively for export. In almost every case, a domestic market was developed first, giving producers long production runs through which they could achieve the very economies of scale that enabled such goods to be exported at highly competitive prices. The export successes in steel, automobiles, and consumer electronics illustrate the point. To be sure, throughout the 1950s and 1960s, Japanese manufacturers were able to build such a domestic market in part because competition from imports hardly existed. Indeed, government policy prevented imports of almost anything except some foods, industrial raw materials, or capital goods not (yet) manufactured in Japan. Typically, intermediate goods for the producing sector were licensed for import with little difficulty; consumer imports, however, were almost nonexistent. The self-abnegation of Japanese consumers, at least during the first 20-25 years of the postwar period, was supported by the limited contact that individual Japanese had with foreign markets and by the considerable satisfaction that Japanese consumers could obtain anyway through the rapid growth of real disposable income. In effect, any increased expectations that individual Japanese might have felt during this period were being more than fully met by the growth and variety of domestically-produced consumer goods. Meanwhile, prospective exporters from other countries generally did not see a market in Japan, or if they accepted that a market existed in principle, either did not take seriously the idea of

[1]The prewar term *kokuryoku* (literally "national strength") now has a harsh ring to it, reminding people of wartime excesses, and as such is no longer used. In effect, the notion of economic growth replaced *kokuryoku* after the war as a basic national goal. Within the past five years, as more of the earlier postwar taboos against Japanese interest in national defense weakened, a new term—*sōgō anzen hoshō*, literally "comprehensive security"—has come into use. The new term incorporates the orthodox idea of national defense, but in a way that de-emphasizes a narrow, hardware-oriented (or uniformed services-oriented) approach to defense, while emphasizing the broad-based factors affecting national security, e.g., energy security, raw materials supplies, and high investment levels as a source of continued high growth and therefore also presumably domestic social and political stability as well.

[2]Krause and Sekiguchi, op. cit., p. 411.

penetrating that Japanese market or arguably were deferred from doing so by (then) high tariffs or other trade barriers. Some successes occurred, but the number was low because only a few foreign firms (e.g., at that time, Coca-Cola) had both the high liquidity required for extensive start-up costs and the necessary *long-term* view that such high start-up costs required.

Thus, whether by design or simply in fact, Japanese producers enjoyed considerable "infant industry" protection for most of the first 20 years of the postwar period. They also benefited, though clearly more as a coincidence than from any design on their part, from the most rapid period of world growth in output and trade ever recorded. In other words, Japanese manufacturers in this period enjoyed the double benefits of a large and captive domestic market and a large and growing world market. This pattern of industrial development (and attendant policies supporting the development of basic manufacturing industries) continued without interruption until the mid-1960s, or, more precisely, through 1965, when Japan's balance of merchandise trade (i.e., its exports and imports of goods) turned significantly and, to date indefinitely, positive.[1]

2. Changes in Concepts But Not Actions: 1965-73

Although any period might be described as one of transition, the years between 1965 and 1973 were clearly transitional for Japanese industrial development policy. Once Japan's balance of trade turned positive in 1965, various restrictions on imports of goods or capital became increasingly unjustified. Correspondingly, pressures for change from trading partners, most notably the U.S., became increasingly strong. On the surface, Japan did little more than fight a series of holding actions against mounting criticism of its residual trade restrictions and of the pace at which capital liberalization was scheduled to take place.[2] In fact, within the government, and particularly within MITI, the period was one of great ferment. Indeed, the ferment itself probably delayed decisive action; as a result, actual changes in industrial development or trade policy during these years were almost minimal.[3]

Public discussion of any aspect of foreign trade in Japan was—and still is—dominated by heated debates over seemingly minor matters, often made "major" by sensational treatment in the press, which in turn was often encouraged by Japanese negotiators hoping to shore up their position. In a once-famous case from the 1965-73 period, a U.S. request that American farmers be allowed to export grapefruits to Japan was met with such counter-arguments as (1) Japanese would not like grapefruits; (2) Japanese tangerine sales (and farmers) would be drastically affected, which even might upset the social stability of rural constituencies, on which the ruling Liberal-Democratic party depended, and perhaps even contribute to Communist party victories; and (3) the ever-invoked general plea that Japan was merely a "small, island country with few natural resources," making what headway it could in a cold, cruel world. Advocates of such a response did suggest at

[1] There were small surpluses in earlier years, but a trend was established after 1965.

[2] A program for capital liberalization in stages was introduced in 1967. In itself, the idea of a gradual liberalization was completely consistent with established practice, both internationally and within any developed country in which immediate (i.e., non-gradual) changes in the regulatory environment would be deemed arbitrary. Criticism of the pace of Japan's capital liberalization program mounted in large part because Japan's trade surpluses, particularly with the U.S., were also mounting. The capital liberalization program became a partial scapegoat for the inability of other countries, for whatever reasons, to sell more goods to Japan. Norman Macrae of *The Economist* noticed as early as May 1967, before the capital liberalization program was even officially unveiled, that it would hardly constitute an opening of floodgates to foreign investment. As he noted in a special survey article, when he asked a MITI official in which industries foreigners might hope to set up wholly-owned subsidiaries, he was jokingly told that *geta*, or Japanese-style wooden clogs, might qualify. In a more serious vein, Macrae went on to conclude that the "first list for so-called capital liberalization is likely to be restricted to industries in which Japanese companies are already so strong, or else in which the Japanese market is already so over-supplied, that only a foreign lunatic would set up a new venture" (See Norman Macrae, "The Risen Sun," *The Economist*, May 27, 1967, p. xxvii). In these years between 1965 and 1973, foreign government officials often spoke with great bitterness about Japan's capital liberalization program, as though they had somehow been misinformed about its provisions or schedule. More likely, they had failed to understand it as well as Macrae did, and were then naturally reluctant to blame themselves for problems that were more expediently blamed on the Japanese government. Of course the possibility that such a negative political reaction would arise was a risk the Japanese government took in devising the limited program it did.

[3] For details on the ferment within MITI, see Johnson, *MITI and the Japanese Miracle*, op. cit., especially Chapter VIII. Not surprisingly, various active and retired MITI officials have cautioned against accepting Johnson's interpretations of intra-MITI disputes as necessarily correct. Johnson acknowledges in his introduction the assistance of one official, Hiroshi Yokokawa, whom he credits with having made many contributions to a seminar Johnson held at the University of California in 1978-79, when Yokokawa was on leave and studying there. Of Yokokawa's assistance, a senior MITI official said recently, "His opinions are only those of himself." According to several sources, MITI has underway a project to translate Johnson's book into Japanese, combining the translation with a commentary. One source predicted that the commentary would exceed the length of the book.

times that a few grapefruits might be admitted as a sign of "sincerity," with the understanding, of course, that for the reasons given above, no great numbers could be considered for some years hence. In retrospect, such arguments—on grapefruits and many other issues—were clearly not as unanimous as outsiders often imagined them to be, and probably not even unanimous within whatever ministry had jurisdiction over the item in question. However, they were typical of discussions in those days—and still occur periodically.[1]

In this atmosphere, U.S. (and to a lesser extent, other OECD) representatives became increasingly frustrated. They saw little progress in efforts to break into the Japanese market—a task that in any event they felt Japanese should facilitate. They also had little luck in various attempts to secure Japanese government support for export quotas, e.g., on textile shipments to the U.S.[2] The end to this combination of simmering friction and frustration between Japan and its trading partners was signaled by a series of external shocks to the economy, beginning with actions President Nixon took in August 1971 to break the U.S. dollar link to gold and levy an across-the-board 10 percent surcharge on imports. These actions, like the Japanese export successes cited above, are too well-known to require much discussion here. The effect, in any case, was to raise the value of the yen (and the mark), relative to the dollar. This was followed, in October, by the U.S.'s forcing through a textile agreement by threatening to impose the same restrictions on Japan unilaterally. The Smithsonian currency agreement of December 1971, reached in response to the Administration's August measures, broke down in February 1973, and led to a system of floating exchange rates. Thus, Japan was forced to make significant economic adjustments, albeit largely through unilateral U.S. measures, which were then followed by elaborate efforts to repair the political damage these unilateral U.S. measures had done to relations with Western Europe and Japan.

Throughout this period, as noted above, MITI was in the midst of a major debate on the future direction of the Japanese economy and its own role in that future. Already in 1970, the *Asahi Shimbun* had launched its *kutabare GNP* (down with GNP) campaign, and the sarcastic slogan "Gross National Pollution" had gained much public appeal. The public began to criticize MITI for serving the interests of business rather than the public as a whole. In general, a reaction against economic growth as a primary goal (and against basic manufacturing industries as an unqualified benefit to the economy) seemed to grow as rapidly as the economy itself had been growing. MITI tried to respond to these criticisms with programs to rectify complaints and to give itself a role in the suddenly important field of environmental protection.[3] MITI was also reorganized during this period to introduce so-called horizontal bureaus onto the traditionally powerful so-called vertical, or industry-by-industry, bureaus. The aim was to promote greater consistency both within MITI and among ministries.[4] More important, for the longer term at least, were the general MITI plans for industrial structure shifts away from basic manufacturing and toward so-called "knowledge-intensive" industries, meaning those with higher capital per worker, requiring (and permitting) higher skills and wages, and incidentally generating less pollution. These plans were made public in various policy papers or "visions," produced either by MITI itself, or by various public/private advisory groups, notably the Industrial Structure Council.[5]

Another version of then-current ideas within MITI evolved into an openly political document when a former MITI Minister, Kakuei Tanaka, borrowed heavily from in-house material to develop a plan for infrastructure development that he then used as part of a campaign for the Prime Ministership. This plan, *Nippon Rettō Kaizō-Ron* (literally, An Essay on the Reconstruction of the Japanese Islands),

[1] Finance Minister Michio Watanabe told a group of Japanese reporters earlier this year that the "reason we don't smoke foreign cigarettes isn't their high price; it's that they don't taste good." (See *Asahi Shimbun*, March 4, 1982, p. 9.) Under heavy criticism for "substantiating" foreign claims that Japanese were inherently biased against importing manufactured products, Watanabe suddenly switched his own preference, within two days of his earlier statement, from a Japanese to a U.S. brand.

[2] Some European countries, notably France and Italy, kept Japanese goods out altogether or held them to extremely low levels by invoking stipulated exceptions to the GATT, or, in the case of French restrictions on Japanese automobile shipments, simply through the arbitrary administration of customs regulations. The inflationary or other anti-competitive costs of this policy were obviously deemed, in the political process of these countries, to be tolerable.

[3] On the theory that environmental protection and the promotion of business should not be in the same ministry, an Environmental Agency, with cabinet rank, was established in July 1971, with the mission of coordinating the environmental protection activities of various other ministries.

[4] Again, for details, see Johnson, *MITI and the Japanese Miracle*, op. cit., Chapter VIII.

[5] Such "visions" have been produced at various times since 1963, and have generated the usual disagreements among scholars, officials, business executives, and journalists as to their importance, either in real or symbolic terms. Yoshihisa Ojimi, then administrative Vice Minister of MITI, presented what then became the most well-known such "vision" to a meeting of the OECD Industry Committee in Tokyo in June 1970. This statement was subsequently incorporated into an English-language reference, *The Industrial Policy of Japan* (Paris: Organisation of Economic Cooperation and Development, 1972).

more commonly known as "The Tanaka Plan,"[1] stirred great interest, partly because, in contrast to the *Asahi*-led critique of past policies, it took a positive approach. Thus the plan appealed to Japanese who, though perhaps disillusioned with previous policies that emphasized basic manufacturing industries almost to the exclusion of anything else, were nonetheless still strongly in favor of continued economic growth. In terms of its scope, the Tanaka plan was bold indeed. Among other things it called for a vast decentralization of manufacturing away from the overcrowded Pacific coastline, aiming thereby at a revitalization of parts of Japan that were otherwise experiencing declining populations. The plan also called for road, school, hospital, and park construction on a scale never before imagined.

Although these ideas had great appeal, and doubtless contributed to Mr. Tanaka's popularity during his early months as Prime Minister, the actual results proved disappointing—or worse. For one thing, land speculation stemming from the plan contributed to an inflationary bulge that hangs over the housing industry to this day. Alleged favoritism in contracting for numerous infrastructure development projects added to the disillusionment brought about by the inflation in land prices. The worldwide boom in commodity prices, culminating in the "oil shock" of late 1973 and the resulting worldwide recession, brought this almost unprecedented political initiative to a sudden end.

Thus, the industrial development policy process between 1965 and 1973 combined considerable ferment behind the scenes with considerable paralysis with regard to the implementation of prospective new policies. The sharp impact of both the "dollar shock" of August 1971 and the "oil shock" of late 1973 can be explained, at least in part, by the failure of the Japanese government to take appropriate actions earlier on. Paradoxically, the very occurrence of these shocks helped the Japanese government to act relatively decisively after the initial shock was absorbed. Throughout this period, much preparatory work for new policies, both within companies and within MITI, was performed; "Visions" were prepared and detailed plans drawn up. Perhaps because the range of choices was already too wide, Japan's much-vaunted consensus-building process failed to work as well as it had in earlier postwar years. Even in cases where various preparatory plans were taken off the shelf and put forward as imminent courses of action, e.g., in energy policy, many of the detailed provisions were not actually carried out until a second oil shock six years later drove home the extent of the changes in the external environment.[2]

[1] *Nippon Rettō Kaizō-Ron* (Tokyo: Nikkan Kogyo Shimbun, Ltd., 1972), translated and published in English as *Building a New Japan* (Tokyo: The Simul Press, 1973).

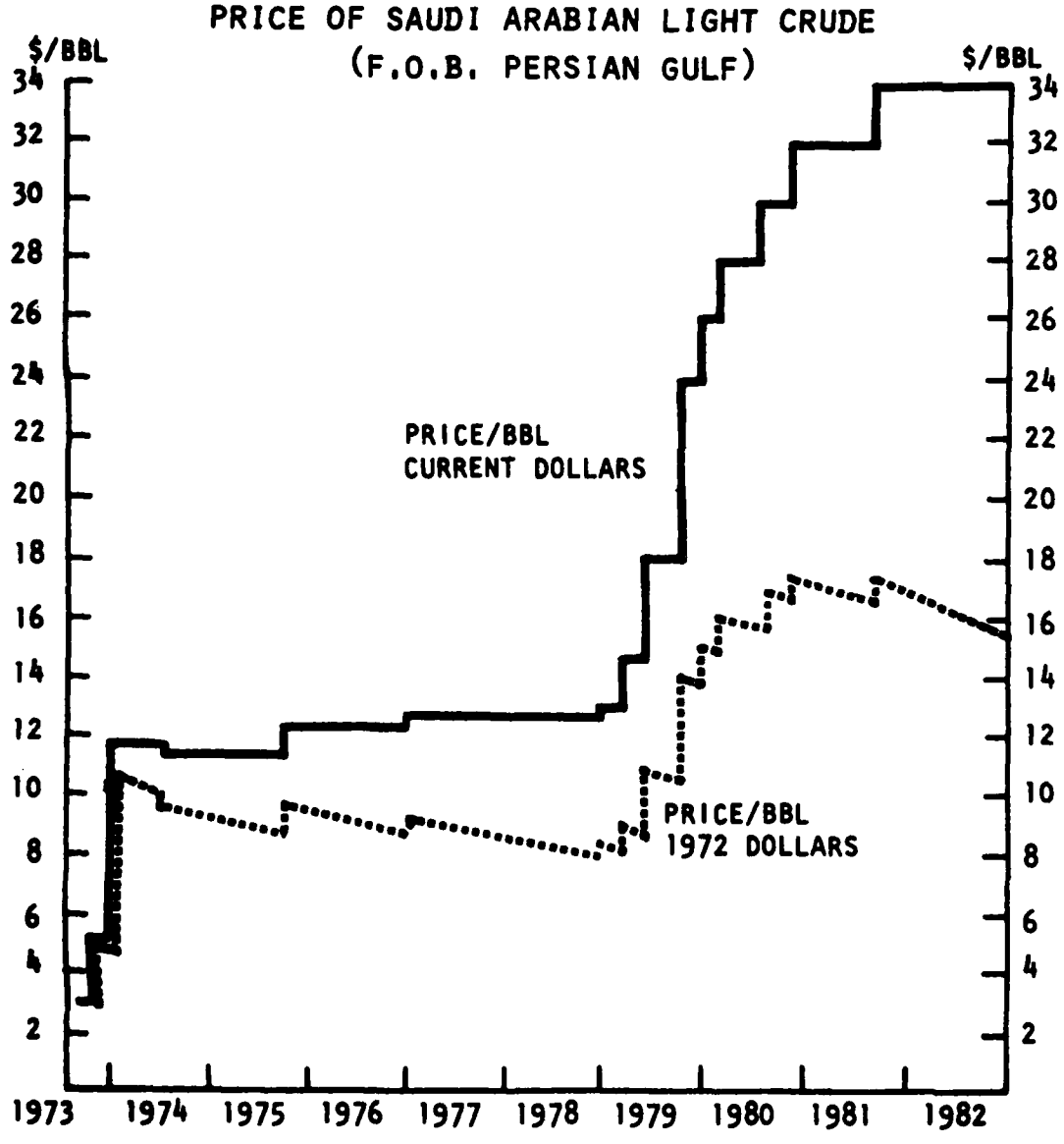
[2] Commenting on certain differences between a plan-rational economy such as Japan and a market-oriented economy such as the U.S., Johnson notes that "when a consensus exists, the plan-rational system will outperform the market-rational system on the same benchmark, such as growth of GNP, as long as growth of GNP is the goal of the plan-rational system. But when a consensus does not exist, when there is confusion or conflict over the overarching goal in a plan-rational economy, it will appear to be quite adrift, incapable of coming to grips with basic problems and unable to place responsibility for failures." He specifically cites Japan in 1971 and 1973 as experiencing exactly this kind of drift. "Generally speaking," Johnson contends, "the great strength of the plan-rational system lies in its effectiveness in dealing with routine problems, whereas the great strength of the market-rational system lies in its effectiveness in dealing with critical problems. In the latter case, the emphasis on rules, procedures, and executive responsibility helps to promote action when problems of an unfamilair or unknown magnitude arise." See Johnson, *MITI and the Japanese Miracle*, op. cit., p. 22.

3. Post-Oil Shock Adjustments: 1973-Present

As they worked their way through the economy, the increases in energy prices in 1973-74 and in 1979-80 had an effect on Japanese industrial development far greater than the policy measures taken up to that point—particularly greater than the combination of intellectual ferment and de facto inaction described in the previous section. The initial price increases were passed on to users, to a far greater degree than in the U.S., for example. Japan also clamped down hard on wage increases in 1974, and instituted a series of sweeping energy conservation measures. However, given the five-year decline in oil prices in real terms between mid-1974 and mid-1979 (see Figure III-1), it took a second round of price increases to bring about many of the actual changes in industrial structure that had been talked about for more than a decade. Specifically, energy-intensive manufacturing, such as aluminum smelting, suddenly became much less competitive (even as the handwriting had been on the wall for some years); meanwhile, new, knowledge-intensive industries, such as computers, advanced electronics, and robotics, were quickly becoming more competitive as they developed economies of scale that put them on a par with high technology industries in the U.S. The adjustments in energy use that had been successfully introduced after the first oil shock provided a strong foundation for further adjustments in many parts of the economy when this second round of price increases occurred. In this way, Japan's deflationary reaction to the outside shocks of the 1970s was sharp but brief. In contrast to the U.S. and many other OECD countries, the stagflationary legacy in Japan was much less.

However successfully Japan coped with the two oil shocks in macroeconomic terms, it still faces several problems in terms of industrial development policy—at least if currently stated goals are to be met. In particular, as more basic manufacturing in-

Figure III-1



SOURCE: PETROLEUM ECONOMIST, AS COMPILED BY W.M. BROWN.

dustries begin to lose their competitiveness (whether because of higher energy costs than prevalent in other countries, or because various NICs have developed to a point where their goods can compete effectively with Japanese goods), MITI is finding itself increasingly at a loss as to how to preserve (or simply to delay the demise of) these industries. This much is occasionally admitted even in public.[1]

A 1982 policy statement argues explicitly for subsidies to weaker industries, either in the name of national security (the term employed in the MITI statement is "economic security," but the logic of the argument makes it clear that national security in the broader sense is the criterion being used) or in the name of short-term adjustment assistance to enable an industry to survive along a path of alleged long-term viability.[2] Either argument is familiar to Americans from previous debates on proposed bailouts of Lockheed and Chrysler, the trigger price mechanism on steel, and the current restrictions on imports of Japanese automobiles, but the second is relatively new for MITI. In the past, Japanese efforts to protect industries from international competition were concentrated, naturally enough, in newly developed industries, the most notable of which in recent years has been computers and electronics, which are discussed in detail in Chapter VI. Until recently, the phasing out of basic manufacturing industries had not been a central issue in Japan, because of the high growth rates worldwide and because the country's stage of development had not yet led it to have to face the question of whether or how to phase out several basic manufacturing industries simultaneously in order to make room for newer, more high-technology industries. Now, as discussed in greater detail in Chapter VII, the difficulties encountered in trying to facilitate adjustments in the petroleum refining, petrochemical, and aluminum industries, together with a possible shift in MITI doctrine toward explicit subsidization of declining industries, suggests that still further—indeed, increasing—difficulties in the implementation of Japanese policies toward declining industries are likely to continue.

The decline in competitiveness that took place in certain Japanese manufacturing industries in the 1970s suggests that global market pressures, more than any government policies, were the decisive factor leading to their decline. But because the main market pressures of the decade appeared so suddenly, in the form of large-scale energy price increases (brought on by exceptional supply/demand conditions and relatively unpredictable political factors), the changes that took place in certain Japanese industries may seem at first glance to have stemmed from government policies of one sort or another. To the degree that the energy price increases of the 1970s were in fact more sudden than most price increases in most markets, they can be likened to the political pressures imposed on Japan by the Nixon administration in the early 1970s: both kinds of shocks originated outside Japan, and both hastened the timing of changes that would doubtless have come about eventually anyway. The basic direction of Japan's industrial structure change has long been clear; the timing and pace at which this change occurred has depended all too often on the extent to which outside "shocks" have been applied, consciously or otherwise. Thus, such "shocks" have played some role in determining Japanese industrial development policy—and, incidentally, a role that is often fostered by Japanese officials themselves, who often try to use alleged foreign pressure as a bargaining lever in their own domestic debates.[3] Nonetheless, the fact that such "shocks" can play some role in determining Japanese industrial development policy, particularly as it affects international trade, does not mean that they are the only or even the major determinants of Japanese policy or actions. Whatever the role of policy, the actual behavior of firms is determined by the overall combination of pressures on supply and demand, of which government policy is only one.

B. Increased Importance of Other Ministries and New Pressure Groups

Industrial development policy has traditionally been—and remains today—primarily the province of MITI, though other ministries have always been involved, at least indirectly. The most powerful of these has been the Ministry of Finance (MOF) through its budgetary powers over tax and spending policies of other ministries. The Economic Planning

[1] In a concluding section to a statement presented to the Industry Committee of the OECD in March of 1981, Makoto Kuroda, director-general of MITI's Research and Statistics Department, said "the smooth implementation of industrial policy is becoming increasingly difficult." See "Japanese Industrial Policy," *Japan Reporting* series, JR-4 (Tokyo: Ministry of International Trade and Industry, June 1981), p. 15.

[2] See Keiji Miyamoto, "What is Happening to Japan's Industrial Structure," *Journal of Japanese Trade and Industry*, Vol. I, No. 3, May 1982, pp. 37-46. Miyamato is identified as deputy director, Industrial Structure Division, of MITI's Industrial Policy Bureau.

[3] Recognizing this, members of the opposition parties, such as the Japan Socialist Party (JSP) or Komeito, an offshoot of the Soka Gakkai Buddhist movement, often charge that the majority Liberal-Democrats conspire with the U.S. and other foreign governments to increase political pressure in ways that are in fact designed to promote the LDP's own political aims. This argument is most pronounced in the debate over defense expenditures, where both U.S. pressure for more spending and domestic resistance to such spending are easily visible. On economic issues, it is probably more relevant to the bureaucracy than the LDP.

Agency (EPA), founded in 1955 as a coordinating body without operational responsibilities, has performed this function, but no more than this. Its many medium- and long-range plans (refer back to Table II-1) and annual white papers have usually summarized the existing consensus fairly and competently, and in so doing served as genuine references on which further discussion is based. However, the EPA has not been able—nor has it tried that hard—to play a stronger role in the sense of trying to force through changes in government policy in one direction or another. In general, the various ministries besides MITI now play a more important role in industrial development than in earlier years, for both domestic and international reasons.

Domestically, as the Japanese economy has grown wealthy enough to support multiple goals (i.e., an explicit differentiation of multiple goals, rather than the once-undifferentiated goal of economic growth), other ministries and more recently other constituencies have asserted their right to a voice in industrial development policy. For example, the MOF and the Bank of Japan (BOJ) have sought to maintain as much of their traditional regulatory role over the banking and securities industries as possible, even as international pressures are making this relatively tight control costly for the industries (and, thus, indirectly, the country as a whole). Because of this continued tight control, Japanese financial institutions have had to cede various new markets in offshore financing to counterparts in Singapore and Hong Kong.[1] Stringent administrative requirements have also impeded the development of many new innovations in financial services that have recently been introduced in the U.S. On the one hand, as Japanese industrial development moves toward the service sector, the MOF will naturally come to play a bigger role, relative to the past, in the formulation of industrial development policy; on the other hand, much of what it does in the process of formulating industrial development policy will involve deregulating the currently rigid structure of the Japanese financial services industry, as market forces make a more flexible structure essential.

The MOF also has gained power over other ministries because of the continuing pressure of a much-bloated government deficit (see Figure III-2). The need to increase revenue and reduce expenses, combined with an avowed MOF commitment to move other ministries toward the use of more general policy instruments rather than continuing specially-targeted instruments, has in any case sharply reduced the value of many once-important instruments of industrial policy. Most notably, the use of special tax measures has declined sharply since the early 1970s, as discussed below in Chapter IV.

Inter-ministerial conflict between MITI and the Ministry of Post and Telecommunications has held up the integration between computers and data processing on the one hand and data-based communications on the other. The Postal Ministry, with a tradition of working through monopoly corporations, has allowed the latter to proceed with advances in communications technology at a much slower pace than the computer industry; the latter, which is under MITI's jurisdiction, has been both able and encouraged to proceed with technological advances at a much faster pace. In fact, MITI is gradually seeking jurisdiction over data-based communications for precisely this reason; it argues that the national interest requires a faster rate of innovation, based on its own traditional formula of oligopolistic competition, than the Postal Ministry's traditions are likely to permit.

Apart from questions of ministerial jurisdiction, the increasing pluralism of Japanese society has contributed to a proliferation of competing interests in areas once overwhelmingly dominated by the producers. In tourism, for example, the traditional preference of Japan Air Lines (and its advocates in the Ministry of Transportation) for cartelized pricing on international tickets to and from Japan is coming under increased pressure, separately and together, from consumers and competing airlines.[2] Consumer and anti-pollution groups that blossomed in the early 1970s have continued to press for greater consideration of their views, and some of their demands, especially regarding environmental measures, have been met.[3] The rise of entrepreneurship, in a less capital-scarce economy than prevailed in earlier post-war years, means that MITI's policies toward small and medium-size enterprises will be under pressure to change. In the past, the term "small and medium-size enterprises" was usually synonymous with capital-short, subcontracting firms that depended for their survival on the more highly capitalized large firms, i.e., the small and medium-size enterprises were the other side of the so-called dual economy mentioned briefly in Chapter II. In the future, as opportunities increase for small and medium-size enterprises to become more innovative simply as a result of continued economic development (e.g., along the lines of Sony and Honda in earlier years), they are likely to want considerable deregulation of administrative barriers between industries—and to want such deregula-

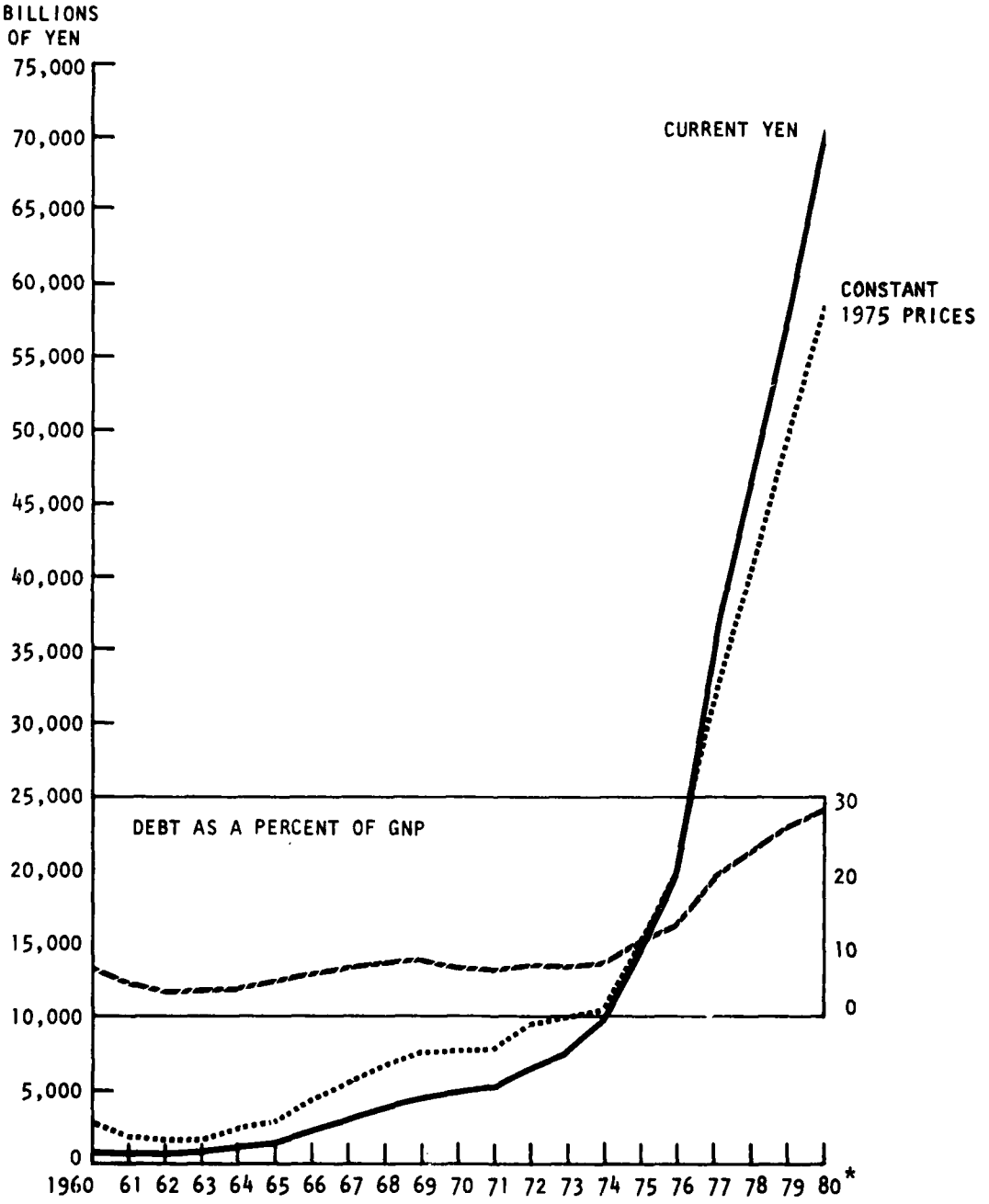
[1] There are signs recently that the MOF is beginning to discuss the implications of and the policies required to prepare for the development of a Tokyo capital market comparable to London or New York.

[2] U.S. government pressure for more competitive pricing on international air tickets has been undercut, though probably only temporarily, by the cyclical falloff in U.S. and world air traffic volume, leading in turn to a severe profits squeeze on most airline companies and contributing to the recent bankruptcy of Braniff Airlines.

[3] For more details on environmental issues, see Margaret A. McKean, "Pollution and Policymaking," in T.J. Pempel, op. cit., pp. 201-239.

Figure III-2

JAPAN:
DIRECT CENTRAL GOVERNMENT DEBT
(NOT INCLUDING LOANS GUARANTEED BY THE GOV'T)



SOURCE: INTERNATIONAL FINANCIAL STATISTICS; OECD MAIN ECONOMIC INDICATORS, HISTORICAL STATISTICS.

*ESTIMATED

tion even at the cost of receiving less subsidization from MITI than might otherwise be possible if the traditional structure of the small- and medium-size enterprise sector were to continue unchanged.[1]

International factors have also increased the importance of other ministries, relative to MITI. The Ministry of Agriculture, Forestry, and Fisheries, which has always kept a tight hold over agricultural imports, can now do so only with considerably greater visibility—and thus at considerably greater cost. In earlier years, the ministry could maintain the status quo simply by taking a low profile. Nowadays, this is no longer possible, and its typical insistence on few or no concessions to prospective exporters has led to continuing grief for MITI, the MOF, and the Ministry of Foreign Affairs, all of which have had to bear the brunt of foreign criticism of Japan's continuing barriers to agricultural imports.

The MOF itself has also been the target of foreign criticism, primarily, as mentioned above, for its continued desire to regulate the banking and securities industries with as little change as possible. This has obviously affected foreign financial institutions as well as domestic ones. The MOF's impulse to try to maintain relatively tight supervision over the pricing and diversification activities of commercial banks has also come into conflict not only with their own interest in developing an international capital market along the lines of Singapore and Hong Kong, but also with the desire of manufacturing and other nonfinancial companies freely to raise or issue capital abroad, and with a similar desire to operate manufacturing or service facilities abroad. In general, the stronger the drive toward internationalization of the economy, the more visible—and thus the more costly—the traditional MOF position has become.

As discussed below in Chapters IV and V, Japan's tax and monetary policies have contributed significantly to industrial development, but as much through their indirect as their direct effects. In the early postwar years, the consensus in favor of economic growth (and, as the main engine of growth, the development of basic manufacturing industries) was sufficiently strong to mean that tax and monetary policies worked virtually automatically in tandem with MITI's explicit industrial development goals. In the middle period of postwar industrial development policy (i.e., the years of intellectual ferment, but policy inaction), this consensus weakened significantly, and the coordination or coincidence of policies among ministries grew weaker still. More recently, as market pressures have forced increased industrial restructuring, particularly of energy-intensive manufacturing industries, and as pluralist ideas of Japan's future development have taken further hold in society at large, inter-ministerial coordination is becoming more necessary and more explicit, though of course not necessarily more harmonious.

C. The Role of Administrative Guidance

As the development of the Japanese economy itself has brought an end to various direct controls, and the increased importance of other ministries and new interest groups has led to a relative decline in MITI's position as overseer of industrial development policy, the use of a wide range of informal measures, usually subsumed under the name of "administrative guidance," has increased. However, this has not led to a corresponding increase in the effective use of administrative guidance for industrial development purposes. Increased reliance on administrative guidelines can more accurately be viewed as an indication of declining government powers. Indeed, in a number of more recently troubled areas—autos, petrochemicals, aluminum, etc.—government calls for industry patience, capacity reductions, and export restraints have been ignored or hotly contested by industry; such open resistance to government requests was extremely rare in earlier years.

Administrative guidance has a long tradition in Japanese law. It refers, in a technical sense, to the discretionary authority the executive (or, in Japanese terms, the bureaucracy) has in administering legislation. In Japan, the tradition has always been to draft extremely general language in the legislation itself, thereby leaving the bureaucracy wide latitude. Administrative guidance also refers, in a more informal sense, to suggestions that bureaucrats might make to private parties, whether or not they have specific legislative authority to make the suggestions apart the tradition is to heed such suggestions either because enabling legislation does exist (or sumably be found) to justify the particular bureaucrat was seeking to the tradition of judicial review private party is reluctant crats' authority, or both.

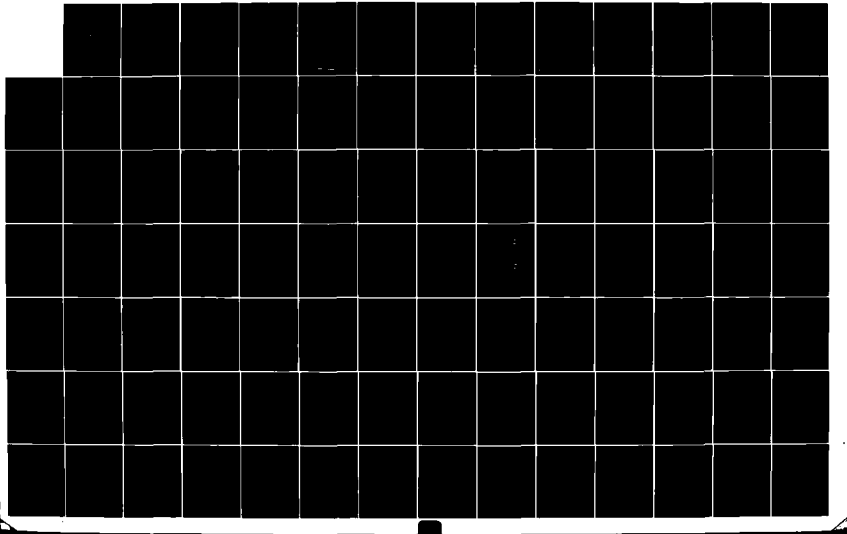
MITI's reliance instrument of indus creased as its usable

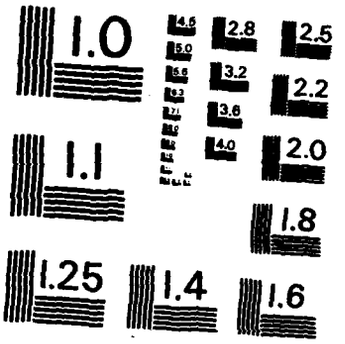
[1]The several years-long dispute between the previously-established department stores and the newly-established chain store conglomerates is an excellent example of this phenomenon. The latter's combination of distribution outlets includes U.S.-style supermarkets and franchised convenience stores (e.g., 7-11 stores, licensed to Ito-Yokado by the Southland Corporation of Dallas), and so-called "super-stores," a specific term for stores designed by Ito-Yokado to fit into a loophole between MITI's specifications, in terms of size and product mix, for department stores and those governing supermarkets. In order to be able to establish themselves, such new entrants prefer—indeed, they depend upon—their independence from MITI, from both its subsidies and its regulations.

AD-A123 349 JAPANESE INDUSTRIAL DEVELOPMENT POLICIES IN THE 1980'S: IMPLICATIONS FOR..(U) HUDSON INST INC CROTON-ON-HUDSON NY J W WHEELER ET AL. OCT 82 HI-3470-RR FAR-398-GP F/G 5/3 NL

2/3

UNCLASSIFIED





industries in particular.[1] Yet both before and after liberalization got underway, and continuing to this day, both industry and government often prefer administrative guidance precisely because it gives both sides a high degree of flexibility, relative to more formal measures that would require legal authorization or, worse yet, public scrutiny. As Chalmers Johnson points out, the most common form of administrative guidance is for purposes of voluntary production cutbacks in industries specified by law as exempted from anti-monopoly legislation. In dealing with this always delicate problem, industry executives prefer administrative guidance, Johnson argues, because they trust MITI (or the bargaining process with MITI) more than any available alternative, and because with the use of administrative guidance, they also do not have to open their books to inspection by the Fair Trade Commission (FTC)—as would be the case if they were to establish a formal depression cartel under the provisions of the Anti-Monopoly Law. Johnson also notes that MITI and an affected industry use administrative guidance to arrange for agreements among companies on production and export allocations when foreign governments seek so-called "voluntary" export restraints.[2]

However, a more general debate on the utility or desirability of administrative guidance has underlay the long tug-of-war between MITI and the FTC on what constitutes a proper competition policy for Japan. MITI has traditionally taken a mediator's role between companies in cases when major industrial mergers are in the making, especially those precipitated by economic downturns. This self-appointed role as guardian of its view of competition policy has at times precipitated open conflict between MITI and the FTC, usually centering on the latter's claim that either industry or MITI itself is violating the spirit, if not the letter, of the Anti-Monopoly Law.[3]

The FTC, which administers the Anti-Monopoly Law, has had an anomalous position in Japanese society since its inception. In the early postwar years, there was so much opposition to its very existence that few analysts expected the FTC ever to gain real authority or legitimacy. Gradually, it has indeed gained some of both, relative to the past, but the degree has fluctuated over the years, often depending on the personal dynamism of its chairman.

MITI, for its part, has always favored more, rather than less, control over industry and as little accountability as possible to the FTC (or the public in general). The FTC has repeatedly argued that MITI also favors, and directly or indirectly fosters, a high degree of cartelization for industry in general, including, where necessary for this purpose, collaboration among companies on prices, production levels, etc. MITI's typical defense against such allegations, when it has felt obliged to respond, has either been that the Anti-Monopoly Law, if followed too closely, would lead to excessive fragmentation of industry, or that whatever actions it has taken were done through informal measures, such as administrative guidance, and therefore not subject to any official breach of the law. Both of these arguments have typically also been grouped under the more general argument that MITI was acting in the "national interest," with the overall health of the economy over the long term uppermost in its mind.

This institutional tension between the FTC and MITI erupted into open hositility in two famous cases: the merger of Yawata and Fuji Steel in 1969 and the allegations by the FTC in 1974 that members of the Petroleum Industry Association, presumably with MITI knowledge, engaged in price fixing.

In the steel case, the FTC argued that it did not oppose mergers per se, if the resulting corporation would not be too powerful by standards that it, on its own authority, would issue. Thus, with regard to the proposed Yawata-Fuji merger, the FTC offered its seal of approval if both companies would divest themselves of certain subsidiaries. The companies initially resisted these requests, which led in turn to a formal restraining order issued by the FTC and, eventually, to a court judgment in the fall of 1969 that the merger could go through if both firms rid themselves of a small number of facilities. Both companies then complied with the court decision, albeit with widely-advertised reluctance, and in 1970 the largest steel company in the world, New Japan Steel, came into existence with more than a 30 percent market share in Japan.

In the oil price case, after the FTC filed charges of price fixing and a court judgment found the Petroleum Industry Association guilty, the case became the first in Japanese business history—at least under the post-Meiji legal system—in which criminal proceedings were actually carried through to an adverse court ruling. In both the steel and oil price cases, much criticism was brought to bear against MITI's behavior. Social critics and opposition politicians denounced MITI for representing only the interests of big business, not the economy as a whole, but in neither case was MITI formally sanctioned and its

[1] When Japan started down the path of liberalizing its economy in 1964, a bureaucratic "crisis" erupted in MITI over what its role would be in the future without the authority to exercise direct control over the economy. Japanese commentators have cynically called this bureaucratic turmoil "MITI's neurosis." See Johnson, "MITI and Japanese International Economic Policy," op. cit., p. 248.

[2] Ibid., p. 254.

[3] The Anti-Monopoly Law, formally called the Law Relating to the Prohibition of Private Monopoly and to the Methods of Preserving Free Trade, is aimed at prohibiting collusive activities among firms with regard to price fixing and production and sales volume. It was passed by the Diet during the Occupation, and is modeled on U.S. antitrust laws.

influence has not seemed to wane because of these cases.[1]

Moreover, the criticism that MITI received over these cases has not lessened either its use of administrative guidance or industry's preference for it. Indeed, as noted above, as MITI's ability to influence the economy through direct controls continues to wane because the economy itself continues to grow (and individual companies or industries are thereby in a stronger bargaining position vis-a-vis MITI), it is being forced to rely on administrative guidance even more than in the past.[2]

Particularly where the problems and issues at hand are seemingly intractable, MITI's intervention is still considered useful, again in part because of the flexibility provided by the administrative guidance system. For example, as more basic manufacturing processes lose their competitiveness, these industries will be forced to scale down or even close domestic production facilities. In any country, including Japan, such adjustment is difficult and painful, especially in a period of slow growth. In some of these cases at least, MITI's advice and assistance appears to have been actively sought. As discussed in greater detail in Chapter VII, those industries designated by law as structurally depressed are eligible for direct guidance by MITI and, under certain conditions, direct financial assistance. Even industries such as petrochemicals, which have not yet been designated "structurally" depressed, have also sought MITI advice and mediation with regard to production levels and capacity reductions. Thus, in hard-hit sectors, MITI retains considerable influence. However, the record of late suggests that this influence has not been strong enough to be able to force through industry compliance if an affected industry opposes the particular measures suggested by MITI.[3]

D. Future Trends

In general terms, the Japanese government's role in promoting industrial development has declined over time. In the early postwar years, MITI's authority to allocate foreign exchange gave it considerable leverage over the private sector, especially as the latter was itself eager to expand to whatever degree possible. Over the years, as domestic industries prospered, they came not only to have to rely less on MITI (whether for foreign exchange, tax breaks, preferential financing, or other direct supports), but also to resent continued attempts by MITI to guide their further development. MITI's inability to push through a reorganization of the automobile industry along lines it favored or to prevent overexpansion of petrochemical facilities are good examples of this generally steady decline in its capacity to influence events.

All along, MITI's role has been most significant in the early stages of the development of new industries, the most prominent recent examples being computers and electronics. In such cases, MITI's ability to provide subsidies, tax credits, and other forms of direct support, together with indirect support in the form of seed money that can serve as implicit government backing, gives it more leverage than in the later stages of an industry's development. Once into a growth phase, companies typically become more reluctant to share proprietary information, have less need for government funds, and are less willing to comply with outside suggestions.

Now, as previously successful basic manufacturing industries have begun to become uncompetitive, MITI has again come to play a significant role, either in fostering the compromises necessary to enforce capacity cutbacks, or—more concretely—in doling out subsidies that senescent industries need to survive. In some cases, such as steel and automobiles, where the problem is not decline but "excess" success—at least from the viewpoint of foreign producers—MITI has also come to play a role in negotiating compromises with trading partners.

In other words, more now than before, and likely to become still more in the future, MITI's role has now shifted from one of guiding Japanese companies or industries through an entire life-cycle to one of guiding or supporting industries mainly at the beginning and the end of a product cycle. In this regard, MITI is now targeting the development of new service industries, such as leisure, information processing, and various new technologies, materials, and production processes, all of which receive considerable attention in the latest "vision" document.[4] Yet MITI's importance in the development of these industries, though greater than the role it currently plays in the "middle years" of an industry cycle, is not as decisive as the role it formerly played in stimulating the development of new industries in the past. In this sense, MITI's role in influencing Japanese industrial development is in a long-term, secu-

[1] Much of the above discussion of the FTC is drawn from Chalmers Johnson, *MITI and the Japanese Miracle*, op. cit., especially pp. 221, 245, and 298-303. For a further discussion of the petroleum case, see Chapter VII of this report.

[2] Interestingly, some businessmen are now saying privately that administrative guidance is "dead," meaning that many more firms are willing to ignore or minimize MITI suggestions, if these go against the company's own desires at the time. This trend is not brand new—most firms in the auto industry successfully resisted MITI's ideas for reorganization more than a decade ago—and in this form is probably overdrawn. But it is being talked about much more readily; this much is new, even if such talk is mostly still private, and apparently too controversial for the newspapers.

[3] Concrete examples are discussed in Chapter VII.

[4] *Hachiju Nendai no Tsusan Seisaku Bijon* [Vision of Trade and Industry Policy for the 1980s], op. cit.

lar decline. In terms of the categories used by Chalmers Johnson in his study of MITI, the more developed the Japanese economy becomes, the more it will become market-rational, rather than plan-rational.[1] Indeed, one of the main reasons for MITI's continued vitality as a ministry is the extraordinary awareness it has shown of the importance of actively promoting new technologies and new industries, even at the expense of its own influence in the narrow sense of the term. Because of its own internal "structural adjustment," MITI is better equipped than rival ministries, such as Post and Telecommunications, to play some kind of continuing role in influencing industrial development, even if this role is an increasingly informal one, and even as its direct controls, in an aggregate sense, are diminishing.

MITI officials seem resigned to the "deleterious" consequences—at least to their own bureaucratic power in the narrow sense—of Japan's overall economic success. For example, in a scenario of economic resurgence, the whole Japanese economy, including Japanese companies, would obviously do better than under conditions of continued stagflation. Companies would have a better cash flow position, higher retained earnings, and more visible opportunities waiting to be taken up. Even declining industries would be in a better position, on balance, to change product lines and make their own adjustments to new conditions. Correspondingly, MITI's role would be less important; it would not be needed as much to play middle-man in designing cutbacks for declining industries, and on the frontier, its role as a catalyst for new technologies and processes would also not be needed as much. On the other hand, in a scenario of continued stagflation, MITI's role would increase in terms of aiding declining industries and providing help to frontier industries. However, this expanded role would also entail increased problems, since, in the face of serious budgetary and political constraints, the policies likely to be designed to achieve these various goals will no longer be as complementary as in the past.

[1]Unfortunately, Johnson himself does not seem to address this point, particularly with regard to his concluding chapter, which seems to be suggesting (without explicitly advocating) that a Japanese model might be suitable for the U.S. and/or other countries seeking high-speed growth. Johnson does note that the U.S., because its traditions and current situation are different from postwar Japan, might do well "to build on its own strengths and to unleash the private, competitive impulses of its citizens rather than add still another layer to its already burdensome regulatory bureaucracy." But without particular elaboration, Johnson goes on in the next (and final) paragraph to suggest that such a reliance on private economic activity may "be unrealistic for the longer term," and that "Americans should perhaps also be thinking seriously about their own 'pilot agency' " (comparable to MITI) to coordinate economic policies. See Johnson, *MITI and the Japanese Miracle*, op. cit., p. 323. The difficulty here is that if, as Johnson himself argues, a plan-rational economy is characteristic of late developing countries and a market-rational economy is characteristic of already developed countries, there would logically then be a separate set of issues relevant to a transition from a developing to a developed economy. Indeed, we believe these are the key issues in Japanese policy-making today. Johnson, on the other hand, seems to be suggesting that the U.S. adopt a Japanese model at a time when, in our view at least, Japan is moving away from that very model, and toward a more market-rational economy characteristic of the U.S. and other already developed countries.

Hence, as noted in Chapter I, we suggest that the U.S. adopt an economic policy council to coordinate the many now-disparate elements of U.S. economic policy, but that such a council not attempt the planning functions that MITI still has in some sectors of the economy or under certain conditions. Such a council would be less powerful than Johnson's proposed "pilot agency," but hopefully more effective than current or previous ad hoc attempts to achieve greater policy coordination.

CHAPTER IV

Industrial Policy in the Tax System

The tax system has contributed significantly to Japan's post-World War II economic growth, although the actual measures employed have not been unusual—and certainly not unknown in other advanced industrial countries.[1] Indeed, many similar measures have been used to create investment incentives and promote business activity in other countries. Creation of an environment favorable to saving and investment generally, including as a matter of course an initial bias toward basic manufacturing industries, represents the major contribution of the Japanese tax system to the country's industrial development. This pro-investment environment was created mainly through the use of broad-based measures. Specific measures directed at particular industries or groups of firms have also been important. It is these latter measures that are usually classified under the rubric of industrial development policy, and are the primary focus of this report. In our view, these specific measures have been less important to economic growth and industrial development than the broad-based incentives to save and invest; thus, this chapter discusses the specific targeted measures in the context of some of the broader measures.[2]

A. Historical Evolution[3]

The postwar Japanese tax system was strongly influenced by allied occupation policies, in particular the stabilization policies promulgated by Joseph M. Dodge and the recommendations of a special tax mission headed by Carl S. Shoup. The latter provided the foundation for the 1950 tax reform, whose basic structure remains in effect to this day. The key recommendations of the Shoup mission, as reflected in the system that emerged at the time, were as follows:[4]

1. Direct taxes became the foundation of the new system, most importantly progressive individual income and corporate taxes.
2. Unlike in the U.S., a corporation was defined as an aggregation of shareholders, not as an independent taxable entity. Thus, the corporate tax represented an advance payment of individual income tax by shareholders; as a result, the overall tax system was specifically designed to avoid double taxation of corporate income.
3. All income was to be taxed equally regardless of source—again, unlike the U.S. system of distinguishing between, say, capital gains and ordinary income.
4. Due to the high inflation rates immediately after the war, a wide difference emerged between the book value and the current value of fixed assets. In order to make the tax structure more realistic, a reassessment of assets was undertaken. A reassessment of business assets

[1] This point, in a general sense, is central to the discussion by Joseph A. Pechman and Keimei Kaizuka in their chapter, "Taxation," in Patrick and Rosovsky, op. cit.

[2] We have found no satisfactory estimates of the general impact of the tax system on saving and investment. Macroeconomic models of the Japanese economy tend to be too aggregative to sort out the effects of specific instruments, while the more detailed studies of investment and consumer behavior are typically too specialized or are not structured in such a way as to be directly applicable to this problem. Moreover, and partly for the above reasons, we felt that any attempt to make such estimates would be beyond the scope of this study. See Chapters II and III for some discussion of the interaction and complementarity among general and specific policy instruments and some of the relevant citations.

[3] Details of Japan's tax system discussed below are drawn from *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), and Yuji Gomi, *Guide to Japanese Taxes, 1981-82* (Tokyo: Zaikei shōhō sha, 1981). Both of these volumes are revised annually to reflect changes in legislation.

[4] This list selects items from the 1950 tax reform that have particular relevance to industrial policy and/or economic growth in general. It ignores items that may be important for other reasons.

was optional, while the assets of individuals were to be reassessed at the time of transfer of such assets. Income from any up-valuation was taxed at a special low and flat rate.

5. The maximum marginal income tax rate was lowered from 85 to 55 percent, while a progressive net worth tax was introduced on persons with large property incomes.
6. The extraordinarily complex prewar special tax treatment of individual sectors, industries, and firms was reduced to "a practicable minimum." The idea here was to avoid a situation in which the tax system itself might distort investment incentives.
7. Various local political entities were granted an independent right to tax.

A variety of tax modifications occurred in the early 1950s. In 1952, the two percent tax surcharge on corporate retained profits was abolished.[1] In 1953, capital gains from securities transactions were excluded from taxable income, partly to promote development of a securities market, but more importantly, perhaps, because this tax proved difficult to assess and collect.[2] The net worth tax was abolished at the same time—again, primarily because of an inability to assess and collect it equitably. In an effort to stimulate economic growth, certain special targeted tax measures, similar to those abolished in the 1950 reform, were re-introduced. Proponents of this move argued that economic conditions—specifically a desire for high growth—warranted moving away from the earlier principles of unitary taxation of income and non-distortion of investment incentives. Thus, various measures were introduced providing for expanded depreciation allowances, a wider application of reserves for bad debts and price fluctuations, and the exemption from tax of certain income from exports, and the differential taxation of income from various sources.[3]

With rapid and continuing economic growth in the latter half of the 1950s, tax revenue gains were spectacular. Consequently, annual tax reductions became a pattern—and later an expectation. These raised basic exemptions and reduced the progressivity of the income tax system. The frequency of tax rate reductions led the government to create a bureaucratic entity to review the overall tax system and recommend changes. In 1956, the Tax Commission was established as an advisory organ to the Cabinet. Since then, regular tax reforms have been based primarily on reports submitted by this commission. However, during the latter half of the 1970s, when economic growth rates were much lower than in the past and a burgeoning government deficit called for at least some *increase* in tax rates, attempts by the Commission to persuade the government to raise taxes came to naught.

The first major long-term review of the tax system was completed by the Tax Commission in 1959. Among other things, the Commission recommended that: (1) the overall tax burden of the nation should be limited to approximately 20 percent of national income; (2) as had been the case since the mid-1950s, annual tax rate reductions should return some fraction of the unanticipated revenue resulting from economic growth; (3) the indirect tax rate should in principle average some 10 percent of consumer prices or 20 percent of producer prices; and (4) a General Law of National Taxes should be enacted to bring together the general and fundamental principles of taxation; this was done in 1962.

In 1964, the Tax Commission presented a new long-term plan for the evolution of the tax system. It reaffirmed the goal of maintaining total tax revenues at roughly 20 percent of national income, and retained the income tax as the mainstay of the overall system. The Commission argued that income taxes should continue to allocate resources without distorting the price mechanism, redistribute income through progressive tax rates, and serve as a built-in stabilizer over the business cycle. In addition, the Commission called for the eventual abolition of the special targeted tax measures that had proliferated since the mid-1950s. Thus, the Commission reaffirmed the Shoup mission's central recommendation that an income tax system would function properly only if all income were consolidated and taxed progressively. Special measures should be permitted, in the Commission's 1964 view, only for the purpose of avoiding double taxation of corporate income.

The various elements of this new long-term plan were all followed with one important exception: the goal of reducing the importance of special taxation measures, which the Commission was unable to implement during the 1960s. Later, as the revenue losses from these measures rose dramatically in the late 1960s and early 1970s, serious attention began to be paid once again to the elimination of these benefits. Indeed, after the early 1970s, the dominant influence on policies toward the tax system became the large increase in government deficits, and both the number of and government revenue losses resulting from special targeted taxation measures declined dra-

[1] This surcharge was originally justified on the basis of the income tax deferment granted to stockholders by corporate retained earnings.

[2] Although it may not have been intended, this had the effect of building a growth-oriented bias into the tax system—to the extent that securities holders influenced corporate decision making.

[3] Over time the individual income tax has come to be applied differently to income from the following sources: employment, business, interest, dividends, capital gains, real estate, retirement, timber, occasional, and miscellaneous.

matically (see Table IV-11 below).[1] The major exceptions have been in the areas of "promotion of science and technology," which has continued to grow, if slowly, in yen amounts, and "energy and resources" and "regional development," which have declined only modestly in absolute yen value since 1975.

The size of the deficits and the growth of government debt has been dramatic (refer back to Figure III-2). These stemmed from a (perhaps overdue) need to build up social infrastructure, and from the unstable economic conditions immediately following the 1973-74 increase in oil prices. The deficit reached almost 35 percent of national budget expenditures in fiscal 1979, before declining to 26 percent in fiscal 1981.[2] This has resulted in continuing pressure to increase tax revenues, and correspondingly to reduce special tax measures still further. The broadly-conceived goal of rationalizing the functions of government and restraining its growth has become a major plank in the long-term program put forth by Prime Minister Suzuki. He has made a point of saying that, under his administration, the government would not raise tax rates until it had achieved some success in rationalization. Indeed, as a matter of course in Japan, and perhaps with a special eye on the burdensome level of public spending built up in most Western countries, many welfare programs that have been undertaken by the public sector in the West, e.g., housing for the elderly, are being introduced in Japan as activities in part within the private sector. These programs receive government support such as subsidized loans, but are not being run as out-and-out government entitlement programs as are similar programs in other advanced industrial countries. This reduces the likelihood and degree of runaway public spending. Still, there is considerable pent-up demand for improved social infrastructure, and considerable political pressure to that effect. In time, there is also likely to be a need or a demand for greater defense expenditures. Thus, on average, taxes are almost certain to rise, and the tax share of national income is unlikely ever again to fall below 20 or even 25 percent.

[1]Besides budgetary pressures, at least two other trends appear to have contributed to the increased interest in a reduction in the number of and benefit provided by special tax measures at that time: policy goals began to shift away from growth and export promotion, giving other ministries besides MITI greater influence, and opposition to such explicit targeted support has become more important in the political process. For a brief discussion, see Pechman and Kaizuka, op. cit., pp. 328-330.

[2]Prime Minister Suzuki, in the annual policy speech to the Diet in January 1982, set as a major goal of his current program the reduction of this figure to 21 percent in 1982 and zero in 1984. See Masahiko Ishizuka, "FY 1982 Budget Most Stringent in 25 years; Defense Outlays Get Priority," *The Japan Economic Journal*, January 12, 1982, pp. 1, 7.

B. The Present Tax System

The principal national and local taxes and estimated 1981 revenues are shown in Table IV-1. Most of these taxes generate specific incentives that affect industrial development one way or another, e.g., a motor vehicle tonnage tax discourages larger automobiles. However, the uses of Japanese tax measures as industrial policy that we view as most significant stem mostly from various modifications to individual and corporate income taxes. Hence, we focus in this section on some of the detailed incentives for industrial development that grow out of the individual and the corporate income taxes. Other taxes will be discussed only to the extent that they are important for specific industrial policy packages, e.g., the use of petroleum taxes to support energy research and development. Individual and corporate income taxes contain many measures that provide benefits for certain types of activities—e.g., tax incentives. Most, but not all, of these measures are incorporated in a Special Taxation Measures Law. Since the law itself identifies the incentives and disincentives designed to target specific industries, and targeted tax measures are almost always temporary and directed toward specific economic policy goals, one can frequently relate changes in policy goals to actual implementation over time by reviewing the periodic revisions of the law.

1. Individual Income Tax

Individual income taxes now (1981) represent nearly 39 percent of Japanese government revenues (see Table IV-2). The progressive national income tax reaches a maximum marginal rate of 75 percent for incomes over ¥80 million ($363,636 at ¥220 = $1), not including prefectural and municipal income levies (see Table IV-3). Prefectural and municipal tax schedules are shown in Table IV-4.[3] The overall system is highly progressive on paper, although various exclusions, deductions, and credits significantly reduce both the progressivity and the total burden. As seen in Table IV-5, the share of income tax in national income rose from 1960 to 1973, fell through 1977, and then rose sharply through 1979. Even at its peak in 1973, income tax accounted only for 5.4 percent of national income (6.9 percent including local taxes); the decade average, ending in 1979, was 4.5 percent (6.1 percent). Comparable figures for the U.S. have averaged over twice those for Japan (con-

[3]If the sum of income tax and income levies exceeds 80 percent of taxable income, then income levies are reduced. See Gomi, op. cit., p. 32.

TABLE IV-1
TAX REVENUE ESTIMATES BY ITEM: 1981

(¥ 100 MILLION & PERCENT)

National taxes			Local taxes		
Tax item	Amount	%	Tax item	Amount	%
I. GENERAL ACCOUNT			**I. ORDINARY TAXES**		
Direct Taxes			**Prefectural Taxes**		
Income Tax	130,790	38.7	Prefectural Inhabitants Tax	21,361	12.5
Corporation Tax	103,520	30.6	Enterprise Tax	32,744	19.2
Inheritance Tax & Gift Tax	5,180	1.5	Real Property Acquisition Tax	2,927	1.7
Indirect Taxes, etc.			Prefectural Tobacco Consumption Tax	2,567	1.5
Liquor Tax	18,300	5.4	Local Entertainment Tax	776	0.5
Sugar Excise Tax	470	0.1	Tax on Consumption at Hotels and Restaurants	4,166	2.4
Gasoline Tax	15,210	4.5	Automobile Tax	8,019	4.7
Liquified Petroleum Gas Tax	150	0.0	Mine-lot Tax	9	0.0
Aviation Fuel Tax	540	0.2	Hunters License Tax	35	0.0
Petroleum Tax	4,750	1.4	Prefectural Property Tax	78	0.0
Commodity Tax	13,790	4.1	**Municipal Taxes**		
Playing-cards Tax	10	0.0	Municipal Inhabitants Tax	45,483	26.6
Bourse Tax	170	0.1	Municipal Property Tax[2]	29,234	17.1
Securities Transaction Tax	3,390	1.0	Light Vehicle Tax	436	0.3
Travel Tax	720	0.2	Municipal Tobacco Consumption Tax	4,511	2.6
Admission Tax	60	0.0	Electricity & Gas Taxes	4,025	2.4
Motor Vehicle Tonnage Tax	4,130	1.2	Mineral Product Tax	38	0.0
Customs Duty	7,740	2.3	Timber Delivery Tax	28	0.0
Tonnage Due	100	0.0	Special Landholding Tax	679	0.4
Stamp Revenue	13,820	4.1			
Monopoly Profits	7,622	2.3			
II. SPECIAL ACCOUNTS			**II. EARMARKED TAXES**		
Local Road Tax[1]	2,735	0.8			
Liquefied Petroleum Gas Tax[1]	150	0.0	To, Do, Fu & Prefectures[3]	7,243	4.2
Aviation Fuel Tax[1]	98	0.0	Cities, Towns & Villages[4]	6,517	3.8
Motor Vehicle Tonnage Tax[1]	1,377	0.4			
Special Tonnage Duty[1]	125	0.0			
Customs Duty on Oil	1,586	0.5			
Promotion of Resources Development Tax	1,429	0.4			
TOTAL	337,962	100	TOTAL	170,876	100

[1]Distributed to the local governments

[2]Municipal property tax includes charges on National Assets & Public Corporation's Assets

[3]Automobile acquisition tax, Light-oil Delivery Tax, etc., are included.

[4]Bathing Tax, Business Office Tax, City Planning, etc., are included.

SOURCE: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), pp. 14-15.

TABLE IV-2
SHARES OF CORPORATION TAX AND INCOME TAX IN TOTAL NATIONAL TAX REVENUE: 1950-1981

(¥ 100 MILLION AND PERCENT)

Year	Total national tax revenue	Corporation tax		Income tax	
		Amount	%	Amount	%
1950	5,708	838	14.7	2,201	38.6
1955	9,369	1,921	20.5	2,787	29.7
1960	18,015	5,734	31.8	3,906	21.7
1965	32,797	9,271	28.3	9,704	29.6
1970	77,754	25,672	33.0	24,282	31.2
1975	145,068	41,279	28.5	54,823	37.8
1976	168,063	47,920	28.5	62,125	37.0
1977	184,415	55,662	30.2	65,784	35.7
1978	232,284	79,128	34.1	77,530	33.4
1979	249,602	73,859	29.6	92,720	37.1
1980 (revised budget)	286,471	87,540	30.6	110,100	38.4
1981 (budget)	337,962	103,520	30.6	130,790	38.7

NOTE: The figures for 1978 include 13 months (1978/5—1979/5)

SOURCE: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), p. 281.

TABLE IV-3
RATES OF INDIVIDUAL INCOME TAX

Taxable income (yen) (A)		Marginal tax rate (B)	Cumulative tax for each bracket (yen) (C)	Average tax rate (at bracket maximum)
OVER	BUT NOT OVER			
—	600,000	10%	—	10.0%
600,000	1,200,000	12	60,000	11.0
1,200,000	1,800,000	14	132,000	12.0
1,800,000	2,400,000	16	216,000	13.0
2,400,000	3,000,000	18	312,000	14.0
3,000,000	4,000,000	21	420,000	15.8
4,000,000	5,000,000	24	630,000	17.4
5,000,000	6,000,000	27	870,000	19.0
6,000,000	7,000,000	30	1,140,000	20.6
7,000,000	8,000,000	34	1,440,000	22.3
8,000,000	10,000,000	38	1,780,000	25.5
10,000,000	12,000,000	42	2,540,000	28.2
12,000,000	15,000,000	46	3,380,000	31.7
15,000,000	20,000,000	50	4,760,000	36.3
20,000,000	30,000,000	55	7,260,000	42.5
30,000,000	40,000,000	60	12,760,000	46.9
40,000,000	60,000,000	65	18,760,000	52.9
60,000,000	80,000,000	70	31,760,000	57.2
80,000,000		75	45,760,000	—

NOTE: Tax liability is obtained by multiplying the taxable income in excess of the amount (A) by the rate (B) and adding the amount (C). For example, income tax due on taxable income of 25 million yen is: (¥25,000,000 − ¥20,000,000(A)) × 0.55 (B) + ¥7,260,000 (C) = ¥10,010,000.

SOURCE: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), p. 52.

TABLE IV-4
LOCAL INCOME LEVIES

Prefectural tax rate			Municipal tax rate		
(¥ thousands)		%	(¥ thousands)		%
not over	300	2	not over	300	2
"	500	2	"	450	3
"	800	2	"	700	4
"	1,100	2	"	1,000	5
"	1,500	2	"	1,300	6
"	2,500	4	"	2,300	7
"	4,000	4	"	3,700	8
"	6,000	4	"	5,700	9
"	10,000	4	"	9,500	10
"	20,000	4	"	19,000	11
"	30,000	4	"	29,000	12
"	50,000	4	"	49,000	13
over	50,000	4	over	49,000	14

SOURCE: Yuji Gomi, *Guide to Japanese Taxes, 1981-82* (Tokyo: Zaikei shōhō sha, 1981), p. 32

TABLE IV-5
BURDEN OF INCOME TAX AND LOCAL INHABITANTS TAXES, JAPAN AND THE U.S.; 1950-1979

(¥ 100 MILLION AND PERCENT)

Fiscal year	(1) National income (A)	(2) Income tax (B)	(3) Local inhabitants taxes	(4) Total (C)	(5) B/A	(6) C/A	(7) U.S. personal income tax as a percent of national income
1950	30,708	2,201	458	2,659	7.2%	8.7%	—
1955	71,948	2,787	715	3,502	3.9	4.9	—
1960	120,398	3,906	996	4,902	3.2	4.1	—
1965	277,960	9,704	3,430	13,134	3.5	4.7	8.6%
1967	381,430	12,896	4,576	17,472	3.4	4.6	9.6
1968	447,930	16,131	5,102	21,233	3.6	4.7	10.0
1969	524,400	20,056	5,585	25,641	3.8	4.9	11.6
1970	633,460	24,282	6,969	31,251	3.8	4.9	11.8
1971	692,090	28,892	9,123	38,015	4.2	5.5	10.4
1972	797,890	37,261	11,579	48,840	4.7	6.1	10.4
1973	982,320	53,322	14,058	67,380	5.4	6.9	10.7
1974	1,158,360	53,504	19,573	73,077	4.6	6.3	11.4
1975	1,278,910	54,823	20,990	75,813	4.3	5.9	11.7
1976	1,444,590	62,125	24,722	86,847	4.3	6.0	10.6
1977	1,589,190	65,784	27,982	93,766	4.1	5.9	11.1
1978	1,747,580	77,530	32,870	110,400	4.4	6.3	11.4
1979	1,884,380	92,720	37,181	129,901	4.9	6.9	12.1

NOTES: 1. The figures are personal income for FY 1950, 1955, and 1960 and are not consistent with successive figures.

2. The figures of income tax for 1978 include 13 months (1978/5—1979/5)

SOURCE: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), p. 278; OECD, *National Accounts of OECD Countries, 1962-1979*, Vol II, detailed tables, Table 6, p. 24 and Table 6, p. 36; U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the U.S.* (1976), p. 1107, 1241; Idem, *Statistical Abstract of the United States*, various issues; and Idem, Bureau of Economic Analysis, *Business Conditions Digest*, (November 1981).

trast column 7 with column 5), showing that the actual individual income tax burden in Japan remains relatively low.[1]

Numerous exemptions, credits, and deductions have the effect of undercutting the goal of unitary taxation on income, although the principle remains on the books as an ideal to aim for. A key result of these exemptions, credits, and deductions to date has been to provide indirect support for economic growth through a bias in the system in favor of saving and investment. Revisions in the tax law since the 1950 reform have defined several forms of income as tax exempt; two are particularly important for this biasing of the system.

First, interest received on "small-size" savings accounts and certain accounts in the postal savings system are exempt from taxation—in both cases on accounts not exceeding ¥3 million ($13,636 at ¥220 = $1)—as are various other sources of interest type income.[2] This has doubtless greatly stimulated savings by the ordinary citizen, all the more so because multiple accounts under various guises, have been tolerated by officials of the postal savings system in spite of the continued but ineffective dismay of tax officials in the Ministry of Finance.[3] In addition, interest rates and deposit regulations are manipulated in favor of the postal savings system, thereby diverting much of the small savings that might otherwise go to banks into the postal savings system, i.e., directly into government hands, for investment in favored industries or, in recent years, to favored infrastructure projects.[4]

Secondly, capital gains accrued from the sale of shares or other kinds of securities are also excluded from taxation.[5] One of the principal effects of this exclusion is to make capital gains more attractive to stockholders than dividends, which are taxed (either at the corporate or individual level).

Certain tax credits available to individuals also contribute to industrial development policies. For example, a credit for dividend income, though it does not eliminate the tax burden as in the case of excluding capital gains income, does reduce the degree of taxation of income from corporate sources. For individuals in tax brackets below ¥10 million ($45,454 at ¥220 = $1), a tax credit equaling 10 percent of dividend income is permitted; for individuals in tax brackets above ¥10 million, the credit is 5 percent. Under Japanese tax principles, this measure is justified as a means of preventing double taxation of corporate income. Special savings deposits for housing purchases receive a tax credit; this credit carries a variety of conditions, but represents a substantial savings incentive.[6] Individuals also are permitted a tax credit for experimental and research expenditures similar to those allowed corporations. This provision benefits primarily unincorporated family businesses. From 1968 to 1982, 20 percent of experimental and research expenditures above the largest previous amount of such expenditures (since 1966) can be credited against taxes, not to exceed 10 percent of the income tax on business income (of the individual) before the credit.

2. Corporate Tax

The most important generally applicable tax manipulated for purposes of industrial development is the corporate tax. Effective corporate tax rates are shown in Table IV-6. The system is progressive, and the maximum rate is comparable to those in other advanced industrial countries (see Figure IV-1). However, in some respects, this direct comparison is misleading, since many of the tax benefits discussed below apply to the computation of net taxable in-

[1] The progressivity of the individual income tax system is significantly reduced by generous exclusions and/or deductions for income other than wages and salaries (including year-end bonuses). Perhaps the most important of such benefits include the exclusion of the value of subsidized housing (by employers) from taxable income, and the special treatment of retirement payments to employees (typically lump-sum payments). With respect to the latter only 50 percent of retirement income beyond a very generous special retirement deduction is taxable. Also important are various tax-free recreational and other benefits provided by Japanese firms (weekend resort facilities, subsidized overseas travel, etc.). For executives such tax-free items as expense accounts, chauffered cars, subsidized loans, etc., are added to the compensation package.

[2] The degree to which Japan's high propensity to save is based on an alleged culturally-derived frugality, as against specific incentives to save, is a question that is frequently discussed among specialists, without, as far as we could determine, definitive results. Many observers have noticed, for example, that Japan's savings rate before World War II was roughly the same as the prewar U.S. rate. This suggests that Japan's extremely high postwar savings rate stems from other, more proximate causes than a culturally-derived proclivity for high savings, e.g., an obvious and immediate economic need to rebuild capital lost during the war, and specific policies such as the above-mentioned tax exemption on "small size" savings accounts designed to support this objective.

[3] One indication of the degree of tax evasion permitted through the postal savings system is the number of deposits—just over twice Japan's population!

[4] This point will be discussed in greater detail in the discussion in Chapter V of government credit policies. In effect, the government compensates for its revenue losses through the tax exemption on small savings by getting the use of this saving through manipulation of interest rates, etc., in favor of the postal savings system.

[5] Capital gains on certain other assets also are excluded from taxation; in addition, certain limitations apply to prevent abuses.

[6] Although the tax break to housing is reputed to be less than that given by the deductability of interest payments in the U.S., the important difference is in the impact on the system itself: in the U.S. the incentive is to borrow; in Japan the incentive is to save.

TABLE IV-6
TAX BURDEN ON CORPORATE INCOME

(EFFECTIVE TAX RATE)

	Up to ¥3.5 mil.	¥3.5 mil. —¥7 mil.	¥7 mil. —¥8 mil.	Over ¥8 mil
Corporate	26.60%	25.88%	25.18%	34.82%
Inhabitant (1) Prefectural	1.33	1.29	1.26	1.74
taxes: (2) Municipal	3.27	3.18	3.10	4.28
Enterprise tax	5.66	8.26	10.71	10.71
Total	36.86	38.61	40.25	51.55

NOTE: The enterprise tax is deductible in computing the tax basis for the corporate tax and the enterprise tax itself. Indirectly it is also deductible in computing the inhabitant tax as well. It is assumed that 30 percent of corporate income before tax is distributed as dividends—to which a lower marginal tax rate is applied.

SOURCE: Yuji Gomi, *Guide to Japanese Taxes, 1981-82* (Tokyo: Zaikei shōhō sha, 1981), p. 26.

TABLE IV-7
CORPORATE TAX REVENUE, SALES, AND TAX REVENUE SHARE OF SALES, BY AMOUNT OF CAPITAL: 1979

Capital (¥ million)		Corporations		Total sales (¥ 100 million)	Tax amount (¥ 100 million)	Tax as a percent of sales
More than	Not more than	Number	As percent of total			
	1	217,464	15.5	196,693	1,097	0.6%
1	5	727,086	51.9	689,474	4,714	0.7
5	10	220,308	15.7	452,393	3,614	0.8
10	50	205,351	14.6	1,342,741	13,665	1.0
50	100	16,161	1.2	413,491	4,495	1.1
100	1,000	13,477	1.0	982,407	12,344	1.3
1,000	5,000	1,620	0.1	612,559	8,629	1.4
5,000	10,000	309	0.0	344,559	5,115	1.5
10,000		284	0.0	1,358,921	19,581	1.4
Total		1,402,060	100.0	6,393,237	73,253	1.1 (Average)

SOURCE: The 105th annual statistics report of the National Tax Administration for 1979, as reported in *An Outline of Japanese Taxes, 1981.* (Tokyo: Ministry of Finance, 1981), p. 282.

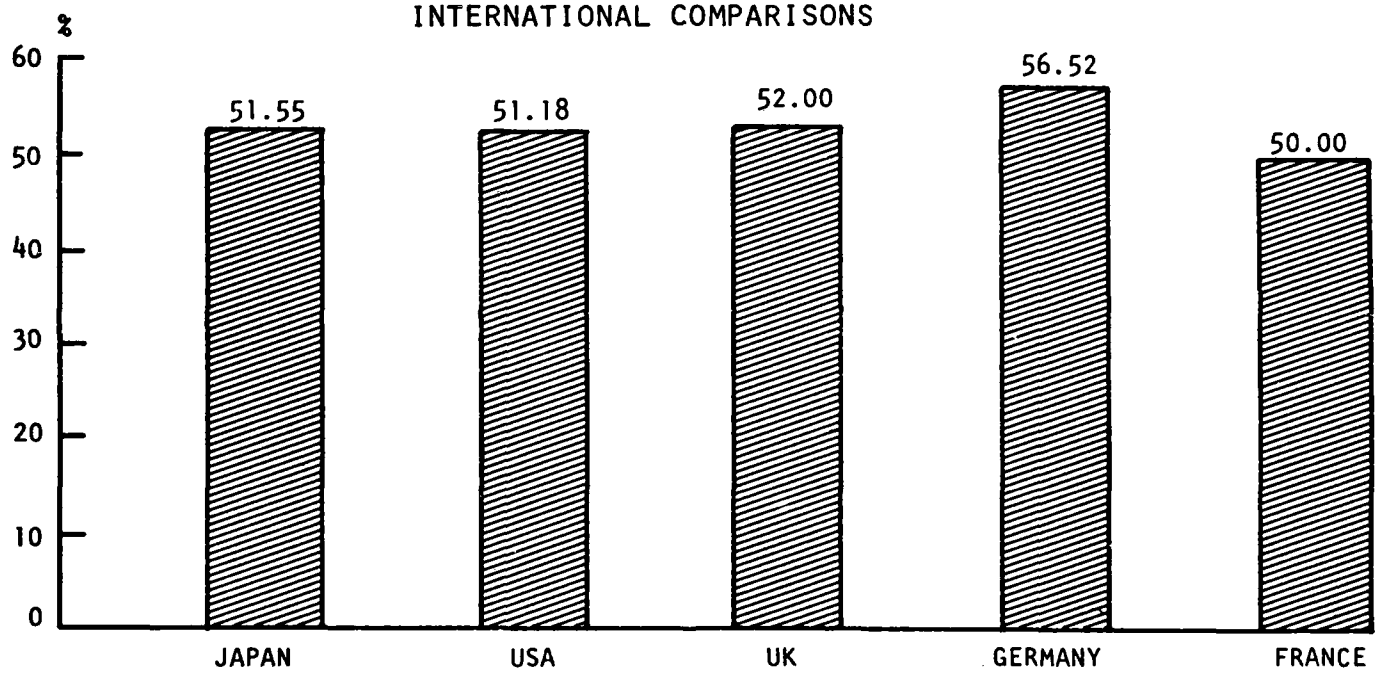
come. A different perspective is provided by comparing taxes to total sales (see Table IV-7). The corporate tax burden on sales is clearly progressive, with an average of 1.1 percent. Roughly comparable data for the United States (a 1.4 percent average), shown in Table IV-8, suggest a heavier level of taxation for U.S. firms; this difference would be even more pronounced if income of U.S. firms other than sales receipts (such as dividend income and interest receipts) were excluded to bring the U.S. data more in line with Japanese data.[1] These data do not permit more detailed comparison, since the Japanese definition of capital and the U.S. definition of assets are not analogous.

Several general features of the corporate tax system are important. As noted previously, the system is structured to minimize double taxation of corporate income. Moreover, as also noted above, most capital gains income received by individuals is untaxed, while dividend income received by individuals is taxed. As far as individual owners of stock are concerned, these features bias the system in favor of

[1]The U.S. corporate income figure used as the base includes more than sales and this distorts the comparison by lowering the ratio. In addition, U.S. corporate income is taxed again when distributed as capital gains or dividends to the shareholders.

Figure IV-1

EFFECTIVE CORPORATION TAX RATES:
INTERNATIONAL COMPARISONS



NOTE: BASED ON CORPORATION TAX LAW AS OF APRIL, 1981.

SOURCE: TAX BUREAU, MINISTRY OF FINANCE.

TABLE IV-8
U.S. CORPORATION INCOME TAX RETURNS—SELECTED ITEMS, BY ASSET-SIZE CLASS: 1976

Asset-size class ($1,000)		Number of returns[1] (1,000)	Total receipts ($ billion)	Tax[2] ($ billion)	Tax as a percent of the receipts
At least	Less than				
—	500[3]	1,799	474.6	2.3	0.5%
500	1,000	130	200.8	1.5	0.7
1,000	5,000	111	443.2	5.1	1.2
5,000	10,000	16	152.4	2.4	1.6
10,000	50,000	19	313.0	5.7	1.8
50,000	100,000	3	145.6	2.5	1.7
100,000		4	1,905.9	30.3	1.6
Total		2,082	3,635.5	49.8	1.4 (Average)

[1]Active corporations.

[2]After deduction for foreign tax credit, investment credit, U.S. possessions tax credit, and includes tax from recomputing prior year investment credit and additional tax for tax preferences.

[3]Includes corporations with zero assets.

SOURCE: U.S. Internal Revenue Service, *Statistics of Income, Corporation Income Tax Returns*, annual; as reported in U.S. Department of Commerce, *Statistical Abstract of the United States: 1980* (101st edition). Washington, D.C., 1980, p. 276.

higher growth through reinvested earnings, and thus toward capital gains rather than dividend payments. In addition, corporate income paid out as dividends faces considerably lower corporate tax rates than retained earnings—for large companies 32 percent as against 42 percent. This feature encourages considerable cross-ownership, since, with some limiting conditions, dividends received from other corporations are also excluded from taxable income. Lower tax rates also apply to smaller corporations, cooperatives, and corporations in the "public interest."[1]

Certain measures within the corporate tax system are used to target specific industrial policy objectives. These typically fall into three categories: added depreciation, tax-free reserve funds, and tax credits; various other measures are or have been used as well, but these three are the most widely used.

Depreciation rules per se are similar to those in other advanced industrial countries, but may have been applied in Japan more flexibly and with a specific policy objective in mind. The main depreciation rules are as follows:

1. Both tangible fixed assets and intangible fixed assets (such as copyrights, patents, rights of business, deferred assets, etc.) are depreciable on the basis of acquisition cost and salvage value.
2. Minor assets, i.e., those with a useful life of less than one year or acquisition costs of less than ¥100,000 ($455 at ¥220 = $1), can be written off in the year purchased.
3. A firm may elect to use either a straight line or a declining balances method.[2] Other depreciation methods may be used with special approval.
4. A corporation may apply, for each item or group of properties, whichever method of depreciation it prefers for that item or group.
5. Statutory useful lives for assets are determined by the government; a list is provided in Table IV-9. Under certain conditions, a corporation may apply to alter the statutory life of an asset if, for example, the asset cannot live out its statutory life.

In addition, the Special Taxation Measures Law permits a variety of special types of depreciation. The economic rationale for offering special depreciation measures is to stimulate the private sector to purchase particular types of assets. These measures

[1]Types of organizations that fit the latter two categories are too many to list. However, most of the special industry corporations and associations set up to undertake joint research and development, coordinate disinvestment in depressed industries, etc., are included.

[2]Straight line depreciation permits the acquisition cost of an asset (less salvage value of 5 to 10 percent) to be deducted in equal increments over the life of the asset. For example, a ¥1 million asset with a statutory life of 10 years fully depreciated with a zero salvage value, is permitted an annual depreciation of ¥10,000. Declining balances methods permit greater deductions in the years immediately after purchase.

TABLE IV-9
USEFUL LIVES OF SELECTED FIXED ASSETS

	Description of assets	Useful life (years)
(1)	**Tangible fixed assets other than machinery and equipment**	
	Reinforced concrete buildings (for office)	65
	Wooden buildings (for office)	26
	Steel vessels (2,000 tons or more)	15
	Steel tankers (2,000 tons or more)	13
	Steel fishing vessels (500 tons or more)	10
	Elevators	17
	Airplanes (for international service)	10
	Electronic computers	6
	Desks, chairs or cabinets made of metal	15
	Air conditioners or heaters	6
	Typewriters	5
	Trucks (for transport business)	4
	Passenger automobiles (taxis)	4
(2)	**Machinery and equipment**	
	Chemical condiment manufacturing plants	7
	Sugar refinery plants	13
	Beer brewery plants	14
	Raw silk manufacturing plants	10
	Worsted spinning plants	10
	Pulp manufacturing plants	12
	Chemical fertilizer manufacturing plants	10
	Polyvinyl chloride manufacturing plants	8
	Synthetic fiber manufacturing plants	7
	Rayon yarn or rayon staple manufacturing plants	9
	Plate or sheet glass manufacturing plants	14
	Cement furnaces	13
	Iron and steel manufacturing plants	14
	Metallic machine tool manufacturing plants	10
	Electrical machinery and appliances manufacturing plants	11
	Automobile manufacturing plants	10
	Lens or other optical instrument manufacturing plants	11
	Radio or television broadcasting equipment	6
	Hydraulic power generation plant for electric utilities	22
(3)	**Intangible fixed assets**	
	Patent rights	8
	Utility model rights	5

SOURCE: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), p. 82.

are available to firms submitting a "blue return."[1] Some of these special depreciation measures can be carried over to the following year if unusable in the current year, and firms may choose the option of crediting these special depreciation allowances to a tax-free special depreciation reserve, which is added back into income over the seven succeeding years (1/7 each year).

Special depreciation measures come in two broad types: increased initial depreciation and accelerated depreciation. In the former case, this simply means that, in addition to the ordinary depreciation schedule, the firm can deduct a specified portion of the acquisition cost of an asset during the first accounting period in which the asset was acquired. In the second case, firms may deduct part of the acquisition cost of the asset over and above the ordinary depreciation schedule for a designated number of consecutive accounting periods. In neither case can cumulative depreciation exceed acquisition cost. If an asset is eligible for more than one special depreciation measure, the firm can pick the most favorable choice, but such measures cannot be used in combination.

Current legislation on special depreciation measures is summarized in Table IV-10. The wide variety

[1]Filing a "blue return" requires that a corporation or, for that matter, an individual follow certain designated accounting principles and provide more information to the government than on "white returns." In exchange, certain tax benefits are provided. In practice, most special tax benefits are available only to those filing a "blue return.

TABLE IV-10
SPECIAL DEPRECIATION ALLOWANCES

	Allowance[1]
I. Increased initial depreciation	
A. Energy saving equipment (April 1, 1981-March 31, 1984)	30%
B. Designated plant and equipment	
1. Used for the prevention of environmental pollution	27
2. To which the newly developed special equipment to prevent air pollution or smoke dispersal are attached	20
3. For industrial water-supply, constructed in lieu of a well in designated areas	20
4. For recycling which may contribute to the promotion of efficient use of resources	20
5. Other depreciable assets which are newly developed to use effectively the energy resources	20
6. Composing an integrated system, such as combination of electronic equipment for data analysis and industrial machinery	13
7. Steel vessels used by ocean transportation enterprises	15
8. Aircraft used by air transportation enterprises	13
9. Buildings for stores and shops jointly operated by retailers	8
C. Designated plant and equipment in developing areas	
1. Underdeveloped areas, coal mining regions, agricultural areas, depopulated areas, severely depressed local industrial areas, and industrial development areas	20 (Equip.) 10 (Plant)
2. Okinawa industrial development region[2]	20 (Equip.) 14 (Plant)
3. Okinawa free trade zone[2]	27 (Equip.) 16 (Plant)
D. Machinery and equipment	
1. Acquired by small- or medium-sized enterprises or agricultural cooperative associations, etc., and whose prices are more than 1,100,000 yen	14
2. For medical use acquired by medical corporations and whose prices are more than 1,100,000 yen	20
E. Specific shafts and lifts for mining use	100
F. Forestation	
1. Special initial amortization on forestation expenses in the year in which the expenses are incurred	27
2. Special initial depreciation of the acquisition cost of the specific constructions for forestation	20
G. Special initial depreciation of the acquisition cost of facilities for members' mutual benefits (for buildings, the allowance is 16% or 8% of the acquisition cost) acquired by a designated association which accumulates (a) reserves for structural improvement project of small- and medium-sized enterprises, (b) reserves for promotion of small- and medium-sized enterprises as subcontractors or (c) reserves for promotion of traditional craft industries	27
H. Special amortization of expenditures for research and development purposes paid to specified associations mainly engaged in a research work	100
I. Special initial depreciation on assets acquired by small- and medium-sized enterprises according to the rationalization program under the law on extraordinary measures for small- and medium enterprises located together in specific areas	20 (Equip.) 10 (Plant)
II. Accelerated depreciation	
A. Houses newly built for rent	
1. Useful life under 45 years	50%/5[3]
2. Useful life 45 years or over	75%/5

TABLE IV-10 (continued)
SPECIAL DEPRECIATION ALLOWANCES

	Allowance[1]
B. New buildings eligible for requirements of urban area redevelopment act or special recession area act	40%/Life
C. Newly constructed storage tanks for crude oil which are confirmed by the Ministry of International Trade & Industry (MITI) as urgently needed for increase in storage capacity	36%/5
D. Specified fire-proof warehouses used for trade purposes and silos for grains	32%/5
E. Machinery used by members of the commercial and industrial cooperatives, textile industry, etc., which execute the plan for promotion of rationalization of small- and medium-sized enterprises, or the structural improvement project of textile industry	32%/5
F. A corporation where not less than 25% of the employees at the end of accounting period are handicapped persons	20%/Life 27%/Life (factory buildings)
G. Miscellaneous other accelerated depreciation benefits are given, including designated equipment for small- and medium-sized enterprises changing its business in order to cope with the grant of a preferential tariff, and the facilities for a qualified international tourist hotel	

[1]These allowances are in addition to the regular depreciation schedule.

[2]The special allowances for Okinawa are reported inconsistently in the two sources used.

[3]This designation is defined to mean that the firm is permitted to add 50 percent to ordinary depreciation for the first five years. Subsequent use is interpreted analogously.

SOURCES: *An Outline of Japanese Taxes, 1981* (Tokyo: Ministry of Finance, 1981), pp. 79-86, and Yuji Gomi, *Guide to Japanese Taxes, 1981-82* (Tokyo, Zaikei shōhō sha, 1981), pp. 308-324.

of policy goals embedded in these measures is obvious. More striking, perhaps, is the relatively narrow and specific nature of the incentives provided. Indeed, many of the measures are for "designated plant and equipment." This permits rather detailed and quite discretionary government manipulation. The pattern of special depreciation measures is biased towards manufacturing in general, especially by stimulating markets for types of goods for which the government would like to see greater domestic production.

Another measure frequently used for purposes of industrial policy is the allowance of a special tax-free reserve. The amounts credited to tax-free reserves are deductible as expenses, but serve to provide tax deferral, not tax exemption, since they must be later added back into income. For example, corporations can establish a reserve for bad debts, based on expected losses in the collections of receivables. With the bad debt reserve, the amount credited in each period must be added back, in full (less credit for actual bad debts), to income in the succeeding accounting period; the measure amounts, in effect, to a one-year tax postponement. Perhaps the main benefit of tax-free reserves is the provision of cash before the expense or loss is actually incurred. For highly leveraged Japanese corporations, use of this up-front cash is particularly valuable.

Japanese tax law classifies tax-free reserves in two groups: *hikiatekin* and *junbikin*. The former are roughly those justified by general accounting principles; e.g., the bad debt reserve. The latter are those introduced to achieve certain economic policy goals, even though they may not be fully justified by generally accepted accounting principles. Obviously, *junbikin* is the more important category for identifying specific industrial policy incentives.[1]

Many types of tax-free reserve funds are permitted. One of particular interest is a reserve against losses resulting from fluctuations in the market price of inventories. Although no empirical research has been found that estimates the impact of this incentive (or that estimates any tax incentive effects), one can well imagine that it should increase domestic price flexibility, both in the aggregate and relative

[1]Note however, that if the reserve is defined in such a way that the contingency costs for which it was designed never equals the size of the reserve (which appears to have been the case for the bad debt reserve, for example), then the distinction between *hikiatekin* and *junbikin* becomes considerably iess useful.

senses—particularly in an era of volatile exchange rates. According to the 1979 tax revisions, this reserve is scheduled to be abolished in five to ten years. The current schedule drops the maximum tax-free reserve deduction from 1.7 percent of the book value of inventories in FY 1979 to 0.4 percent in FY 1983.

Small companies may establish an overseas market development reserve. Specific conditions for this measure depend on type of activity and registered capital. The greatest incentives are for those firms capitalized under ¥100 million ($454,000 at ¥220 = $1), although some benefits accrue to firms capitalized as high as ¥1 billion ($4.5 million at ¥220 = $1). This specific reserve spreads the tax postponement over five years; one-fifth of the amount credited to the reserve fund in an accounting period must be added back as income in each of the five succeeding years. This clearly promotes exports by smaller companies, but the estimated tax losses from this provision have declined sharply since 1976 (¥12 billion in 1976 to ¥4 billion in 1981 as shown below in Table IV-12).

In addition, a specific reserve has been created to stimulate overseas investment for any size firm. An overseas investment loss reserve is permitted for acquisitions of stocks issued by, or the extension of credit to, designated types of companies under specified conditions. This reserve fund compensates for possible losses caused by a decline in stock price, among other things. It is calculated on the basis of acquisition cost, and can be held in full for five years. From the sixth year, one-fifth must be added back to income for five succeeding years. Although details and reserve amounts vary, the specific incentives favor investment in developing countries, foreign-sited nuclear fuel recycling facilities, and natural resources. In fact, certain natural resource investments can establish a reserve fund with a maximum of 100 percent of acquisition cost.

As noted above, each tax-free reserve provision is itself fairly narrowly bound, but taken together the range is fairly wide. Besides those mentioned already, other reserves with significant industrial policy impacts include: a reserve fund for investment losses in the free trade zone in Okinawa; a structural improvement project reserve for small and medium-sized enterprises; a reserve for the prevention of mineral pollution of metal mining; a depreciation reserve for specified railway construction; a depreciation reserve for the construction of atomic power plants; a depreciation reserve for the construction of specific gas distribution facilities; and a series of reserves targeted on specific types of business which meet special conditions.

Two such reserves that are particularly important for leading-edge industries are (1) a reserve for losses caused by the repurchase of electronic computers, and (2) a reserve fund for the guarantee of domestically produced computer programs. The reserve for repurchasing losses was created to permit computer and computer sales corporations (particularly the Japan Electronic Computer Corporation) to deduct a certain fraction of revenue growth as an expense.[1] Since most computer sales are based on lease arrangements, a company forced to repurchase a computer ahead of schedule can realize a loss. With the reserve provisions, however, such a loss can be debited against the reserve fund and thereby have its effects mitigated. The remaining reserve is added back to income after five years. This reserve was originally designed as part of a package of measures to make Japanese-based computer companies competitive with U.S.-owned companies—principally IBM. The reserve for software development allows companies to offset costs associated with debugging programs in the course of the industry's development. This measure—in effect, an "infant industry" aid—addresses the perceived weakness of the Japanese software industry vis-a-vis foreign firms.

Besides the special tax measures of targeted depreciation allowances and tax-free reserves, still other measures address specific industrial policy goals. For example, a corporation deriving income wholly or partly from overseas sales of technical services is permitted a special deduction from taxable income. This incentive is designed to stimulate export of (1) patents developed out of domestic research; (2) copyrights; and (3) such technical services as planning, consulting, and supervision related to the construction or production of plant and equipment or to specified technical services for agriculture or fishery. These service exports must bring in foreign currency or its equivalent, and in the case of technical services, only contracts worth ¥2 million ($9,090 at ¥220 = $1) or more are eligible. The export incentive from this deduction is relatively large—a firm may deduct as an expense 28 percent of revenue in case one, 8 percent in case two, and 16 percent in case three—although the absolute size of this deduction cannot exceed 40 percent of corporate income. Firms prospecting for mineral deposits overseas are also permitted special deductions, reserves, and exemptions. An investment tax credit was introduced, initially as a temporary measure, to encourage investment in specific industrial facilities such as those that conserve energy or reduce pollution levels. This credit was later extended in 1979 to aid only those corporations engaged in industries specified by law and cabinet order as permanently depressed industries or certain specially defined small- and medium-sized corporations. Also among other various credits available is one for research and experimental expenditures, which exceed the largest amount of such expenditures in any preceding accounting period since 1966. Twenty percent of such

[1]The activities of the Japan Electronic Computer Corporation (JECC) are discussed in detail in Chapter VI.

excess expenditures is credited against corporate tax up to a maximum of 10 percent of the corporate tax liability. This measure ends on March 31, 1983, unless specifically extended by the Diet.

Tax-free reserves and other special tax measures are less obviously biased towards the manufacturing sector under current legislation than the depreciation measures discussed earlier. No single sector obviously dominates as a beneficiary of these measures. However, small businesses and firms investing overseas (or otherwise exposed to certain foreign risks) receive special attention. As discussed above, two explicit export subsidies remain on the books: the provision dealing with overseas sales of technical services and the overseas market development reserve for small companies. The first of these measures, with several others, reflects the broad policy goals of "knowledge intensification," and illustrates a shift in emphasis from manufacturing per se to high technology—whether in manufacturing or services.

In general, because the Japanese corporate sector is so highly leveraged (i.e., debt-equity ratios, though declining, are still much higher than in other advanced industrial countries), any increase in cash-flow is particularly valuable, and all the more so during periods of recession or slower growth. For this reason, accelerated depreciation, tax-free reserves, and similar general tax measures built into the Japanese corporate tax system have strong direct benefits quite apart from any benefits that might be derived from special targeting on specific industries or activities.

C. Recent Trends

As noted above, the movement away from the specific benefits and incentives incorporated into the Special Tax Measures Law did not really begin until the late 1960s; such movement has been striking since then, however.

Government revenue losses (i.e., tax expenditures, in the language of U.S. tax jargon) from the Special Tax Measures Law have declined dramatically since the early 1970s (see Figure IV-2). Most notably, companies have benefited much less from special tax breaks since the early 1970s. Losses from special tax measures benefiting corporations declined, from nine percent of corporate tax revenues in 1972 to 1.9 percent (estimate) for 1981.[1] When their impact was larger than it has become now, these measures represented an important element in MITI's power vis-a-vis specific industries. Thus, their decline removes a major instrument of MITI influence.

The rough magnitude of the revenue effects of special tax measures in various policy areas is shown in Tables IV-11 and IV-12. These data are incomplete, since certain incentives built into the general tax laws, e.g., tax-free postal savings and the exclusion of capital gains from income, are not included in this compilation. However, virtually all the tax instruments that discriminate among specific activities, industries, and firms are included.

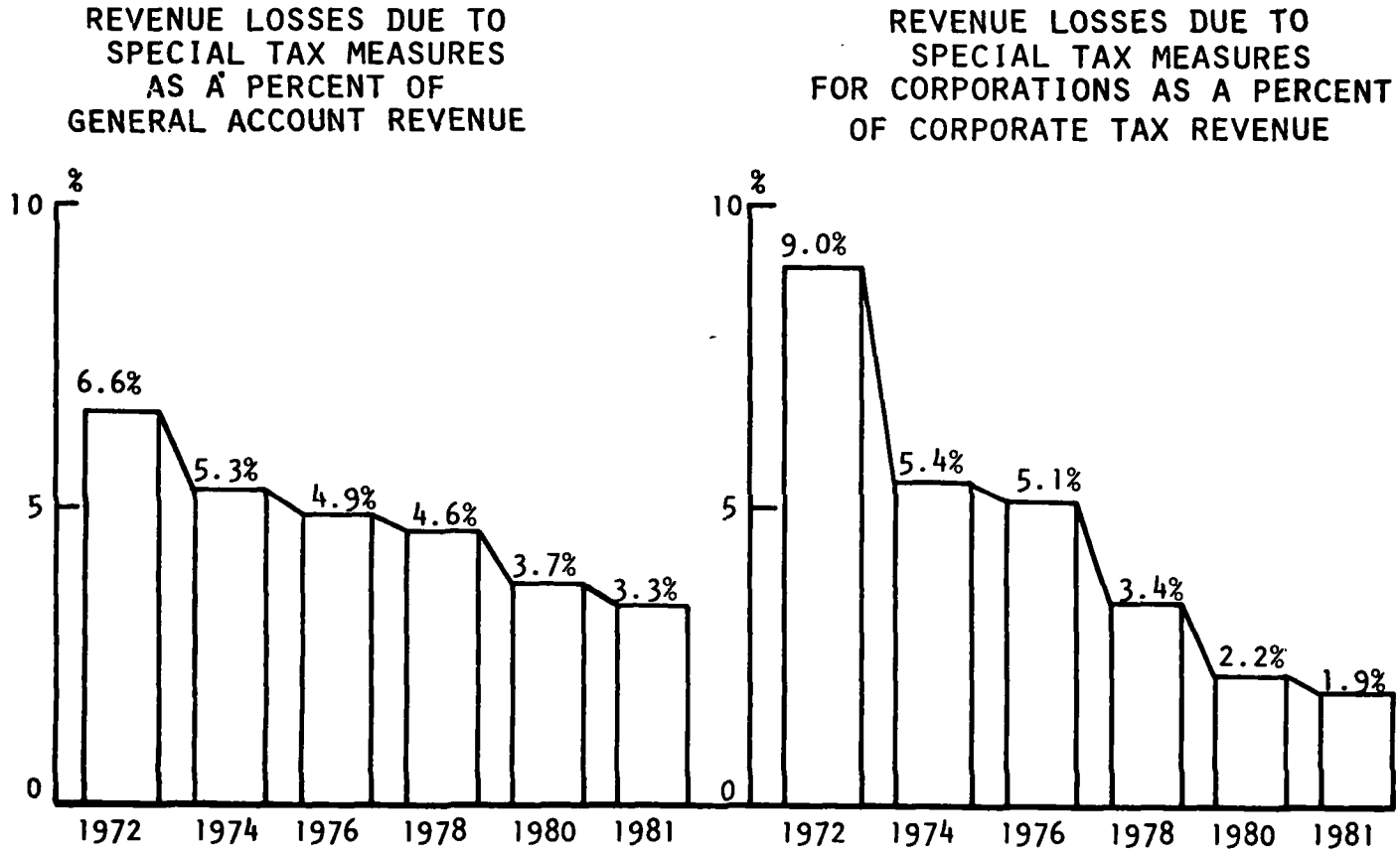
Table IV-11 shows the estimated revenue losses attributable to Special Taxation Measures for Enterprises since 1960. Although one can quibble about the way that various items are aggregated, the data provide extremely interesting patterns. In 1960, two items dominated: those designed to strengthen the financial position of firms and those designed to promote exports. The former declined steadily in importance. The latter grew in importance until 1970, but sometime after that disappeared altogether. In part, these declines reflect an increase, in relative terms, in the importance of more selective tax measures directed at natural resource and energy development, the promotion of science and technology, and the selective targeting of small businesses and agriculture.[2] Indeed, in 1981, the single most important subsidies provided to enterprises through the tax system were directed toward small businesses and agriculture, promotion of science and technology, protection of the environment, and natural resources and energy development. It is important to note, however, that funds for items 2 to 5 are going mostly to large firms, much the same group as received funds earlier for strengthening the financial position of firms and for the promotion of exports. The incentive effects of these new goals remain important, even though the government support that is received may seem to be—and in fact be—transferable, directly or indirectly, to other uses. Changes in tax losses from special tax measures broadly reflect changes in policy targets expressed in the various plans (compare the broad targets shown in Table IV-13 with Tables IV-11 and IV-12).

Table IV-12 provides greater detail to help identify more carefully the specific contributions to the aggregate revenue losses. Unfortunately, the categories in Tables IV-11 and IV-12 do not correspond completely. Still, the detail in Table IV-12 is useful for identifying the impact of individual tax instruments, since 1972, that are directly relevant to the goals of this study. For example, under Item 3, Resource Development, Measure No. 10, the Overseas Investment Loss Reserve, shows an estimated zero loss since 1979. This is surprising, since, as

[1]Obviously revenue losses are only estimates. We were not provided with the methodology or assumptions used, and therefore we have no basis for evaluating the quality of these estimates.

[2]Since 1975, those categories with a growing share mostly have experienced smaller than average absolute cuts. The main exception is the promotion of science and technology.

Figure IV-2



SOURCE: TAX BUREAU, MINISTRY OF FINANCE

TABLE IV-11
SPECIAL TAXATION MEASURES FOR ENTERPRISES: ESTIMATED REVENUE LOSSES

(100 MILLION YEN, %)

Description	1960		1965		1970		1975		1981	
	Revenue losses	Share	Revenue losses	Share	Revenue losses	Share	Revenue losses	Share	Revenue losses	Share
1. Small business and agriculture, etc.	¥ 4	0.9%	¥104	15.8%	¥ 296	16.4%	¥ 800	26.3%	¥ 570	28.7%
2. Environment	15	3.2	69	10.5	195	10.8	980	32.2	380	19.1
3. Regional development	0	0.0	6	0.9	22	1.2	120	4.0	110	5.5
4. Natural resources and energy	10	2.1	49	7.4	124	6.8	290	9.5	260	13.1
5. Promotion of science and technology	15	3.2	44	6.7	145	8.0	380	12.5	470	23.6
6. Strengthening of the financial position of firms	312	66.2	141	21.4	221	12.2	450	14.8	170	8.5
7. Promotion of exportation	115	24.4	246	37.3	759	42.0	0	0.0	0	0.0
8. Income measurement, etc.	0	0.0	0	0.0	47	2.6	20	0.7	30	1.5
Total	471	100.0	659	100.0	1,809	100.0	3,040	100.0	1,990	100.0

SOURCE: Tax Bureau, Ministry of Finance.

TABLE IV-12
REVENUE LOSSES ATTRIBUTABLE TO SPECIAL TAXATION MEASURES: 1972-1981

(UNIT: BILLION YEN)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1. Promotion of saving, etc.										
1. Exemption for interest on small (minor) deposits	69	71	87	97	109	131	147	159	206	263
2. Separate taxation on interest income	28	27	22	11	12	7	8	7	9	13
3. Separate taxation on dividend income	41	53	49	50	34	30	35	42	51	58
4. Life insurance premiums deduction	76	88	89	106	111	147	152	156	163	191
5. Others	5	7	6	7	8	9	10	11	11	12
2. Environmental development, regional development, etc.										
6. Reduced taxation for obtaining houses	40	74	106	84	83	81	97	102	110	106
7. Reduced taxation for over populated city relief measures	3	4	3	0	2	1	0	3	1	3
8. Reduced taxation for regional development	3	5	8	12	12	14	12	13	8	11
9. Reduced taxation for pollution control	34	38	49	61	37	24	29	37	28	33
3. Resource development, etc.										
10. Overseas investment loss reserve	14	15	19	26	20	12	7	0	0	0
11. Atomic power plant construction reserve	5	10	1	1	0	15	8	18	19	21
12. Expenditure in prospecting for mineral deposits	1	2	4	2	2	3	0	0	0	0
4. Promotion of technology, modernization of equipment										
13. Experimental and research expenses tax credit	9	20	21	21	14	17	15	21	24	27

14. Overseas technical service transactions	4	5	10	12	8	12	10	13	14	15
15. Electronic computer repurchase loss reserve	10	6	3	5	5	3	0	3	2	2
16. Special depreciation for specified plant & equipment	31	13	17	12	11	9	15	14	16	16
17. Special depreciation of machineries for small enterprises	47	52	54	60	54	50	45	62	53	57
18. Others	1	2	1	1	4	6	9	8	4	5
5. Fulfilling internal reserves & strengthening corporate profile										
19. Price fluctuation reserve	15	2	12	19	2	3	0	0	0	0
20. Unusual casualty reserve	13	20	17	18	13	18	1	3	3	5
21. Security transaction responsibility reserve	2	.2	0	0	0	0	0	3.0	1.0	0
22. Reserve for overseas market development by small enterprises	8.0	3.1	7.0	12.0	12.0	8.0	9.0	7.0	5.0	4.0
23. Allowance for blue return	20.6	28.4	20.0	28.0	27.0	25.0	28.0	32.0	38.0	42.0
24. Bad debt reserves by small enterprises	1.6	4.4	5.0	7.0	7.0	7.0	6.0	5.0	0	0
25. Other	5.2	5.2	5.0	5.0	6.0	6.0	6.0	8.0	6.0	7.0
6. Others										
26. Special computation of medical income based on social insurance	80.0	88.0	105.0	132.0	158.0	189.0	226.0	157.0	168.0	141.0
27. Special allowance for old and dependent	—	—	—	—	—	—	—	14.0	15.0	17.0
28. Others	13.8	3.5	7.0	7.0	8.0	13.0	20.0	23.0	26.0	27.0
29. Additional taxation on entertainment expenses (+)	129.7	180.0	207.0	235.0	267.0	396.0	416.0	512.0	543.0	638.0
Total	450.7	464.5	520.0	561.0	492.0	444.0	479.0	409.0	438.0	438.0

SOURCE: Tax Bureau, Ministry of Finance.

TABLE IV-13
POLICY TARGETS OF ECONOMIC PLANS

National income doubling plan (enacted in December 1960)	Economic and social development plan (enacted in March 1967)
Doubling of scale of national economy	Correction of imbalance and modernization of economy and society
(1) Consolidation of social capital	(1) Stabilization of prices
(2) Inducement to modernization of industrial structure	(2) Raising efficiency of economy
(3) Promotion of international trade and cooperation	(3) Promotion of social development
(4) Upgrading of human capabilities and promotion of science and technology	(4) Improvement of conditions for long-term economic growth
(5) Easing of dual structure and securing of social stability	(5) Improvement of social capital

Basic economic and social plan (enacted in February 1973)	New economic and social seven-year plan (enacted in August 1979)
For active welfare society	Pursuit of prosperous, satisfied society
(1) Creation of affluent environment	(1) Attainment of full employment and stabilization of prices
(2) Securing of prosperous, stabilized living	(2) Stabilization and enhancement of national life
(3) Stabilization of prices	(3) Cooperation with and contribution to international economic and social development
(4) Promotion of international cooperation	(4) Ensuring of economic security and fostering of basis for sound economic growth
	(5) Reconstruction of public finance and new monetary responses

SOURCE: The Japan Development Bank, *Facts and Figures about the Japan Development Bank* (1981), pp. 6-7.

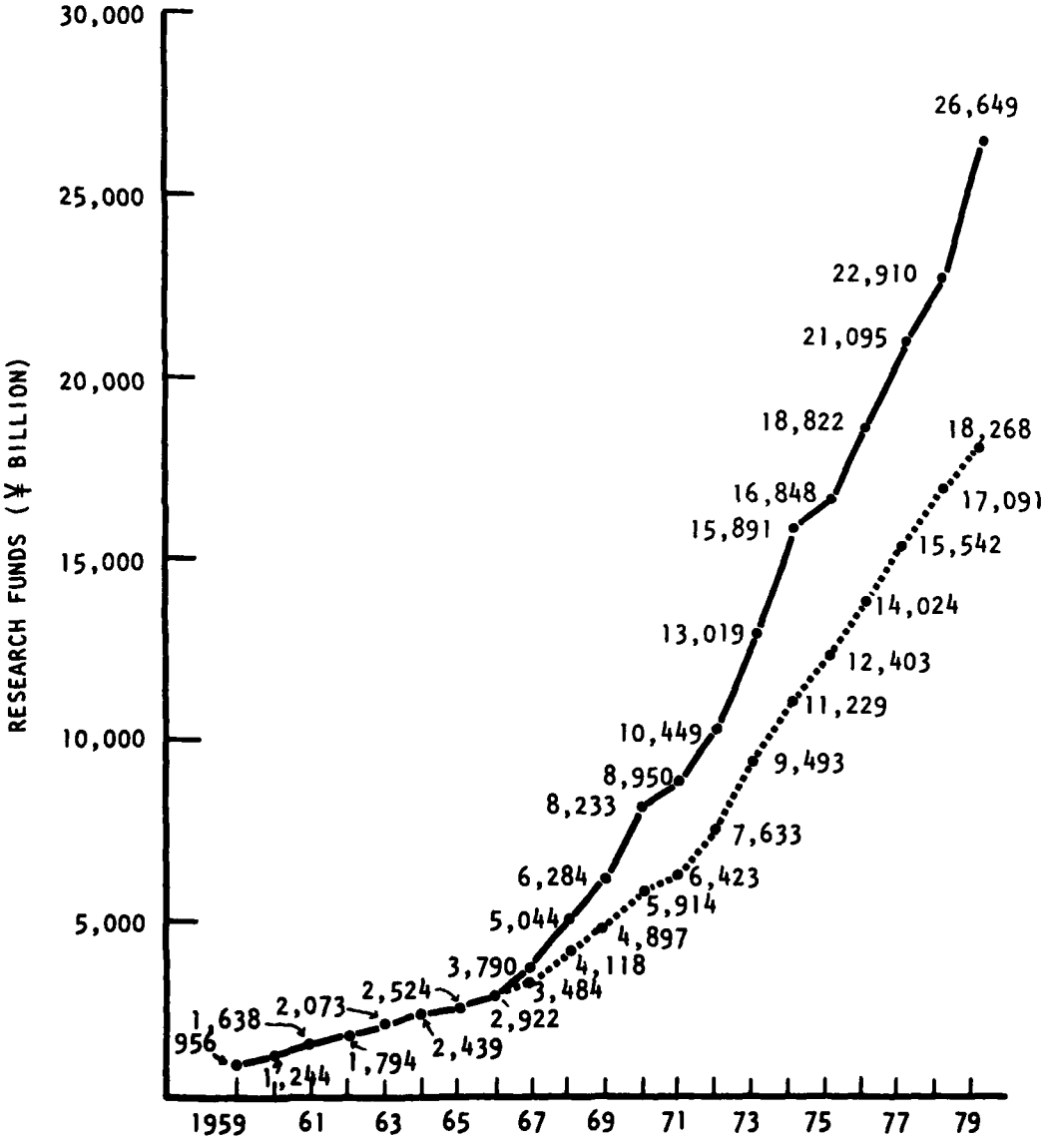
noted earlier in the chapter, this measure would appear to be relatively important, at least at first glance, given the wording of the tax law, Japan's level of economic development, its suitability as a capital exporter, and its government's expressed interest in promoting resource development overseas. Either firms are simply not taking advantage of a very lucrative benefit, or there are constraints on its use that are not stated. The next measure on the list, No. 11, for Atomic Power Plant Construction, has grown rapidly in importance in recent years. Another important measure is under Item 4, No. 13, for Experimental and Research Expenditures. This is estimated to have cost the government some ¥27 billion ($123 million at ¥220 = $1) in lost revenue in 1981. Measures No. 16 and 17, the special depreciation allowances for the promotion of high-technology plant and equipment and for machinery acquisition by small enterprises, led to a revenue loss of ¥73 billion ($332 million at ¥220 = $1) in 1981.

One cannot, of course, extrapolate simply from a calculation of tax losses to the degree to which firms have been assisted as a matter of policy. Nor can one assume that the categories used by the Ministry of Finance for presenting this data truly reflect their components, and thus the policy incentives. The most striking case revealed in Table IV-12 is in category 2, environmental development, regional development, etc., for which the major component by far is the tax subsidy given to home purchasers.

Recognizing the data limitations, some "ballpark" estimates of the policy effects are possible. The Science and Technology Agency (STA) has provided one extremely crude estimate of the impact of tax credits on total private expenditures on testing, research, and development (see Figure IV-3). Based in the relationship between national income and research expenditures before introduction of the tax incentive, STA calculated an average elasticity figure (the percentage change in research expenditures re-

Figure IV-3

R&D EXPENDITURE WITH SPECIAL TAX CREDITS
COMPARED TO ESTIMATED R&D EXPENDITURE
WITHOUT SPECIAL TAX CREDITS



SOURCE: PLANNING BUREAU, SCIENCE AND TECHNOLOGY AGENCY, OCTOBER 1981.

sulting from a one percent change in national income). This figure was used to estimate research and development spending as if there were no tax credit for the rest of the period, after its introduction in 1967. As can be seen, the gap opens up immediately and grows continually. Crude as this procedure is, it nevertheless reveals something, at least about the interest that STA officials have in the efficacy of their own policies. In effect, STA is claiming here that the tax credit increased the average elasticity of R&D expenditures to national income by some 0.25 percentage points (from 1.06 to 1.31).

D. Conclusions

Several important conclusions emerge from this overview of the Japanese tax system. First, the system is based on conventional taxation principles, i.e., it is generally comparable to systems in other advanced industrial countries; indeed, the system remains largely based on the one introduced by allied occupation authorities. Secondly, within this conventional framework, there is a specific bias in favor of savings and investment. This is achieved by avoiding double taxation of corporate income (perhaps to the point of over-compensating), by excluding (much, if not most) interest income for small savers from taxable income, by favoring capital gains over dividend income, and by keeping the average tax burden low (compared with other advanced industrial countries). Thirdly, within this bias in favor of savings and investment, there is a special and additional bias in favor of the manufacturing sector. This is achieved by the limiting of many special tax benefits to designated plant and equipment. Now and during the remainder of the 1980s, this bias is shifting, as services, particularly in high technology areas, become more important to competition and economic growth.

In general, the promotion of saving and investment as a whole, and for the benefit of manufacturing industries broadly defined, seems to us more important to economic growth and industrial progress than various special tax measures designed to aid specific industries, particularly since the early 1970s, when the total benefits provided by the latter began to decline precipitously. For example, perhaps the most narrowly targeted of the tax measures have always been the special depreciation measures for *specified* plant and equipment and for machinery for small enterprises. Estimated tax losses in 1981 from the former were ¥16 billion, from the latter ¥57 billion, for a total of ¥73 billion. This is less than 15 percent of the (incomplete) list of revenue losses attributable to special taxation measures shown in Table IV-12, which in turn totals only 3.3 percent of general account revenue (down from 6.6 percent in 1972, as shown in Figure IV-2). These depreciation measures unquestionably bias investment towards the acquisition of targeted types of equipment by lowering their effective price. Nonetheless, the total benefits provided by such narrowly targeted measures are small compared with other, less narrowly targeted special tax measures. Moreover, total estimated tax losses from special taxation measures are much less than comparably estimated tax losses from the promotion of saving and investment through such general measures as the exclusion from taxation of interest income on postal savings and of capital gains income on securities transactions. Official estimates of these tax losses are unavailable—indeed, the MOF is prevented from officially estimating (or at least releasing) tax losses from the postal savings exclusion. A simple "ballpark" estimate of the latter, assuming postal savings of ¥70 trillion, and a 4.5 percent interest rate, yields an annual interest income of ¥3.15 trillion; assuming that income taxes are paid on virtually none of these deposits and a marginal tax rate of 30 percent, this would yield a tax loss of ¥0.9 trillion.[1] By itself this one general tax measure yields a tax loss roughly equal to the total estimated tax losses from all special tax measures in 1981, as shown in Table IV-12. By implication, the tax losses from all general tax measures would be much larger, perhaps by an order of magnitude, than those stemming from special targeted tax measures.

Two characteristics of targeted tax policy in Japan are important: (1) its general use as a carrot rather than a stick, e.g., using special targeted tax measures to provide an improvement to cash flow or profits rather than a penalty against actions already taken, and (2) in this same spirit, the granting of benefits to both producers and consumers of the particular sectors or goods chosen for promotion. Important "market making" tax benefits are on the books for both leading edge and declining industries. As in the past, targeted tax measures can be so narrowly focused as to benefit specific firms (e.g., the special loss reserve for repurchase of computers) or specific types of activities (e.g., overseas prospecting for raw materials).[2] Yet in our view, the evolution of the system is as important as the level of benefits provided at any one point in time. During the 1950s and 1960s, special tax measures were ex-

[1] In April 1982, postal savings deposits totaled ¥70.42 trillion (the two main types of deposits totaled ¥6.53 trillion in ordinary deposits, and ¥62.22 trillion in savings certificates). The interest rate on ordinary savings effective at that time was 3.12 percent; the rates on savings certificates ranged from 4.25 percent for under one year to 6.0 percent for 3 years or more. See Bank of Japan, *Economic Statistics Monthly*, No. 425 (August 1982), Tables 46 and 60.

[2] The way in which tax measures are combined with other industrial policy instruments to support a particular industry is discussed in detail with regard to the information industry in Chapter VI. Of special note in that discussion is the wide variety of special tax measures applied at different times in this one area over a 20-year period.

tremely detailed, but as noted above, they have declined substantially since the early 1970s, both in terms of their absolute number and the degree of benefit allowed. Some of this extremely detailed targeting remains, most notably in the special depreciation measures for designated plant and equipment. In the earlier postwar years, targeted tax instruments usually had the goal of stimulating economic growth and comparative advantage, meaning, at that time, basic manufacturing industries. As new social welfare goals became increasingly important during the 1970s, they too came to be addressed by new tax measures.

Partly as a matter of principle, but mostly because of the large government budget deficits of recent years, the Ministry of Finance continues to fight for even further reductions in special targeted tax measures. As a result, one can expect to see a further decline in their importance; the major exceptions will be for declining industries, small businesses, and leading edge industries (in both goods and services), but the quantitative benefits, as measured by tax losses, will remain small. Indeed, as noted above, estimated tax losses from measures to promote science and technology is the only broad category in the published statistics that continued to expand in absolute terms. Special tax measures proved very useful in the past, and if perceived as necessary to achieve a particularly important goal, they might well be introduced again in the future. In general, however, they are on the decline, relative to the past. If they do reappear as a more important instrument than they have become today, they will be reintroduced on pragmatic, i.e., expediential, grounds, not because of some "master plan" to use the tax system per se to promote industrial development.

CHAPTER V

Monetary Policy and Financial Controls as Industrial Policy

Financial controls are among the most powerful instruments available to the Japanese government to regulate, or otherwise intervene in, the economy. This is true, of course, for virtually any economy, but particularly so in Japan, where a legacy of detailed financial controls from the prewar and earlier postwar periods remains. For example, foreign exchange transactions are still subject to administrative intervention and likely to remain so indefinitely, although they are now somewhat liberalized in law and practice. So-called "window guidance," i.e., oral (and therefore unverifiable) suggestions by officials at the Bank of Japan (BOJ), directs bank loans in line with current policies. Many interest rates remain explicitly controlled. The Ministry of Finance (MOF), which oversees both monetary and fiscal policy (monetary policy indirectly through the BOJ), has also retained far more regulatory control over the banking and securities industries, which are within its purview, than MITI has retained over the manufacturing and nonfinancial service industries, which are under its jurisdiction. In other words, while new legislation and practices have relaxed many aspects of direct government intervention in financial activity, the Japanese financial system remains among the most tightly controlled of any of the advanced industrial countries. Yet, the movement toward further liberalization, which has been especially evident since the early 1970s, is virtually certain to continue.

Just after World War II, private accumulations of capital in Japan were virtually destroyed. As a result, the central government was almost the only source of investment funds, and much of its money came initially from U.S. aid. To enhance reconstruction and recovery, available funds were allocated in great detail. Government organizations lent some funds directly to private investors. Other funds were distributed through the banking system. As the economy began to grow rapidly, private demand for funds expanded sharply, far exceeding the supply available from internally generated funds and security issues.[1]

[1]For legal and institutional reasons, equity and bond markets were extremely slow in developing, relative to other advanced industrial economies.

The gap was filled by the private banking system and official financial institutions. The large commercial banks provided most of the external funds required by the private sector, but not without help. The banking system lacked the resources to meet investment demand on its own. During the high growth period, commercial banks became heavily dependent on the BOJ as a source of reserves. This led to the classic "overloan" position that is so freqently discussed in the literature, i.e., loans exceeded deposits. Given the tremendous loan demand, the reliance of commercial banks on reserves from the central bank, the underdeveloped nature of the securities markets, and the control of a large share of personal savings by official financial institutions, the monetary authorities could strongly influence both the volume of lending and the direction in which investment funds would flow. Control of the direction of funds was most evident near business cycle peaks, when the macroeconomic requirement to cool down the economy naturally fell most heavily on those sectors considered less important in terms of economic development at the time. This system remained generally in place until the early 1970s, when balance of payments surpluses began to accumulate. As a result, controls on the flow of capital both in and out of the country were eased somewhat, firms became more multinational, and the banking system's share of the total supply of investment funds began to decline.

A. Historical Evolution[2]

Historical roots of the Japanese financial system can be traced from early in the Meiji Restoration. In

[2]This discussion draws upon G. C. Allen, *The Japanese Economy* (New York: St. Martin's Press, 1981), Chapter 4; Henry C. Wallich and Mable I. Wallich, "Banking and Finance," in Patrick and Rosovsky, op. cit.; Andreas R. Prindl, *Japanese Finance: A Guide to Banking in Japan* (New York: John Wiley & Sons, Ltd., 1981), Chapters 1-3; L. S. Pressnell, ed., *Money and Banking in Japan* (London: The Macmillan Press, Ltd., 1973), chapters 1-10; and T. F. M. Adams and Iwao Hoshi, *A Financial History of the New Japan* (Tokyo: Kodansha International Ltd., 1972).

1880, the Yokohama Specie Bank, which ultimately became the Bank of Tokyo, was founded as the foreign financial arm of the Japanese government. In 1882, a banking act created the Bank of Japan; in 1900, the Industrial Bank of Japan was founded with a charter to finance new industrial companies. During this same period, a variety of semi-governmental institutions such as the Agricultural Cooperative Banks were formed. Individual banks in this category were given distinctly different missions, both complementing the newly developing commercial bank networks and segmenting financial markets. Much later, under impetus of colonial expansion and war in the 1930s, the Japanese financial system became highly centralized, both through the growth of *zaibatsu*-controlled commercial banks and through increased government control of financial activity.

After World War II, SCAP moved to dissolve the *zaibatsu* and to loosen the government's highly centralized control over the economy. This had two immediate implications for the banking industry. First, the dissolution of the *zaibatsu* broke the formal, organizational ties between banks and various manufacturing and commercial enterprises, though commercial relationships of lender to borrower were of course retained. Secondly, the once-powerful special-purpose government banks were either dissolved or had their functions dramatically altered. Those banks with special roles abroad, i.e., the government banks in former colonial areas and the Yokohama Specie Bank, which had a special role in foreign exchange transactions, were closed outright.[1] The three major debenture-issuing special-purpose government banks for long-term financing were made private, and given the choice of confining their business to deposit banking (and short-term lending) or long-term financing; the Hypothec Bank and the Hokkaido Development Bank chose to become deposit banks, and the Industrial Bank of Japan chose to undertake long-term financing.[2]

A new financial institution was created, called The Reconstruction Finance Corporation (Fukkō Kinyū Kinkō), which derived its funds directly from the Bank of Japan (and in turn from U.S. aid). As demands for credit grew, the Industrial Bank of Japan increasingly resumed its former role (though independent from government), and several new government long-term credit banks were established for similar purposes. These banks raised funds by issuing debentures that were purchased partially by ordinary banks and partially by the Government Trust Fund Bureau. The main government banks were the Japan Development Bank (targeting basic manufacturing industries), the Agricultural, Forestry, and Fishery Corporation, The Small Business Finance Corporation, and The Export-Import Bank. The Japan Development Bank inherited the functions of the Reconstruction Finance Corporation when the latter was disbanded. Initially, the Japan Development Bank received most of its capital from the U.S. counterpart funds, later from the Trust Fund Bureau and other government accounts. A new institution, the Long-Term Credit Bank of Japan, was formed in 1952 with 50 percent government backing and the rest from a consortium of financial institutions and industrial corporations.[3]

After the occupation, the main *zaibatsu* banks, which had changed their names during the occupation as a means of deemphasizing their prewar history, resumed their former names, and integrated themselves into the large industrial and commercial conglomerates that were reemerging. However, relationships were less exclusive than in prewar days. These so-called group banks (i.e., the former *zaibatsu* banks) developed significant business outside of their respective groups. In effect, they became fully competitive with the other major so-called city banks, i.e., large-scale commercial banks with national branching. There are currently 13 city banks. They serve as the major sources of funds for large business concerns. Local (or regional) banks service mainly small and medium-sized business, although some local banks are larger than the smaller city banks.

Many other specialized public and private financial institutions came into being over the years; these are summarized in Table V-1. Creation of a segmented financial market in which groups of financial institutions draw on different sources of funds and lend to different types of industry follows a prewar pattern. Segmentation was a deliberate policy decision, which enhanced control of financial activity and, in the Japanese context, probably accelerated reconstruction and economic growth, at least until the 1970s. The importance of the large city banks can be seen in Table V-2. They controlled half of all private financial institution's assets in 1953, a share which fell only to 32 percent by the end of the third quarter 1981. Local banks have also lost share. The gain has been distributed widely among other institutions.

A more accurate picture of the financial system emerges by including government institutions, which continue to play an important role in the economy (Figure V-1). From the mid-1950s to 1980, the private banking system's share of total lending slowly declined, while the share of other, more specialized private lending institutions steadily increased. The government's share of total lending, after declining

[1]Subsequently, the Bank of Tokyo was created as a successor to the Yokohama Specie Bank, also with a view toward specializing in foreign exchange. However, its purview was much less exclusive, as other commercial banks were also permitted to deal in foreign exchange.

[2]The Hypothec Bank has since re-emerged as one of the three long-term credit banks.

[3]The Long Term Credit Bank has since become a fully private organization.

TABLE V-1
JAPANESE FINANCIAL INSTITUTIONS: 1978

Private financial institutions		
(A)	Commercial banks	City banks (13)
		Regional banks (63)
		Foreign banks (54)
		Foreign Exchange Bank (Bank of Tokyo)
(B)	Long-term credit banks	Industrial Bank of Japan
		Long-Term Credit Bank of Japan
		Japan Hypothec Bank
		Trust banks (7)
(C)	Financial institutions for small businesses	Mutual loan & savings banks (71)
		Credit associations (470)
		Credit corporations (489)
		Labour credit associations (47)
		Central Bank for Commercial and Industrial Co-operatives
(D)	Financial institutions for agriculture, forestry & fisheries	Central Co-operative Bank for Agriculture & Forestry
		Agricultural co-operatives (4,738)
		Fishery co-operatives (1,695)
		Forestry co-operatives (2,139)
(E)	Insurance companies and securities companies	
Government financial institutions		
	Central bank	The Bank of Japan
	Banks	Japan Development Bank
		Export-Import Bank of Japan
	Public corporations	People's Finance Corporation
		Housing Loan Corporation
		Agricultural, Forestry and Fishery Finance Corporation
		Small Business Finance Corporation
		Hokkaido and Tohoku Development Corporation
		Finance Corporation for Local Public Enterprise
	Others	Trust Fund Bureau (formerly Treasury Deposits Bureau)
		Overseas Economic Co-operation Fund
		Post Office Life Insurance
		Postal Annuity Special Account

SOURCE: G.C. Allen, *The Japanese Economy* (New York: St. Martin's Press, 1981), p. 45 & 57.

from the mid-1950s to the late 1960s, increased significantly over the last decade (while remaining less than 14 percent of total lending). Miscellaneous private financial institutions (including those targeting small business) have shown the greatest growth in lending share, though their growth was considerably slower during the 1970s.

Japan's saving rate is extraordinarily high compared to other advanced industrial countries (see Table V-3). Until recently, households, corporations, and the government all made major contributions to this high rate. The important recent change has been the large budget deficits which have sharply decreased government saving. Until the early 1970s the public sector contributed some 22 percent of gross savings (nearly 30 percent of net savings), despite deficits on the national general account after 1965. The recent large budget deficits have sharply reduced public sector saving to only some 8 percent of gross saving.

Personal saving continues to average more than 19 percent of disposable income, which represents roughly 40 percent of gross savings.[1] This is not the place to describe in detail the extensive discussion that exists on the sources of this high savings rate. However, from this discussion one can safely conclude that while some causes of the high personal saving rate have recently become weaker, most remain more or less in force—and some, such as the fears of price fluctuations and of future slow growth

[1]Table V-3 shows that personal savings averaged 21.6 percent of disposable income for 1974-80. The atypically high saving triggered by the 1974 recession (24 percent) and its slow fall somewhat masks the declining trend of recent years.

TABLE V-2
ASSETS AND ASSET SHARES OF PRIVATE FINANCIAL INSTITUTIONS,[1] 1953, 1963, 1973, AND 1981

Institutions	Assets in 1953[2]		Assets in 1963[2]		Assets in 1973[2]		Assets in 1981[6]	
	Amount (billions of yen)	Percent of total	Amount (billions of yen)	Percent of total	Amount (billions of yen)	Percent of total	Amount (billions of yen)	Percent of total
City banks	2,641	50.5	14,416	41.8	64,917	36.1	130,659	32.0
Local ("regional") banks	1,065	20.4	6,361	18.4	30,828	17.1	74,958	18.3
Trust banks (banking accounts)	97	1.9	754	2.2	5,562	3.1	13,749	3.4
Long-term-credit banks	250	4.8	2,061	6.0	12,214	6.8	28,462	7.0
Mutual loan and savings banks	342	6.5	2,648	7.7	14,608	8.1	34,314	8.4
Credit associations	243	4.6	2,667	7.7	18,111	10.1	42,595	10.4
Credit cooperatives[3]	20	0.4	519	1.5	3,757	2.1	9,703	2.4
Labor credit associations[3]	10[4]	0.2	88	0.2	790	0.4	3,019	0.7
Agricultural cooperatives[3]	347	6.6	1,847	5.3	12,852	7.1	28,510	7.0
Fishery cooperatives[3]	24[4]	0.5	131	0.4	876	0.5	2,092	0.5
Subtotal	5,039	96.4	31,492	91.2	164,515	91.4	368,061	90.1
Trust accounts of all banks	189	3.6	3,029	8.8	15,486	8.6	40,456	9.9
Total[5]	5,228	100.0	34,521	100.0	180,001	100.0	408,517	100.0

[1] An institution is associated with each of the groups serving small business, agriculture, and fisheries that in greater or lesser degree acts as a central bank, accepting surplus funds and lending them out to members or investing them in other forms. While there are specialized credit facilities serving each of the major producers' groups—the degree of specialization varies considerably—there are no institutions specifically designed to serve the consumer in his role as homeowner or personal borrower. Some amount of credit is available to households, of course, through the commercial banking system and the banks serving principally small business.

[2] End of calendar year.

[3] Assets = sum of liabilities (deposits plus capital and borrowings).

[4] Data for 1954.

[5] Does not include government-financed institutions or the funds of the central institutions of credit associations and cooperatives that are partly derived from deposits by their member institutions.

[6] End of September.

SOURCE: Bank of Japan, *Economic Statistics Annual*, 1954, 1963, and 1973: as reported in H.C. Wallich and M.I. Wallich, "Banking and Finance," in H. Patrick and H. Rosovsky (eds.), *Asia's New Giant* (Washington, D.C.: The Brookings Institutions, 1976), p. 281; and Bank of Japan, *Economic Statistics Monthly*, no. 416 (November 1981), pp. 41-66.

in real after-tax income have probably become stronger as economic growth rates have declined relative to earlier postwar years.

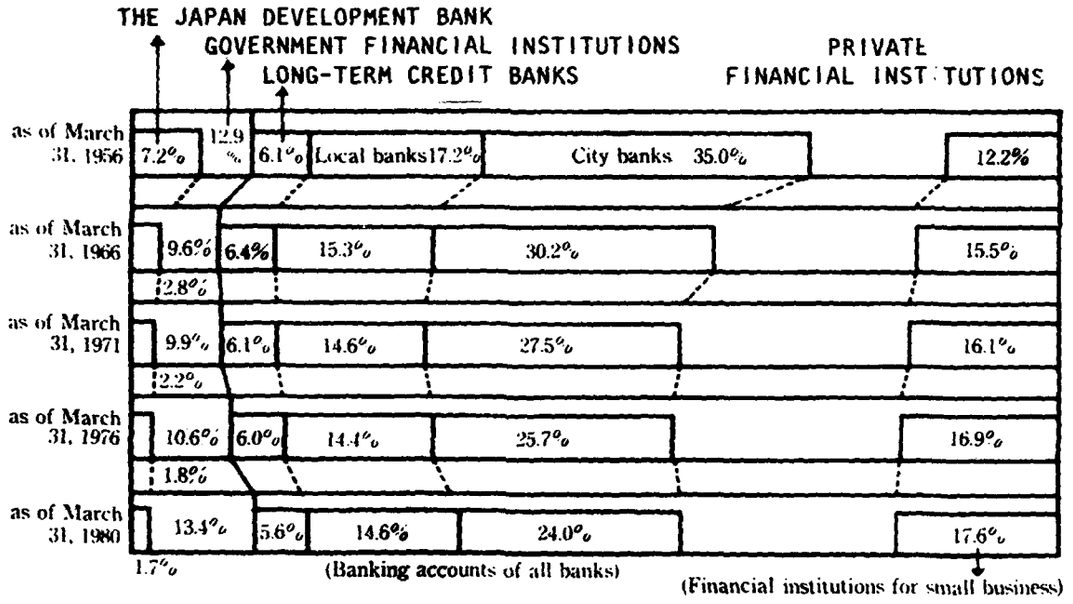
The corporate sector accounts for roughly one-half of national savings (gross). Accrued depreciation represents the major source of corporate savings. Other contributing factors include relatively high profits and moderate taxes. High corporate savings also reflect in part a practice of relatively low dividend payouts for the corporate sector as a whole, which consists in large part of closely-held corporations. Indeed, the dividend payout ratio for the major enterprises surveyed regularly by the BOJ, which tend to be more widely-held, is some 40 percent of profits,[1] more than double the 15 percent figure reported for the corporate sector as a whole.

Corporations account for the largest share of total borrowing in the non-financial sector. Indeed, corporate finance has dominated Japan's financial markets.

[1]Profits are defined here as current net profits plus surplus accrued from the previous fiscal year.

Figure V-1

COMPONENT RATIOS OF
OUTSTANDING LOANS OF FINANCIAL INSTITUTIONS (%)



SOURCE: THE JAPAN DEVELOPMENT BANK, FACTS AND FIGURES ABOUT THE JAPAN DEVELOPMENT BANK (1981), P. 45.

TABLE V-3
SAVING RATES, BIG SEVEN ADVANCED INDUSTRIAL COUNTRIES

	1960-66			1967-73			1974-80		
	I	II	III	I	II	III	I	II	III
Japan	33.2	20.7	17.2	37.7	24.0	18.1	32.6	19.5	21.6
United States	19.6	9.5	7.2	19.2	8.9	8.4	18.7	6.5	7.2
Germany (F.R.)	27.5	18.6	16.0	26.9	16.7	16.1	23.2	11.9	13.9
France	24.8	15.0	12.2	25.6	15.9	12.8	22.9	11.8	13.2
United Kingdom	18.2	10.1	5.6	19.9	11.2	5.7	18.1	7.0	8.9
Italy	24.6	16.4	17.5	23.2	15.1	19.2	22.0	12.2	21.8
Canada	21.2	9.2	5.5	22.0	10.9	6.9	21.6	10.7	10.7
Total big seven	21.9	11.9	9.4	23.0	12.6	11.0	22.3	10.4	12.3

KEY: I Gross saving as a percentage of GDP
II Net saving as a percentage of GDP
III Net household saving as a percentage of disposable household income
SOURCE: Organisation for Economic Co-operation and Development, *OECD Economic Outlook, Historical Statistics, 1960-1980* (Paris: 1982), pp. 64-65

This reflects several factors. First, at least until recently, the government sought a roughly balanced budget (except for capital investment), and thus imposed relatively minor claims on the financial system (again, until recently). Secondly, consumer borrowing has been, and continues to be, low compared with other advanced industrial countries. Finally, corporate expansion has been financed largely by debt (rather than equity), composed principally of bank loans and trade credit rather than bonds. There is a slow movement away from the traditionally heavy corporate reliance on bank loans and trade credit.[1] In the early 1950s, financing of new industrial investment came 25 percent from self-financing, some 60 percent from bank advances, and the remainder from share and bond issues and direct government loans. By the mid-1970s, reliance on external sources had declined to roughly 50 percent (from the earlier 75 percent), most of which still came from banks.[2] On the other hand, many factors prevent a sharp drop in the heavy reliance on debt (e.g., relatively rapid growth and, due to various market practices, a very high implicit cost of capital from issuing equity).

Japan's current financial system reflects an increasing degree of tension between detailed official regulation of economic activities and the drive of private institutions toward larger markets and more diversified activities that inevitably lead to decentralization. To a large extent, earlier official efforts to require institutional specialization remain enshrined in practice, although, among other policies, attempts to separate rigidly short- and long-term financing failed, and there currently is tremendous pressure from commercial banks to break down the separation of banking and security activities (similar to the separation mandated by the Glass-Steagall legislation in the U.S.) and thereby permit banks to engage in the securities business. Although institutional specialization is now less rigidly regulated than in the past, L.S. Presnell's 1973 observation still remains valid, namely that Japan's banking system is characterized "by specialization based on arbitrary distinctions between short-term and long-term capital, between types of money flows, and between the supposed end uses of bank loans."[3] While such specialization may have been very useful in a country mobilizing and efficiently utilizing all of the nation's scarce financial resources for reconstruction and economic development, it is much less appropriate for one of the world's most advanced industrial countries. The interactions and tensions that result from this specialization between the government and the private sector, and between domestic and foreign financial actors, have had and will continue to have important implications for industrial development policy; the more important of these implications are discussed below.

B. Policy Instruments

The foregoing review of postwar history helps explain some of the characteristics of Japanese monetary and credit policies that have received much controversial attention. As with tax policy, money

[1] For a recent discussion, see "As Borrowing Declines, Japanese Banks are Losing Their Corporate Leverage," in *The Asian Wall Street Journal Weekly*, January 18, 1982, p. 7.

[2] These data are from G. C. Allen, *The Japanese Economy* (New York: St. Martin's Press, 1981), pp. 58-59.

[3] L. S. Pressnell, op. cit., p. 37

and credit policies have both macroeconomic and microeconomic effects. This section addresses macroeconomic issues only to the extent that they are critical to an understanding of how money and credit policies have been and are used to direct financial flows for microeconomic, i.e., industrial policy, purposes. The use of monetary and credit policies for purposes of industrial policy followed two separate but related approaches: (1) the skewing of the private sector flow of funds toward targeted sectors, activities, and industries through regulatory and macroeconomic policy measures, and (2) direct lending through various public institutions.

1. Use of Monetary Policy Measures as Industrial Policy

At first glance, the tools of Japanese monetary policy seem to operate much as they do in other advanced industrial countries. In fact, they have operated very differently.[1] Indeed, the very definition of money, as used elsewhere, is a far less meaningful concept in Japan. This subsection looks first at how differently the normal tools of monetary policy have behaved in Japan, notably open market operations, reserve requirement changes, discount rate (or rediscount rate) changes, credit controls, moral suasion, and the extent to which these measures have been used to direct funds among sectors, activities, and industries, as against their use in the more general targeting of macroeconomic goals.

Open market operations are defined as the purchase or sale of government securities on the private market by the central bank to constrain or expand bank reserves and thus the money supply. This is the main U.S. monetary policy tool. The Japanese government's enforcement, through administrative fiat, of low interest rates, combined with a (more or less) balanced budget policy through the 1960s, prevented development of a mature domestic bond market in Japan. As a result, open market operations were unable to function. Indeed, to function properly, open market operations require a market in which primary issues compete freely against bonds outstanding, both public and corporate, such that private buyers and sellers respond to interest rate movements, not government fiat.

During the 1970s, when the Japanese government's budget expenditures rose dramatically but the government was also unwilling to raise taxes, it issued bonds as a means of financing the deficit. However, since the government was also committed to issuing these bonds at what in effect were below market rates (i.e., below the rates that would surely have prevailed if commercial interest rates were not set by fiat), it had to apply considerable pressure to force banks to absorb these bond issues—especially since banks had to purchase these bonds at issue price at times when similar issues were selling at a large discount on the secondary market. The result, of course, was lower profits for the banks.[2]

Indeed, the rapid growth of budget deficits during the 1970s has made required purchases of low interest bonds so onerous that the banks, in turn, have pressured the BOJ and the MOF to liberalize the interest rate structure, and the rules concerning bank participation in both primary and secondary bond markets. Some liberalization has occured, but only very slowly, e.g., interest rates on certificates of deposits, bills, and *gensaki* (a form of repurchase agreement) are generally free from control (call money markets have long been relatively free); certain medium-term government bonds are to be issued on a subscription basis; and individuals and institutions have been given greater freedom in international markets. Thus, despite the rapid recent growth in the stock of government bonds outstanding, open market operations have not worked at all in Japan, at least to date, for the simple reason that the bond market has been administratively controlled in such a way as to provide low cost financing for budget deficits, and to maintain an ability to direct private financial activity more closely.

Changes in the required reserves held against deposits represent a powerful monetary tool in any country. In Japan, a system of required reserves was imposed only in 1958. It was seldom put to use, and even when put to use had little effect until the 1970s. The banking system simply operated with little regard to liquidity, and the BOJ regularly legitimized this behavior by providing reserves to support an overloan position. Since the early 1970s, however, reserve requirements have been changed more frequently—though they remain low in absolute terms. This appears to have stemmed in part from a desire by the BOJ to contain the growth in bank reserves caused by balance of payments surpluses. Since these surpluses increased bank deposits, the banks could then lend money without going to the Bank of

[1] This statement would receive wide agreement among analysts. Exactly how they differ, however, has been the source of much debate. Refer to the issues raised in Allen, op. cit., Chapter 4; Gardner Ackley and Hiromitsu Ishi, "Fiscal, Monetary, and Related Policies," in Patrick and Rosovsky, op. cit.; Wallich and Wallich, op. cit.; and Eisuke Sakakibara, Robert Feldman, and Yuzo Harada, *The Japanese Financial System in Comparative Perspective*, a study prepared for the use of the Joint Economic Committee, Congress of the United States (Washington, D.C.: USGPO, March 12, 1982).

[2] Japanese banks have traditionally been forced to absorb some quantities of low interest government bonds, but as long as the deficits were small and inflation remained low, the profit squeeze from these purchases was small enough to be tolerable. Moreover, in those days, the banks were much more dependent on the Bank of Japan for reserves, and therefore more willing to comply with pressure to absorb government bonds.

Japan for additional reserves. Thus, reserve requirements became a far more useful—and, as discussed below, in some respects, an essential—tool of monetary policy.[1]

A third monetary policy tool used in most advanced industrial countries is the discount or rediscount rate (the rate at which banks can borrow reserves from, or "rediscount" assets with, the central bank). In many countries, this rate has mostly symbolic, or indirect, value, since rediscounting represents a small share of bank reserves. In Japan, too, the rediscount rate has had little direct impact in terms of the actual cost of money, since, on average, the rate itself has usually been low. But as a signal it has indeed been important. The banks that borrowed from the BOJ were typically in relatively heavy debt to the bank, often supporting an overloan position. Such borrowers were subject to detailed oversight, and borrowing at all was considered a privilege rather than a right. As a result, variations in the rediscount rate had a strong influence well beyond the simple volume of borrowing from the BOJ. Moreover, because most interest rates in Japan are set by administrative fiat rather than by the market, the BOJ's control over the rediscount rate translated—and still translates—into control over virtually the entire interest rate structure.[2] This ability to control the level and structure of interest rates (and to enforce this control through credit availability) gives the central bank great power, at least in the short run.

All interest rates, including the rediscount rate, continue to be subject to an additional policy of keeping the actual rate low—even in the face of high credit demands from the private sector. This naturally results in demand for credit that exceeds the supply available (i.e., the market fails to clear at an equilibrium price); therefore, credit must be rationed (i.e., allocated by non-price mechanisms).[3] All governments retain at least residual rights to impose credit controls, but Japan's extensive system of controls is much greater than that of other countries, and naturally enough requires special circumstances to operate effectively. Indeed, during periods when inflation surges or balance of payments deficits threaten reserves, a standard BOJ practice has been to set limits on credit that can be extended by each banking unit. To date, this rediscount/credit control mechanism has worked reasonably well, mainly because of the compartmentalization of the financial system and the almost continually strong demand for credit. (However, as discussed below, it has been working less well in recent years, as the internationalization of the Japanese financial market has come about as a result of "natural" forces, irrespective of the desires of the MOF to insulate the economy and its own control mechanism from these forces.)

The importance of the rediscount mechanism as a source of funds, particularly during upswings in the business cycle, and the detailed credit controls available to the BOJ made the fourth tool of monetary policy—namely, moral suasion, or in the Japanese phrase, "window guidance" (*madoguchishidō*)—effective for both monetary and industrial policy purposes. The composition and magnitude of bank lending is shaped by almost daily contact between relevant BOJ sections and commercial banks. Lack of adherence to the informal guidance risked imposition of tight credit ceilings or restricted access to the rediscount window. Basically, in the capital-short environment of the 1960s, Japanese commercial banks had no choice but to adhere to "window guidance"; nowadays, with less need for central bank reserves, and an increasingly internationalized environment, the banks are beginning to resist control. The legacy of the earlier era remains enshrined in both law and practice, however.

Monetary policy and financial controls clearly have been available for use as instruments of industrial development policy and will continue to be available as long as the rediscount mechanism and associated direct credit controls play such a critical role in the lending activities of commercial banks. As noted above, more indirect policies such as open market operations and changes in reserve requirements are slowly becoming more important as tools of monetary policy (where, in earlier years, they played little or no role), while the rediscount mechanism is slowly becoming less important. The net effect on monetary policy per se is probably negligible. Indeed the shift from direct and detailed to indirect and general policy intervention almost certainly represents a major improvement in economic efficiency for such an advanced economy. However, this shift also sharply reduces the ability to use monetary instruments for purposes of industrial policy.

In the 1950s and 1960s, when the banking system was characterized by well-defined institutional specialization, limited access to the rest of the world, and an almost constant excess of demand for funds oversupply, the use of monetary instruments to control credit flows was relatively easy. As noted above, the commercial banks had no choice but to follow the lead provided by the central bank. The way in which credit actually flowed was at the very least consistent with, and very likely conforming to, the

[1] It is important to note that the most used reserve requirement has been that on non-resident-held (so-called free) yen deposits. It has primarily served as a tool for defense of the yen, reaching 100 percent during periods of extreme inward speculation.

[2] Interest rate control is over nominal rates. Such devices as fees, compensating balances, etc., make effective interest rates more closely reflect market conditions.

[3] A low interest rate policy also lowered the cost of government borrowing. However, this was a relatively unimportant factor until balanced budget policies were abandoned in the mid-1960s, and inflation rates surged in the 1970s.

industrial development objectives of the day. For example, the main targets of industrial development policy in the 1950s and 1960s were the large manufacturing companies specializing in basic industries (e.g., steel, shipbuilding, chemicals, etc.); these firms relied heavily on debt financing from city banks; the city banks, in turn, relied heavily on the BOJ for reserves. Since the monetary authorities maintained detailed oversight of bank operations, and since the banks also maintained their own detailed oversight of the manufacturing companies (frequently through ownership links), the whole credit system was subject to relatively detailed policy guidance from the government.

Yet there is no definitive support for the notion that monetary instruments were consciously, purposefully, and continuously used in a detailed way for purposes of industrial development policy. There is circumstantial evidence, at least with regard to the general objectives of industrial development policy through the early 1970s. More likely, BOJ officials simply had no reason to oppose MITI's industrial development goals, and indeed every reason to support them, directly or indirectly. Wallich and Wallich, in their discussion of monetary instruments, summarize their conclusions this way:

> In good part, public policy has simply reinforced the preferences of the market: large enterprises, which in any event enjoy priority in financial markets, have been given additional advantages in borrowing.[1]

Indeed, this is the least one can say. The coincidence, or correlation, between the way in which monetary and industrial development policies were implemented through the early 1970s suggests that the two complemented each other with or without specific coordination among different ministries or agencies of the government. Whether MITI, MOF, and BOJ officials ever explicitly agreed that monetary instruments could be extremely useful for purposes of industrial policy—and there is no evidence of a formal agreement or even of a formal mechanism for agreement—the entire bureaucracy at least acted as if it agreed on the importance of high economic growth as a basic national policy and, within that goal, on the importance of basic manufacturing industries as a critical ingredient in the growth process. In this sense, Japan's much vaunted postwar consensus for high economic growth was operating at its best. Correspondingly, as multiple policy goals emerged during the course of the 1970s—and more importantly, as balance of payments surpluses weakened the control that monetary authorities had over the details of the lending practices of commercial banks—the BOJ and the MOF became less able, and therefore less willing, to use monetary instruments for purposes of industrial development policy.

Moreover, the effective allocation of credit, in an environment of controlled and artificially low interest rates, depends on a compartmentalization of financial flows. In fact, trends in Japanese financial markets since the early 1970s have greatly weakened this compartmentalization. Balance of payments surpluses have provided firms a source of liquidity outside the control of the monetary authorities.[2] Large firms are increasingly relying on non-bank sources of funds—bonds, equities, internal cash flow, and foreign financial markets—even as domestic banks continue to dominate total financial needs.

Meanwhile, with large budget deficits, the government must now compete with the private sector for funds. This has forced the MOF to issue more bonds and at more competitive rates than was previouslythe case (see Table V-4). For these reasons as well, the MOF and the BOJ are facing increasing pressure, from both domestic and foreign banks, to deregulate financial markets. The domestic banks see the residue of tight controls as increasingly costly and therefore counterproductive. The foreign banks seek entry into the major untapped market among advanced industrial countries.[3] Pressures for deregulation will doubtless increase in any event, simply as a result of the growing integration of the global financial system and the numerous changes in the financial systems of competitor nations.[4] Indeed, a large scale debate is currently in progress concerning the possibility of an offshore banking market in Tokyo.[5]

---

[1] Wallich and Wallich, op. cit., p. 52.

[2] The critical point with regard to industrial development policy is that the government's ability to influence the direction of the flow of funds deteriorated; its ability to influence the aggregate level of lending remains as strong as before. However, the instruments that must be used to implement monetary policies have changed. For example, reserve requirements have become more important than in previous years.

[3] Recent speculation suggests that foreign banks may soon be permitted to operate in Japan on the same legal basis as domestic banks, and more or less comparable to the framework governing foreign bank operations in the U.S. For details see "Tokyo May Let Foreigners Buy Japanese Banks," *The Asian Wall Street Journal Weekly*, January 11, 1982, p. 5; and J. Hirabayashi, "Finance Ministry Decides Foreign Banks are Slated to Obtain Equal Treatment," *The Japanese Economic Journal*, Vol. 20, No. 988, January 12, 1982, p. 1.

[4] For a detailed study of recent changes in the U.S. financial system, see Irving Leveson et al., *The Future of the Financial Services Industry*, HI-3460-RR (Croton-on-Hudson, N.Y.: Hudson Institute, February 1982).

[5] A comparison of MOF and BOJ views on the offshore market idea can be found in "BOJ Takes Wary Stand on Offshore Banking Market Idea," *The Japan Economic Journal*, August 3, 1982, p. 3.

TABLE V-4
PRIMARY ISSUE VOLUME
JAPAN DOMESTIC BOND MARKET, FY 1974/80
(¥ BILLION)

FY	Private sector	Public sector	Total	Public sector as percent of total
1974	7,818	7,482	15,300	48.9
1975	11,086	9,877	20,963	47.1
1976	10,758	13,770	24,528	56.1
1977	12,383	17,115	29,498	58.0
1978	13,675	19,394	33,069	58.6
1979	13,689	21,513	35,201	61.1
1980	5,746	30,163	35,909	84.0

SOURCE: Nomura Research Institute, as reported in Andreas R. Prindl, *Japanese Finance: A Guide to Banking in Japan* (New York: John Wiley & Sons Ltd., 1981), p. 84.

2. The Japanese Government as a Financial Intermediary

In the financial environment of the early postwar years, in which credit was basically rationed, direct lending by government institutions would naturally be even more effective than monetary instruments as a means of implementing industrial development policy. In fact, the Japanese government has acted as an important financial intermediary throughout the postwar period.[1] As noted previously (Figure V-1), the government's share of total outstanding loans declined through the mid-1960s, but then rose significantly in the 1970s. Government lending has always been targeted on a variety of objectives, but certain specified goals have received preferential treatment at different times. In the 1950s and 1960s, economic growth was the dominant single goal. Basic manufacturing industries considered essential to future growth (or national security) received funds directly from government financial institutions on terms unavailable in the private market, or otherwise unavailable on any terms. As the need for such direct lending declined with the extraordinary growth rates achieved during the 1960s, the government's share of total lending also declined. The subsequent increase in direct government lending in the 1970s stemmed from the emergence of new goals, reflecting changes in values that made economic growth simply one of several goals, rather than the single goal against which other goals were measured.[2]

Most of the funds that the government lends for purposes of public policy are channeled through a single entity, the Fiscal Investment and Loan Program (FILP). This entity is independent of the general account budget, and administered by a separate bureau in the Ministry of Finance. It can be thought of as roughly equivalent to a capital budget account in a private firm, maintained separately from the operating budget; however, the analogy cannot be pushed too far since significant public investment also occurs out of the general account budget. In fiscal 1981, the FILP budget was 42 percent as large as that of the general account budget (i.e., some 30 percent of the total funds under the control of the central government were part of FILP). Figure V-2 shows the basic structure of FILP and its budgeted flows for FY 1981. The Trust Fund Bureau represents the single largest part of the organization, accounting for some 82 percent of total FILP, drawn from postal savings, welfare pensions, and national pensions, among others. Use of FILP funds, by broad area is shown in Table V-5. During this period, funds have been distributed roughly 30 percent to public investment, 20 percent to local government, and, most important for purposes of industrial development policy, 50 percent to policy implementation financing.

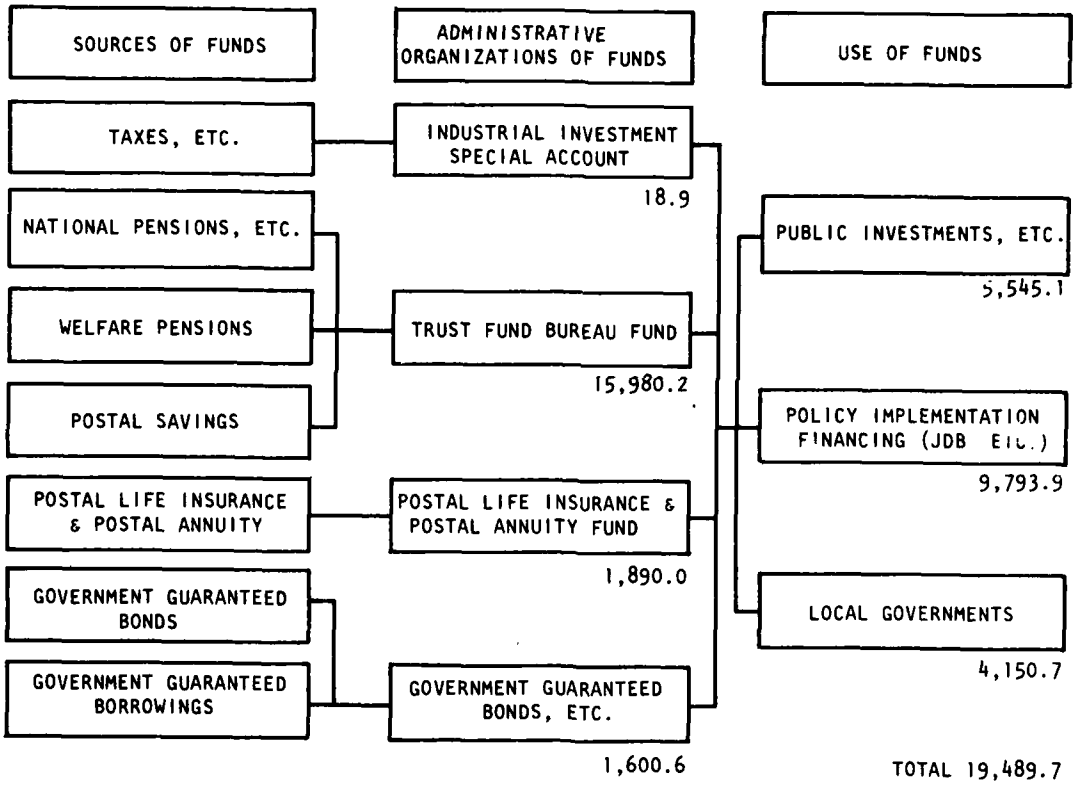
Many institutions are involved in policy implementation financing (see Table V-6). All have sources of funds besides allocations from FILP (principally retained earnings on loan collections). These are comparatively small, however. In terms of policy use, small business loans (some 43 percent in fiscal 1981) and housing loans (some 26 percent) swamped other disbursements. The loans that are typically cited as promoting industrial development objectives are usually those listed as development loans (9.9 percent) and to some extent export-import loans (12 percent). In a functional sense, of course, small business loans are also targeted by industry and activity, and thus also promote industrial development policy. Often, however, these are viewed by Japanese observers as less important than development or export-import loans. This is more a reflection of inbred attitudes about Japanese social structure than the actual economic realities. In the context of the so-called "dual structure" of industry (in which many small firms serve as subcontracting agents for a small number of very large firms), the purposeful targeting of small business loans can reduce the costs

[1] For a detailed discussion of the historical importance of the financial intermediary role, see Sakakibara, Feldman, and Harada, op. cit.

[2] Other factors, such as slower rates of economic growth, also influenced the relative public-private shares of total lending (i.e., share depend on more than policy direction alone). This shift in the importance of growth in relation to other policy goals is clearly evident in the decline in the share of government loans by the Japan Development Bank (JDB) shown in Figure V-1, and in the types of loans JDB has provided, discussed below.

Figure V-2

STRUCTURE OF FISCAL INVESTMENT AND LOAN PROGRAM:
INITIAL FY 1981 PROGRAM (IN BILLIONS OF YEN)



SOURCE: JAPAN DEVELOPMENT BANK, FACTS AND FIGURES ABOUT THE JAPAN DEVELOPMENT BANK (1981), P. 40.

TABLE V-5
SOURCE AND USE OF FUNDS OF THE FISCAL INVESTMENT AND LOAN PROGRAM
(IN BILLIONS OF YEN)

	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	
					¥	(U.S. $million)
Source of funds	¥12,538.2	¥14,887.6	¥16,832.7	¥18,179.9	¥19,489.7	$92,368
Trust fund bureau fund	10,163.8	12,028.4	13,666.7	14,889.4	15,980.2	75,736
Use of funds	12,538.2	14,887.6	16,832.7	18,179.9	19,489.7	92,368
Public investment, etc.	4,311.8	4,725.0	4,842.4	4,975.6	5,545.1	26,280
Policy implementation financing	5,875.4	7,017.1	8,229.5	9,193.6	9,793.9	46,417
Local governments	2,351.0	3,145.5	3,760.8	4,010.7	4,150.7	19,671
(As % of total)						
Public investment, etc.	34.4%	31.8%	28.8%	27.4%	28.5%	
Policy implementation financing	46.9	47.1	48.9	50.5	50.3	
Local governments	18.7	21.0	22.3	22.1	21.2	
Total	100.0	100.0	100.0	100.0	100.0	—
Government bonds subscribed for by trust fund bureau fund (initial program)	¥1,000.0	0	¥1,500.0	¥2,500.0	¥3,500.0	

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 40.

TABLE V-6
SHARES OF TOTAL FUNDS DISBURSED BY POLICY IMPLEMENTATION FINANCING INSTITUTIONS

	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981
Development loans	11.5%	10.2%	9.6%	9.9%	9.9%
The Japan Development Bank	9.9	8.8	8.2	8.5	8.6
Hokkaido and Tohoku Development Corp.	1.6	1.4	1.4	1.4	1.3
Export-import and overseas investing loans	17.7	16.4	15.4	12.4	12.0
The Export-Import Bank of Japan	14.7	13.5	12.3	8.9	8.2
The Overseas Economic Cooperative Fund	3.0	2.9	3.1	3.5	3.8
Small business loans[1]	41.4	40.4	39.4	41.2	42.3
Housing loans[2]	18.7	22.6	25.5	26.6	26.2
Agriculture and forestry loans[3]	6.0	5.7	5.5	5.5	5.5
Others[4]	4.7	4.7	4.5	4.4	4.1
Total	100.0	100.0	100.0	100.0	100.0
Total (¥ billions)	¥8,717.6	¥10,397.3	¥11,756.1	¥12,107.7	¥12,564.3[5]

[1]Small business loans = Small Business Finance Corp., The People's Finance Corp., and Shoko Chukin Bank.

[2]Housing loans = Housing Loan Corp.

[3]Agriculture and forestry loans = Norinchukin Bank.

[4]Others = Medical Care Facilities Financing Corp., Environmental Sanitation Business Finance Corp. and Okinawa Development Finance Corp. Excluding loans by various public corporations.

[5]Equivalent to U.S. $59,546 million.

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 42.

of production to the large firms as well. However, small business loans appear to be readily available (i.e., only broadly targeted). Small business loans thus must be viewed as supporting the broad industry targets of industrial development policy, (e.g., basic manufacturing industries in general during the 1950s and 1960s, and knowledge-intensive industries in the 1970s).

The JDB represents perhaps the most successful single example of a government financial intermediary used to target industrial development. Established in 1951 as a successor to the occupation-founded Reconstruction Finance Corporation, its principal business has been the extension of long-term, low-interest loans for capital investment in new industries. The government's Trust Fund Bureau Fund (the main organization in FILP) provides JDB its main source of capital, though it can also raise funds by issuing certain types of bonds. In the years immediately after its formation, JDB concentrated on loans for the reconstruction of basic manufacturing industries. Since then, the bank has diversified the range of potential loan recipients according to guidelines established by the cabinet. Indeed, the basic law establishing the JDB was amended in 1972 to expand its mandate from "economic reconstruction and industrial development" to "industrial development and economic and social progress."

Each fiscal year the cabinet prepares a basic lending policy for JDB and the pattern of loans in fact closely reflects these policy guidelines. Although JDB implements government goals within this broad constraint, it operates as an autonomous financial institution. General loan areas may be determined by the cabinet, but the bank itself evaluates specific loan applications based on normal banking practices. Indeed, JDB has returned some of its profits to the Ministry of Finance every year.

Interest rates on JDB loans cannot drop below its cost of funds and range up to what it calls the prime rate.[1] Also, different categories of loans carry different interest rates, depending upon guidance from the cabinet. For example, resource and energy projects are targeted, and thus loans in this category carry minimum interest rates. Loans involving the development of technology have typically carried minimum rates, although recently certain computer-related loans carry higher interest rates (apparently based on the argument that the industry is now too successful for the maximum subsidy). As a declining industry qualifying for emergency assistance, ocean shipping can now borrow from JDB at minimum rates.[2] Urban development and quality of life loans range from minimum to maximum rates, depending on specific priorities and projects. Regional development loans are issued at the prime rate, the highest rate offered. JDB loans in such areas as urban development, regional development, and improvement of the quality of life go typically to private firms working in these activities, e.g., private transportation companies, construction firms actually involved in renewing urban districts, etc. A few loans have gone to joint government-private projects.

Table V-7 summarizes the distribution of loans since the early 1950s. The share going to resources and energy, which swamped other areas in the 1950s, declined sharply until the early 1970s, when energy re-emerged as a critical area. Development of technology has grown in importance throughout the period, despite its more or less constant loan share since the mid-1960s. For one thing, some of the targeted new technologies are listed in other categories (e.g., energy). National concerns about the development of a merchant fleet and the maintenance of shipbuilding production facilities can be seen in the rising share of loans devoted to ocean shipping through the late 1960s, with the success of this effort manifested in the subsequent dropoff.[3] Urban and regional development loans have taken a rapidly growing share of funds, exceeding 30 percent during the last half of the 1970s. Similarly, quality of life loans (environmental controls, etc.) grew rapidly in the 1970s.

Table V-8 focuses on new JDB loans since fiscal 1977. The patterns revealed here accentuate some of the longer-term trends, but also offer some slight variations. The amount devoted to resources and energy has increased substantially more than the figure for a five-year average would indicate. Loan shares for the development of technology have fluctuated; those to ocean shipping increased dramatically in 1979 and 1980. On the other hand, the share committed to urban development, regional development, and improvement in the quality of life fell. This decline is due mainly to the completion of major anti-pollution investment projects and a shrinkage in redevelopment loans for large city areas.

A breakdown of recent JDB loans by industry (see Table V-9) supports even more strongly the

[1] In early December 1981, these rates were 7.5 and 8.8 percent respectively.

[2] The JDB does not typically lend money directly to declining industries. Indeed, it is prevented from extending loans to declining industries unless so designated by law. We were told of three cases of declining industry loans: in 1962, the JDB extended loans to the fertilizer industry (which principally refinanced earlier commercial bank loans); in 1963, ocean transport received loans; and in 1978, the JDB extended loans to the association established by the shipbuilding industry to purchase assets from shipyards that were reducing their capacity. The low interest rate loans referred to in the text were provided to domestic shipping companies to enable them to purchase domestically-produced vessels.

[3] The recent designation of shipbuilding as a declining industry produced a policy package including lending measures that have increased the ocean shipping share since 1979.

TABLE V-7
PROJECT AREA SHARES OF NEW LOANS BY THE JAPAN DEVELOPMENT BANK

Fiscal year	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	Outstanding at March 31, 1981
Resources and energy	42.8%	39.0%	16.8%	11.5%	10.6%	25.6%	25.5%
Development of technology	0.4	4.5	8.4	11.0	11.5	11.2	7.8
Ocean shipping	23.4	27.3	30.0	35.4	17.7	7.2	10.5
Urban development	0.6	1.8	4.1	11.0	17.2	16.7	20.0
Regional development	—	3.4	18.1	15.9	15.3	14.8	12.7
Improvement of quality of life	0.3	0.2	0.5	1.3	21.7	19.7	18.7
Other development loans	32.5	23.8	22.1	13.9	6.0	4.8	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (¥ billions)	¥274.4	¥302.7	¥672.6	¥1,363.2	¥2,827.5	¥4,348.7	¥5,392.6[1]

[1]Equivalent to U.S. $25,557 million.

NOTES: (1) *Loans in past years were classified in different ways, but they are reclassified as precisely as possible in accordance with the present way of classification.*

(2) Outstandiing loans at March 31, 1981 include outstanding investment of 8 billion yen, but exclude outstanding foreign currency loans of 5.5 billion yen.

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 10.

TABLE V-8
SHARES OF NEW LOANS OF THE JAPAN DEVELOPMENT BANK BY PROJECT AREA

	FY 1977	FY 1978	FY 1979	FY 1980
Resources and energy	17.0%	27.6%	29.9%	36.3%
Development of technology	10.5	13.0	11.4	9.9
Ocean shipping	3.0	3.3	8.6	13.4
Urban development	20.2	17.7	18.7	10.9
Regional development	20.2	15.1	13.2	11.0
Improvement of quality of life	22.8	18.0	12.6	15.2
Others	6.3	5.3	5.6	3.3
Total	100.0	100.0	100.0	100.0
Total (¥ billions)	¥673.2	¥992.4	¥948.9	¥973.4[1]

[1]Equivalent to U.S. $4,613 million

NOTE: 1. New loans in fiscal year 1978 include 152.2 billion yen of loans which were approved in fiscal year 1977 but extended in fiscal year 1978.
2. New loans in fiscal year 1978 include an investment of 8 billion yen.

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 16.

contention that policy objectives have moved away from direct support of the manufacturing sector. Since 1976, the manufacturing sector has received only 28 percent of JDB loans. To be sure, many non-manufacturing loans support the manufacturing sector indirectly through provision of infrastructure or increased demand for manufactured goods. One example is the high level of loans to JECC for the leasing of computers produced by Japanese manufacturers. Another, referred to above, is the loans to shipping companies for the purchase of domestically-built ships. But in the context of the other uses to which JDB loans were being increasingly put to use, the trend was clearly toward increased support for non-manufacturing activities.

As noted above, the policy area listed as "development of technology" is a somewhat ambiguous category because a large percentage of all JDB loans focus on new or improved technology. However, the policies in the category specifically labeled "development of technology" also characterize the technology-lending practices of other JDB loan categories. Thus, we discuss it in some detail in order to explain further the process of targeted support and to illustrate how specific decisions are made on allocation of funds among various areas.

As seen in Table V-10, the computer industry has been the main recipient of technology funds. In some years, the category known as "development of domestic technology" has been as large or larger, but spread over many more industries. Most of the computer funds, as a matter of policy, have gone to JECC, although some software firms have also been targeted recently. Perhaps even more interesting is the way in which other loans for development of technology have been allocated (the funds in Table V-10 except those for computers).

There are two general JDB loan programs for technology development. One is set up under a 1978 law, and amounts to some ¥10 billion in 1981.[1] Loans from this program must be directed toward specific project areas designated by cabinet order. Should a designated project area be over-subscribed (as happened with semiconductors), JDB can force larger firms that have better access to private financial markets to utilize those markets, while JDB loans are preserved for the smaller firms. The other technology development loan program is established by the bank itself and not designated by specific laws, though it still falls within the broad policy guidelines of the government. This part of the JDB budget totaled some ¥44 billion in 1981. These loans are devoted to new domestic technologies, initial manufacturing efforts for commercialization, development of heavy industry, etc. Firms that believe that they have developed a process or technology falling within the broad parameters established by the cabinet must apply for loans; JDB does not solicit customers. The firm's proposal is submitted to a council of scientific advisors, which evaluates the proposal from a scientific viewpoint.[2] If the technology passes, the applicant then faces an evaluation of credit worthiness and of the financial characteristics of his loan application. If the applicant is large, with

[1]See Chapter VI for more details on this law.

[2]This step in the process is sometimes alleged to restrain certain highly competitive firms from applying for new loans, since detailed proprietary information must be submitted to the advisory council for evaluation.

TABLE V-9
JAPAN DEVELOPMENT BANK: NEW LOANS BY INDUSTRY
(IN BILLIONS OF YEN)

		Cumulative	
	FY 1980	FY 1976-80	Distribution
Non-manufacturing			
Agriculture and fisheries	¥4.0	¥19.3	0.44%
Mining	9.8	31.6	0.73
Construction	2.6	20.7	0.48
Wholesale and retail trade	9.9	84.6	1.95
Real estate	30.7	287.5	6.62
Transport and communication	216.8	803.3	18.51
Electricity, gas, thermal supplies and water supplies	419.7	1,511.9	34.83
Services and other non-manufacturing	72.9	364.0	8.39
Sub-total	766.4	3,122.9	71.95
Manufacturing			
Foodstuffs and beverages	6.9	58.0	1.34
Textile products	7.8	39.3	0.91
Pulp, paper and related products	7.5	47.7	1.10
Chemical products	29.0	217.1	5.00
Petroleum refining	47.0	220.6	5.08
Ceramic, stone, clay, glass and related products	29.8	87.3	2.01
Iron and steel	33.7	258.0	5.94
Non-ferrous metals	10.4	61.0	1.40
Fabricated metal products	6.7	26.3	0.61
General machinery and apparatus	3.8	15.8	0.36
Electrical machinery and apparatus	14.7	42.6	0.98
Transportation machinery and equipment	4.2	68.7	1.58
Other manufacturing	5.5	75.4	1.74
Sub-total	207.0	1,217.8	28.05
Total	¥973.4	¥4,340.7	100.00%

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 18.

well established financial links, it must concurrently seek private financing, since the JDB will provide only partial funding. If the applicant is small, and has relatively weak financial links, or if the project is very large-scale and viewed as a high priority for the nation, then the JDB may take a lead manager's role in putting together a consortium to finance the project. Finally, by general agreement, the JDB only finances the first plant in a new area. Its job is to help launch new technology, not to provide low cost financing for the expansion of industry.

C. Conclusions

In the credit constrained environment that existed in Japan between World War II and the early 1970s, the Japanese government directed private investment flows to preferred sectors through its use of "window guidance" and its role as a financial intermediary. But "window guidance" has been losing its effectiveness for the detailed direction of investment since the early 1970s, when balance of payments surpluses began to make the commercial banks less dependent than in the past on the central bank for reserves. Indeed, the control mechanisms of the BOJ have always been based more on a macro-economic framework, aimed at aggregate activity and the balance of payments, rather than on the specific ways in which to allocate a given level of funds; the relationship to industrial policy has been more coincidental and episodic than explicit or formal.

By contrast, the government's role as a financial intermediary has been, and continues to be, explicit. It also has had more significance than implied by the absolute size of its loans. Sakakibara and his colleagues argue that the importance of the government's financial intermediary role "stems not from outright control or from overall size, but rather from socializing risks, coordinating private investments,

TABLE V-10
JAPAN DEVELOPMENT BANK LOANS FOR DEVELOPMENT OF TECHNOLOGY
(IN BILLIONS OF YEN)

	FY 1977	FY 1978	FY 1979	FY 1980	
New loans	¥71.2	¥129.0	¥108.5	¥96.4	$457[1]
Development of electronic computers	38.2	55.3	47.1	55.4	262
Domestically-manufactured computers	35.5	53.5	45.0	54.0	256
Computer manufacturing plants	0.4	0.2	0.4	0.6	3
Data processing systems	2.3	1.6	1.7	0.8	3
Use of high technology in certain electronic and machinery industries	8.3	7.8	10.2	14.5	69
Electronic industry	3.8	2.1	7.0	12.0	57
Machinery industry	4.5	5.7	3.2	2.5	12
Development of domestic technology	24.7	65.9	51.2	26.5	126
Development of new technology	20.4	57.4	40.9	22.6	107
Trial manufacture for commercial use	0.9	4.0	1.2	0.3	2
Development of heavy machinery	3.4	4.5	9.1	3.6	17

[1]In millions of dollars

SOURCE: Japan Development Bank, *Facts and Figures About the Japan Development Bank* (1981), p. 26.

and processing information."[1] The JDB, the Export-Import Bank, and other government financial institutions make large and important loans to targeted sectors. The indirect guarantee such loans provide to these projects is probably more important than the actual money involved. The JDB's role is analogous to that of the World Bank, whose approval of a country's macro-economic policies or of a particular project in a country can often constitute a "green light" to commercial banks for their participation in lending to a country or a project. Participation by the JDB or the Export-Import Bank in a consortia loan effectively guarantees the project, and implicitly reduces total risk to the participating private institutions. In contrast to efforts in other countries that might seem at first glance to be similar, the record of financial intermediation by the Japanese government shows that it has usually not supported projects with low expected returns, but rather projects with extremely high expected returns, albeit with associated high risks.

With Japan's budget deficits having grown so high, there will inevitably be some pressure to use FILP funds for government bonds; some have always been used in this way. However, there will also be considerable resistance to abuses of the FILP. As a result, a regular market for commercially traded government securities is likely to develop, replacing the administered market that has existed to date, particularly as bonds are issued on more commercial terms. This market will of course mean more competition for private funds, and greater concern about the possible crowding out of private investment. However, growth of this market will also increase the possibility that the BOJ can shift a growing share of its monetary policy burden to open-market operations from its current heavy reliance on credit and interest rate controls. This in turn implies a greater role for market forces in determining interest rates, including international forces, which in the current environment will force domestic Japanese rates to rise.

Meanwhile, the government will retain a substantial role as a financial intermediary for the foreseeable future. Although there is considerable debate in Japan about the need for, and effectiveness of, various public financial institutions there is as yet no opposition that has reached the point of seriously threatening the current system. The various goals of these financial institutions will no doubt continue to proliferate.[2] This will keep them in business, but weaken their (and the government's) ability to target specific industries, or, for that matter, even to understand what effects the lending is having.

Perhaps the most important issue facing Japanese monetary authorities is that of deregulation. Internal and external pressures are forcing continuing liberalization of the traditionally tight controls, formal or informal, over private financial activity. As a result, both the means by which government institutions can intervene in economic affairs and the constraints facing this intervention are changing. Obviously, such change will have potentially important implications for foreign firms (both financial and non-financial) already in Japan or that might seek to participate in Japanese financial markets, and indeed for the efficiency and stability of the entire international financial system.

[1]Sakakibara, Feldman, and Harada, op. cit., p. 11.

[2]For example, MITI appears likely to seek wider authority for JDB to lend to structurally depressed industries.

CHAPTER VI

Science and Technology Policy

Science and technology has been a central part of Japan's postwar policies toward economic and industrial development. In fact, making a sharp distinction between industrial development policy and science and technology policy is not a particularly useful way to understand the relationship between, or the policies toward, either science or industry in Japan. Rather, since the Japanese government has clearly treated science and technology policy as a means of spurring overall economic growth and enhancing the competitiveness of domestic industry, a better way of trying to understand the relationship between science and industry is simply to see them, as Japanese do, as part of an integrated process. Taken as a whole, Japanese government actions throughout the postwar period have continually emphasized the need for an ever-more sophisticated economic base, which in turn has meant an ever-more sophisticated scientific and technological base.

This trend continues today, in some ways particularly so, as industrial structure shifts have begun to make the service sector and many so-called knowledge-intensive industries more important relative to basic manufacturing activities that are less able to benefit from the application of sophisticated technologies such as numerical control machinery and robotics. Thus, whether through explicitly industry-oriented ministries such as MITI, or allegedly "pure" science ministries such as the Science and Technology Agency (STA), the link between science and technology policies and industrial development policies has always been and remains close.

Not surprisingly, it has also been a matter of course that science and technology projects in Japan, whether publicly or privately supported, typically have commercial applications. The idea that scientific or technological research might be done "for its own sake," which is a goal often voiced in the U.S., has existed in Japan much more among professors and other outside critics than among government officials or politicians. Recently, however, government science and technology organizations and industry advisory councils have begun to call for greater emphasis on basic research in conjunction with technology for industrial use. This seems to reflect less a movement in the direction of research for its own sake than a growing realization that in many areas Japanese technology is already "state of the art," and for this reason attention must now be focused on long-term, high-risk research programs that might lead to technological breakthroughs.[1]

This chapter describes how science and technology policies have been used to promote industrial development: first, by reviewing the main trends in science and technology policy since World War II; secondly, by outlining the responsibilities and activities of the major science and technology institutions; and finally, by illustrating the specific application of various policy instruments through a detailed discussion of the most important example of science and technology policy to date—the development of a domestic computer industry.

A. Historical Evolution

Even in the late 1940s, when Japan was still in the midst of repairing the physical damage of the war, various science and technology institutions were created on the obvious assumption that they would help accelerate the recovery. These included the Science Council, The Science Technical Administration Committee, new bureaucratic procedures set up to facilitate the introduction of foreign technology, and the birth of various public and private research institutions and laboratories. Japanese government documents on science and technology policy consider this period of recovery from the war to have ended by the early 1950s; subsequently, science and technology began to be seen as a driving force of its own for economic growth. As a typical review of the postwar period notes:

> The completion of postwar reconstruction . . . was followed by a period in which the Japanese economy came up with technological innovations. Science and technology in the

[1] See Yujiro Hayashi, *Atarashii kenkyū kaihatsu ni mukete* [Towards a New R&D], (Tokyo: Sangyō gijutsu kaihatsu chōki keikaku sakutei kenkyū kai [Study Group on Long Term Plans for Industrial Technology Development], October 1981).

second half of the 1950s provided a driving force for economic progress and for a better national livelihood.[1]

On the basis of a belief in the importance of technology, new institutions were established, such as the Science and Technology Agency in 1956, and other efforts were devoted to the use, promotion, and coordination of science and technology for economic progress.

This concentration of science and technology policies for economic development purposes continued throughout the 1960s and into the early 1970s, as many sectors of Japanese industry became competitive internationally, and economic growth rates were phenomenally high. After the oil price increases of 1973-74, growth slowed considerably, and energy prices began forcing a change in the country's comparative advantage—away from heavy and chemical industries and toward higher value-added, less energy-intensive manufacturing. At this point, a public clamor arose over environmental pollution and traffic congestion, signaling a shift in social values from economic growth as a primary goal, against which virtually all other policy goals were measured, to economic growth as one of several objectives. Correspondingly, science and technology policy shifted from the promotion of "efficiency first" to the promotion of "environmental integrity, safety and resource saving," in addition to efficiency.[2] By the early 1970s, "knowledge intensiveness" was being promoted in official documents, not only as the most logical means of developing new industries with a comparative advantage in line with Japan's continued economic development, but also as the most suitable means of developing a so-called "mature, welfare-oriented society." This phrase, like its frequent companion, "stable growth," often served simply as a metaphor that helped the government and the public rationalize the inevitability of slower growth, and give it a positive tone and sense of direction. Yet, whatever the rhetoric, the shift towards "knowledge intensiveness" was also translated into concrete changes throughout Japan's industrial structure—and this transformation was remarkably successful.[3] A wide variety of measures, including subsidies and loans for frontier R&D, specially designed tax incentives, and specific legislation all supported this shift, and facilitated its success.

Quantitatively, Japanese government direct support of science and technology has been no greater than, and often less than, in other developed countries—a fact that makes the qualitative success of Japanese science and technology policy all the more remarkable. Comparisons of aggregate research expenditures over the past 10 years show Japanese expenditure to be more or less comparable to most other developed countries. As seen in Figure VI-1, Japan ranks third in absolute amounts of research expenditures (¥4.08 trillion in fiscal 1979, as compared with ¥11.9 trillion for the U.S., ¥6.77 trillion for the U.S.S.R., ¥3.19 trillion for West Germany, and ¥2.24 trillion for France). In terms of research expenditures as a percentage of national income (Figure VI-2), Japan ranks fourth (at 2.3 percent in fiscal 1979, as against 4.6 percent for the U.S.S.R., 2.7 percent for West Germany, 2.5 percent for the U.S., and 2.0 percent for France). Unpublished data from the STA indicate that by 1985, the government would like to increase this ratio to 2.5-3.0 percent, thereby bringing Japan's overall research expenditures, at least in percentage terms, on a par with that of the United States. In Japan, 65.7 percent of total research expenditures in 1977 were provided by, and devoted to, the private sector (Figure VI-3). Government funds were less than 27.4 percent of total research funds, with less than two percent of the total expenditures going from government to industry.[4] Comparable data on the government share for the U.S., West Germany, France, and the U.K. are considerably higher (e.g., 51.1 percent of total research funds in the U.S. coming from government and 35.3 percent of industrial expenditures going from government to industry). These comparisons reveal that Japanese government R&D expenditure patterns, at this level of aggregation at least, are modest indeed.

[1] *Outline of the White Paper on Science and Technology*, (Tokyo: Science and Technology Agency, February 1977), p. 4. Unofficial translation by the Foreign Press Center, Tokyo.

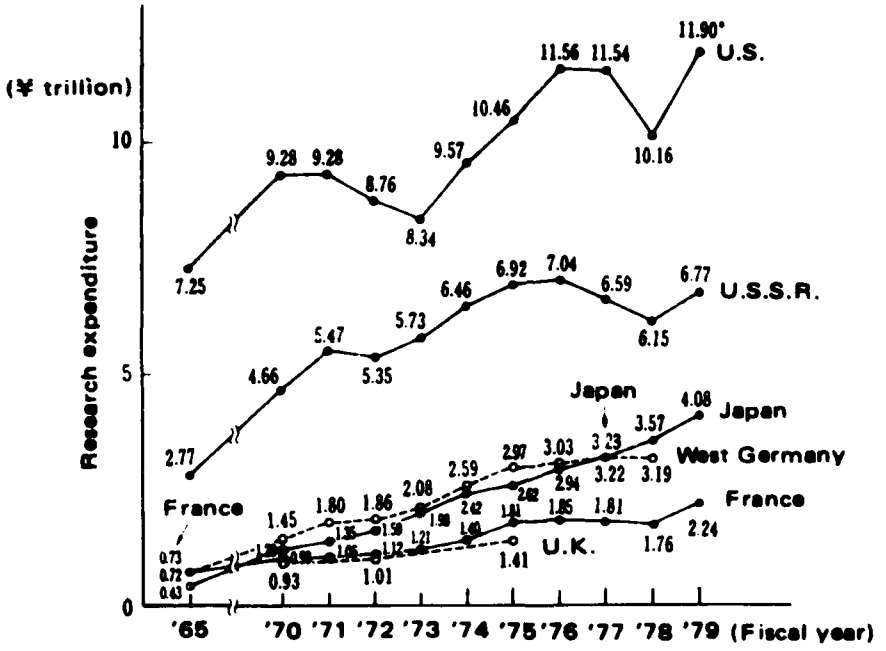
[2] Ibid., p. 16. Some 87 percent of technology developments selected for commendation by the Science and Technology Agency in the first half of the 1960s were aimed at contributing to economic growth and/or efficiency; the comparable figure for the 1970s was only 69 percent. There was a concomitant rise in the preference for environmental integrity, growing from 3 percent in the early 1960s to 13 percent in the mid-1970s. Ibid., p. 17.

[3] Japan's technological achievements and industrial prowess, at least in general terms, is widely known—and need not be reviewed in detail here. However, one small but illustrative example is worth noting: although Japan's total trade in technology licenses is still in deficit, the balance of trade in new technology, in value terms, shifted to Japan's favor in 1972. In 1979, receipts for new technology exports were nearly twice that of payments for imports. See the 1980 *Report on Science and Technology* by the Prime Minister's Office.

[4] As of 1979, government funds had increased to only 27.7 percent of total funds expended, with the private sector declining to 55.9 percent. Government funds to industry had risen only to slightly above two percent. Unpublished data, Science and Technology Agency (July 1981.)

Figure VI-1

RESEARCH EXPENDITURE OF MAJOR COUNTRIES

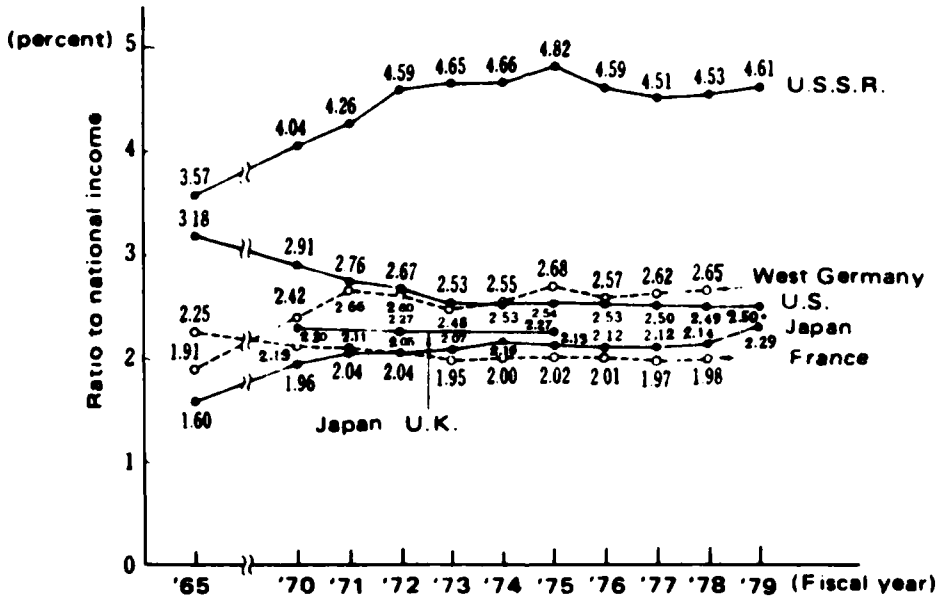


Notes: 1. Figures marked * are from advance reports.
2. Data for the U.S., U.S.S.R. and France include social sciences and humanities.

SOURCE: A SUMMARY OF FY1980 WHITE PAPER ON SCIENCE AND TECHNOLOGY IN JAPAN, (TOKYO: SCIENCE AND TECHNOLOGY AGENCY, JULY 1981), PP. 10-11. UNOFFICIAL TRANSLATION BY THE FOREIGN PRESS CENTER, TOKYO.

Figure VI-2

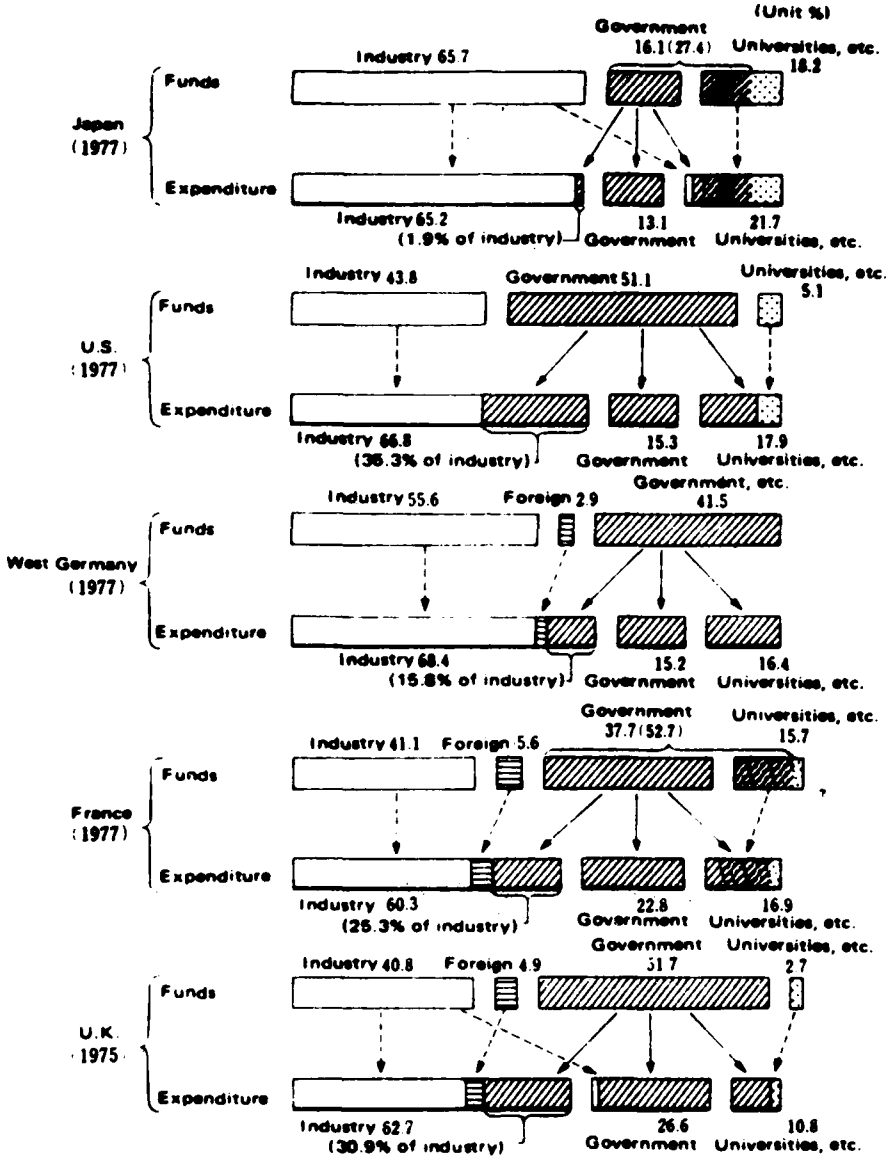
RESEARCH EXPENDITURE TO NATIONAL INCOME IN MAJOR COUNTRIES



SOURCE: A SUMMARY OF FY1980 WHITE PAPER ON SCIENCE AND TECHNOLOGY IN JAPAN, (TOKYO: SCIENCE AND TECHNOLOGY AGENCY, JULY 1981), PP. 10-11. UNOFFICIAL TRANSLATION BY THE FOREIGN PRESS CENTER, TOKYO.

Figure VI-3

SHARES IN FUNDS AND RESEARCH EXPENDITURE



Note: Data for U.S. and France include social sciences and humanities

SOURCE: A SUMMARY OF FY1980 WHITE PAPER ON SCIENCE AND TECHNOLOGY IN JAPAN, (TOKYO: SCIENCE AND TECHNOLOGY AGENCY, JULY 1981), P. 5. UNOFFICIAL TRANSLATION BY THE FOREIGN PRESS CENTER, TOKYO.

Such aggregate data, while helpful in arriving at "ballpark" comparisons of R&D expenditures, provide only a general overview. Disaggregated government and industry budgetary expenditures naturally provide a somewhat more revealing picture of science and technology priorities, perhaps especially so in Japan. Professor John C. Campbell, an expert on Japanese budgetary policies, argues that "if one could somehow define 'decisions' so that their numbers could be reliably compared cross-nationally, it would turn out that more decisions were made as a part of the budgetary process in Japan than elsewhere." The reason for this, he contends, is that, in contrast to the U.S., where authorization precedes appropriations and where substantive legislation is voted on separately, programs in Japan are approved by the cabinet and submitted to the Diet *after* the budget has already been settled.[1]

Throughout the 1970s, budgetary appropriations for the general category of science and technology grew steadily in absolute terms, though at varying rates, e.g., from a high of 29.3 percent between 1974 and 1975 to only 10.3 percent between 1975 and 1976. The average rate of increase between 1972 and 1980 was 16.9 percent, which, though consistent with the stated goal of increasing technological development, led to a slight drop in science and technology expenditure, as a percent of the general account budget, from 3.15 percent in 1972 to 2.99 percent in 1981.[2] Yearly changes in budgets related to science and technology by type of expenditure are shown in Figure VI-4 and by type of expenditure related to energy development in Figure VI-5. Subsidies grew rapidly over the past decade—21.3 percent annually between 1972 and 1980 for subsidies to science and technology generally, and 15.5 percent annually for subsidies for energy development. Moreover, subsidies rose from 41.4 percent of the total science and technology budget in 1972 to 47.8 percent in 1980, and from 20 percent of energy development in 1972 to 66.4 percent in 1981.[3] Since government subsidies come under scrutiny by GATT, and are a frequent source of international friction in any case, we discuss them here in greater detail.

Three ministries and one agency have allocated the largest amount of subsidies in the last year (see Table VI-1). These are, in declining order of magnitude, The Ministry of Education, STA, MITI, and the Ministry of Health and Welfare. In 1981, for example, subsidies were the major instrument used to promote the goals of the Ministry of Education, comprising 67.8 percent of its science and technology related budget. By contrast, subsidies represented only 8.4 percent of the Science and Technology Agency's budget.

This table suggests other important points. First, there appears to be no direct correlation between subsidy size and the science and technology budget. For example, the Ministry of Education has the largest subsidy budget, but only the sixth largest science and technology budget. Secondly, ministries differ in the areas where they concentrate their expenditures, but they naturally overlap; however, the degree of overlapping science and technology expenditure suggests that ministerial responsibility in this area is not clearly developed. For example, four government bodies are supporting space activities, even though Japan does not have a highly developed space program. Apart from the causes of such overlapping—whether it represents an attempt at an integrated approach to science and technology policy, or, more likely, "normal" bureaucratic redundancy—there is some evidence of recent attempts to curb it and to integrate the activities of the various ministries more closely.[4] Overlapping activities among ministries does not, in and of itself, clarify the function for which a ministry or agency is involved with science and technology policy. Nor are the specific linkages between industrial development policy and science and technology policy revealed in

[1] John C. Campbell, *Contemporary Japanese Budget Policies* (Berkeley, CA: University of California Press, 1977), p. 2.

Incidentally, Campbell's caution with regard to comparability of data across countries is unfortunately justified across time in Japan itself. The time series available for comparisons of science and technology expenditure are filled with internal inconsistencies and changes in accounting procedures that make strict comparisons difficult. Moreover, aggregate science and technology-related budgets in Japan were not compiled on a Ministry-by-Ministry basis prior to 1978. Thus, the categorization presented below may include some overlapping, as they were created by working backwards from existing data. For example, R&D expenditure for energy-related purposes had become a major item in the budget by 1974, but the growth of this item does not show up clearly before then, even though a category for energy expenditure existed in the pre-1974 accounts. Later, in 1978, the energy budget was subdivided into several special account budgets; thus, items listed as energy-related expenditures do not coincide with the sum total of energy-related expenditures.

[2] See Figure VI-4 below for the data upon which these growth rate calculations were based.

[3] In the Japanese science and technology accounting system, this energy category is not inclusive of all energy related expenses.

[4] For example, STA recently tried to create a nationwide computer information network covering 5.4 million chemical compounds. The idea is to link eight national research institutes belonging to five government bodies—MITI, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Health and Welfare, the Environment Agency, and STA. See *Japan Economic Journal*, January 19, 1982, p. 17. The STA also started in 1975 a nationwide on-line information system linking Tokyo scientific data banks to other data banks throughout the country. See *STA: Its Roles and Activities, 1981*, (Science and Technology Agency), p. 25.

this simple expenditure analysis. To answer these questions, we look next at the actual institutions involved in science and technology and certain specific government-supported research projects.

B. Major Institutions

The administrative bodies involved directly and indirectly with science and technology are shown in Figure VI-6. Of these, the major institution currently responsible for overall science and technology policy and expenditure in Japan is the STA. The agency is responsible for the planning, formulation, and promotion of basic policies pertaining to science and technology, and for coordination of these policies and attendant activities pertaining to science and technology throughout the government. Examples of its responsibilities include: the promotion of methods of insuring a stable supply of natural resources; the promotion of health- and safety-related technology such as disaster prevention; the promotion of pioneer work in such fields as nuclear energy, space and ocean development, aviation technology, remote sensing technology, laser technology, and material sciences. Most government-supported basic research is conducted at STA laboratories or affiliated institutions. In general, the STA provides grants, conducts surveys on the research activities of private enterprises, and controls the administration of nine advisory groups, including the Council for Science and Technology—the major science and technology policy making body. The STA has also tried to keep abreast of new developments and new "national needs"; thus its programs have expanded in recent years. A recent STA focus has been on nuclear power and nuclear safety, which last year led to the creation of a new subsidy system to promote the viability of nuclear power. As discussed below, the STA also directs a commercially-oriented organization.

The other major body responsible for science and technology policies and programs (shown in Figure VI-6) is the Agency for Industrial Science and Technology (AIST), which is part of MITI. The AIST is explicitly oriented toward research and development of technology with industrial applications, infrastructure technology, and medical and welfare equipment technology, as against basic research. The AIST, like the STA and MITI itself, has various means at its disposal to provide positive assistance to the private sector—these are discussed at some length below. The AIST also undertakes activities that are wholly within the public sector, including the operation of 16 laboratories. Overall, AIST's activities are generally aimed at technology designed to (1) improve the "quality of life" or to (2) provide Japanese society as a whole with needed industrial technology.

The AIST also has an explicit mission to conduct collaborative research with affiliated laboratories and private companies. According to government officials, a collaborative approach to technology development is considered not only a means of solving problems that arise at the boundaries between applied research and commercialization, but also a necessary means of offsetting development limitations. This method is employed when collaboration among a large number of engineers from related fields is in order, and when effective results might be difficult to achieve if a single enterprise were to undertake the project.[1]

The AIST also administers the industrial standardization program, known by its initials, JIS. This program sets industrial standards, including the designation of categories of goods or processing techniques qualified to bear a JIS mark.[2]

In addition to these formal government institutions, there are a number of additional networks that are designed to ensure that science and technology policies are consistent with industrial goals—and vice versa. For example, numerous Advisory Councils (*shingikai*) and Study Groups (*kenkyūkai*) have been formed, and they hold regular meetings—the Electronics Industry Deliberation Council, the Council on Biotechnology and the Study Group on Long Term Plans for Industrial Technology Development are but a few examples. Although these groups have no legal authority, they offer a forum for discussion and "consensus building" among academics, industrialists, journalists, scientists, and government officials.

Another practice that allows for and facilitates coordination between industry and government is the Japanese practice of retiring government officials into senior management positions in industry. This practice, called *amakudari* or "descent from heaven," is extremely common. Although bureaucrats are restricted by law, for a period of two years, from being re-employed in those profit-making companies with which they had worked closely while in office, this law is not rigidly enforced. There are numerous examples of *amakudari*. To cite one recently noted case among computer manufacturers, two directors of Fujitsu and one each at NEC, Hitachi and Oki are all former NTT executives. As of 1977, these four firms supplied NTT with nearly

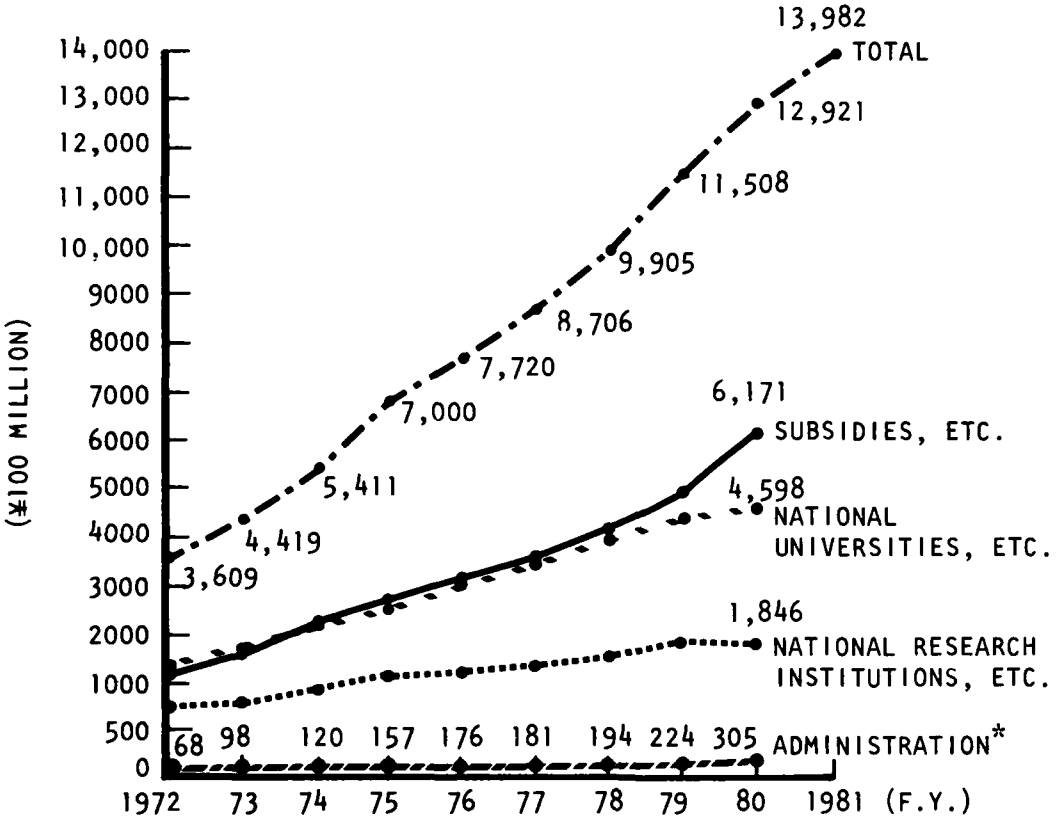
---

[1] *AIST-1981*, (Tokyo: Ministry of International Trade and Industry, 1981), p. 42, and private discussions.

[2] The JIS system has been severely criticized by would-be importers as a method of preventing competition from imports. Unlike the U.S. system, in which the certification organizations such as Underwriters' Laboratory maintain testing facilities in Japan to facilitate Japanese exports to the U.S., the JIS mark, until recently at least, was unobtainable for products manufactured abroad. See *Report of the Japan-United States Economic Relations Group*, (Tokyo and Washington, January 1981), pp. 59-60.

Figure VI-4

YEARLY CHANGES IN SCIENCE AND TECHNOLOGY BUDGETS
BY TYPE OF EXPENDITURE



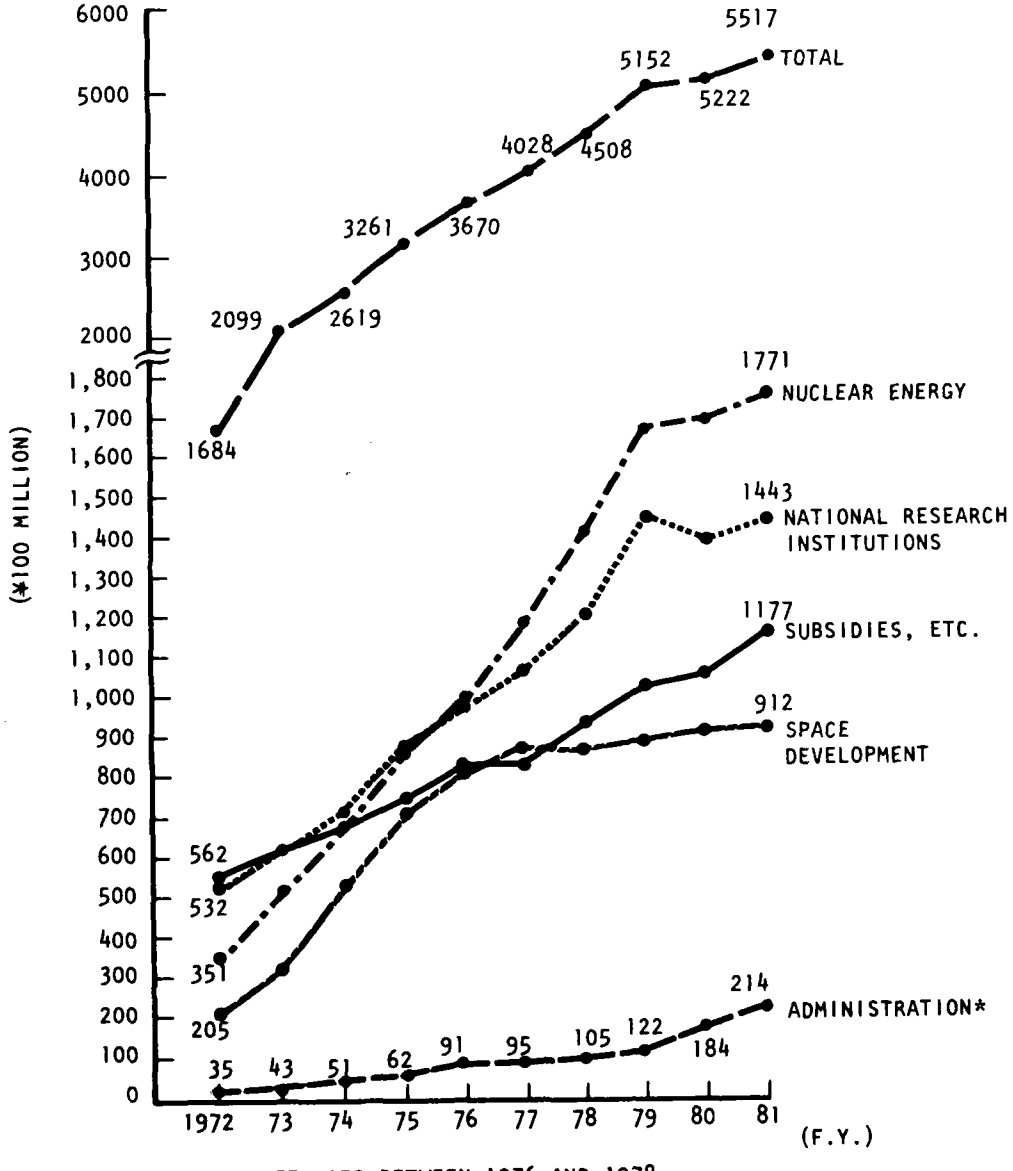
*THERE ARE DATA INCONSISTENCIES BETWEEN 1976 AND 1978.

SOURCE: WHITE PAPER ON SCIENCE AND TECHNOLOGY, SCIENCE AND TECHNOLOGY AGENCY, VARIOUS YEARS.

NOTE: "SUBSIDIES" COVERS GRANTS, CONTRACTS AND CAPITAL INVESTMENTS; "ADMINISTRATION EXPENDITURES" COVERS WORKING AND GENERAL ADMINISTRATIVE EXPENSES RELATED TO SCIENCE AND TECHNOLOGY.

Figure VI-5

YEARLY CHANGES IN SCIENCE AND TECHNOLOGY
PROMOTION EXPENDITURE AND RESEARCH EXPENDITURE
RELATED TO MEASURES FOR ENERGY BY ITEM



* THERE ARE DATA INCONSISTENCIES BETWEEN 1976 AND 1978.

SOURCE: WHITE PAPER ON SCIENCE AND TECHNOLOGY, SCIENCE AND TECHNOLOGY AGENCY, VARIOUS YEARS.

TABLE VI-1
FISCAL YEAR 1981 BUDGET RELATED TO SCIENCE AND TECHNOLOGY

Items	Science and Technology Promotion Expenditure					
Ministries and Agencies	Number of Staff in Research Institutes	Research Institutes	Subsidies	Administration etc.	Space	Nuclear Energy
Science & Technology Promotion Expenditure						
Diet	—	—	—	5	—	—
Prime Minister's Office	2330	252	273	56	867	103
National Police Agency	107	7	—	—	—	—
Hokkaido Development Agency	235	2	—	—	—	—
Economic Planning Agency	80	7	—	—	—	—
Science & Technology Agency	1641	153	261	56	867	103
Environment Agency	267	83	12	—	—	—
Ministry of Justice	73	7	—	—	—	—
Ministry of Foreign Affairs	—	—	—	—	—	—
Ministry of Finance	39	3	—	—	—	—
Ministry of Education	812	72	393	114	—	—
Ministry of Health & Welfare	1156	90	114	—	—	—
Ministry of Agriculture Forestry & Fisheries	6184	517	32	12	—	—
Ministry of International Trade & Industry	3682	346	258	25	1	—
Ministry of Transport	742	67	2	—	32	—
Ministry of Posts & Telecommunications	464	34	—	—	13	—
Ministry of Labor	81	5	—	—	—	—
Ministry of Construction	475	43	5	—	—	—
Ministry of Home Affairs	58	5	—	—	—	—
Subtotal A	10096	1443	1077	214	912	103
Increased rate over previous year, %	Δ103	3.7	13.8	16.0	0.8	8.5
Research & Development Portion of Energy Expenditure						
Science & Technology Agency	—	—	—	—	—	1647
Ministry of Foreign Affairs	—	—	—	—	—	21
Ministry of International Trade & Industry	—	—	100	—	—	—
Subtotal A'	—	—	100	—	—	1668
Total A + A'	—	1443	1177	214	912	1771
Increase rate over previous year, %	—	3.7	12.1	16.0	0.8	4.7

NOTE: Δ = negative

SOURCE: Science and Technology Agency, *Sta, Its Roles and Activities 1981* (Tokyo), p. 33.

Research & Development Portion of Energy Expenditure Policy Expenses					
Sub-Total B	Increase Rate Over Previous Year %	B'	Increase Rate Over Previous Year %	Total B & B'	Increase Rate Over Previous Year %
5	8.7	—	—	5	8.7
1551	8.4	1647	4.3	3198	6.3
7	4.7	—	—	7	4.7
2	3.4	—	—	2	3.4
7	6.8	—	—	7	6.8
1440	8.7	1647	4.3	3087	6.3
95	5.0	—	—	94	5.0
7	4.0	—	—	7	4.0
—	—	21	12.8	21	12.8
3	3.3	—	—	3	3.3
579	10.6	—	—	579	10.6
204	5.7	—	—	204	5.7
561	5.9	—	—	561	5.9
630	3.1	100	Δ3.6	731	2.2
100	Δ5.4	—	—	100	Δ5.4
47	Δ14.9	—	—	47	Δ14.9
5	3.5	—	—	5	3.5
48	4.2	—	—	48	4.2
5	4.5	—	—	5	4.5
3748	6.4	1768	3.6	5516	5.6
6.4	—	—	—	—	—
1647	—	—	—	—	—
21	—	—	—	—	—
100	—	—	—	—	—
1768	—	—	—	—	—
5516	—	—	—	—	—
5.6	—	—	—	—	—

Figure VI-6

ADMINISTRATIVE STRUCTURE OF SCIENCE AND TECHNOLOGY IN JAPAN

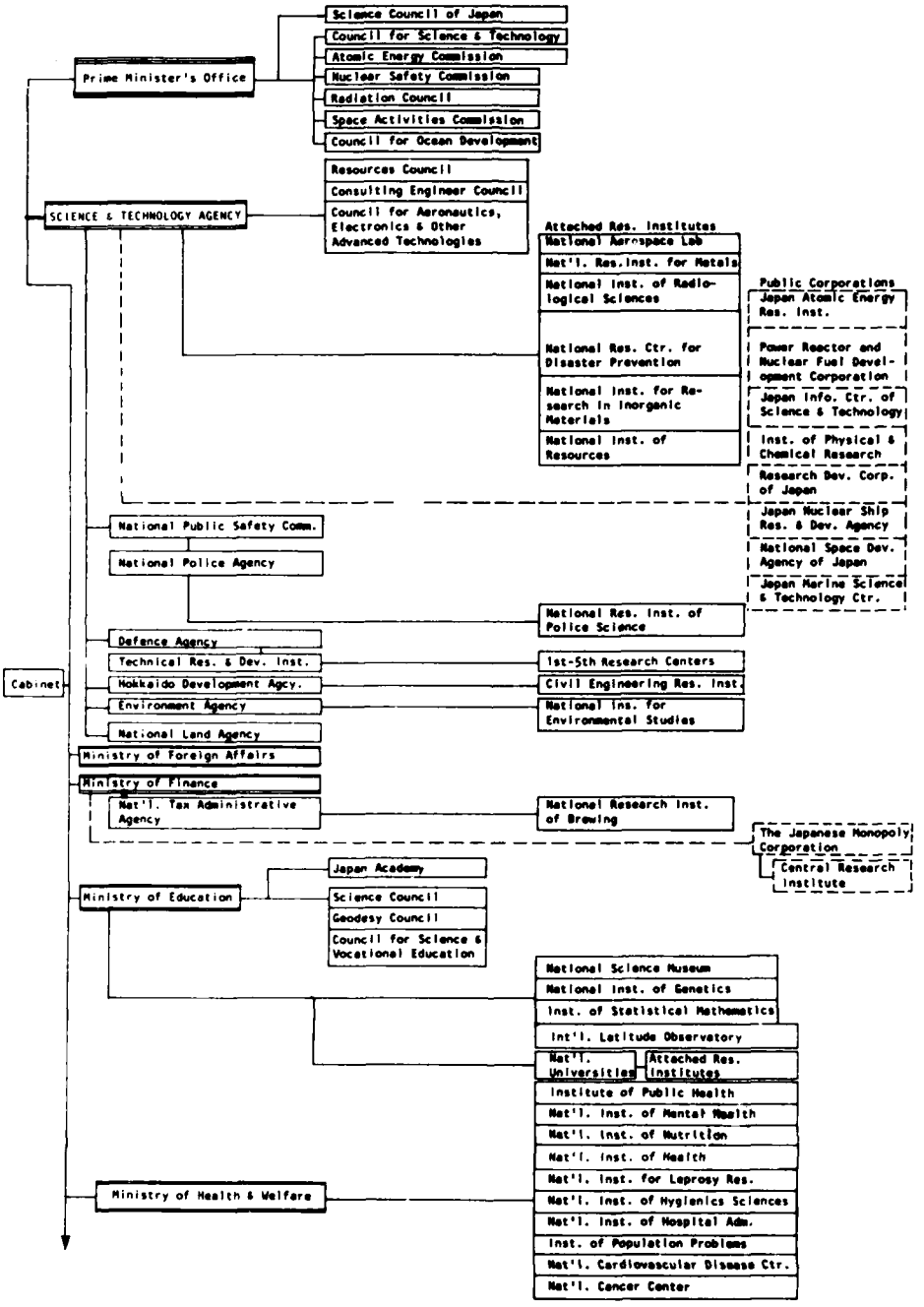
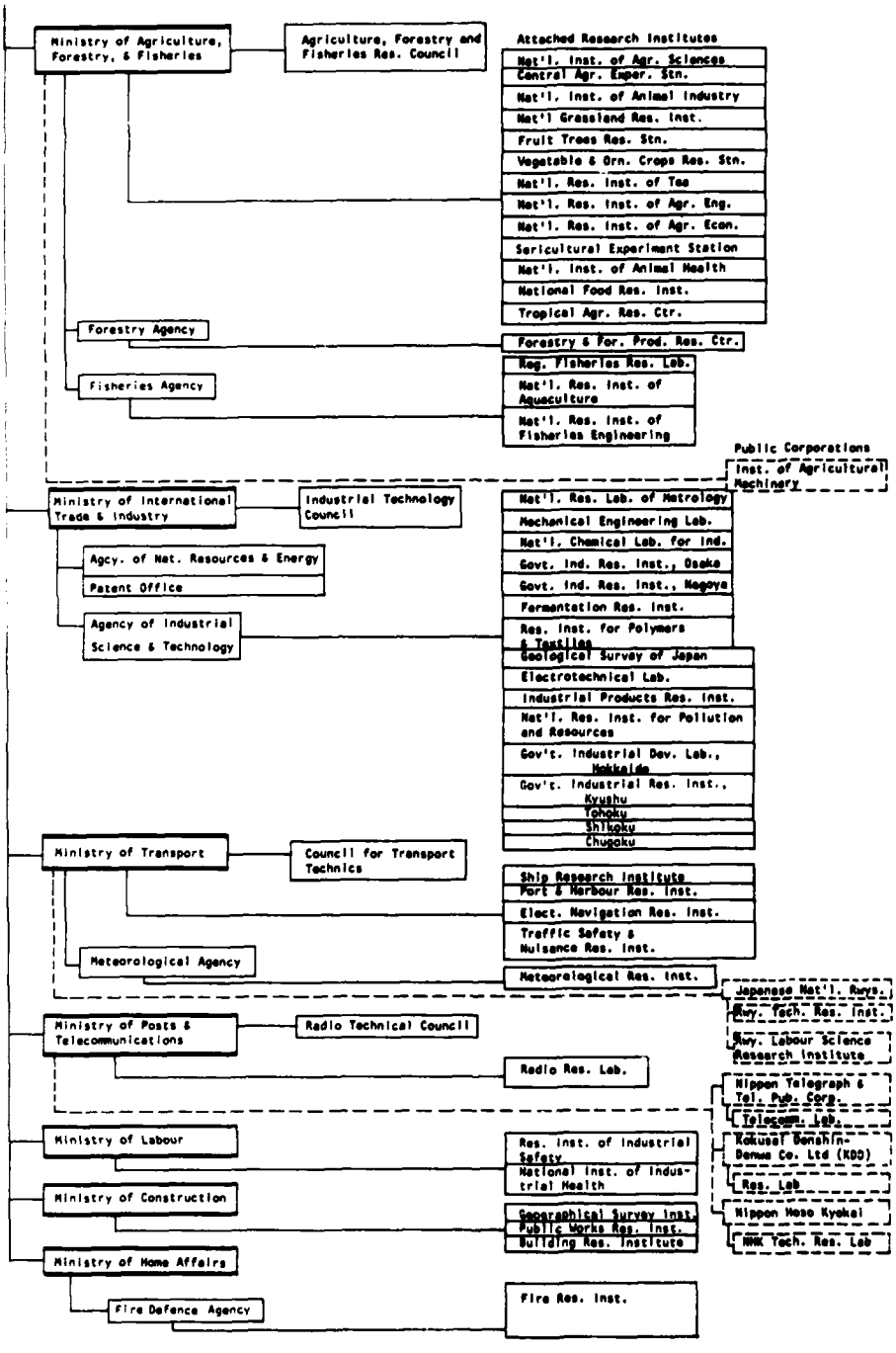


Figure VI-6 (continued)



SOURCE: SCIENCE AND TECHNOLOGY AGENCY, STA: ITS ROLE AND ACTIVITIES, 1981 (TOKYO).

70 percent of its communications equipment.[1] The custom of *amakudari* is not limited to Japanese firms; very recently the former director of the AIST's Electrotechnical Laboratory retired into a Japanese-based subsidiary of an American computer manufacturer. The gains to industry of the *amakudari* system obviously vary from case to case, but at the very least the practice gives Japanese firms, as against the public in general, a strong in-house lobby through which to influence government policies and decisions.

C. Government Programs

As stated earlier, there is a distinct bias in Japan's overall research expenditures toward applied research and prototype development—a bias reflected both in government-supported R&D and private sector research expenditure. This is shown in Table VI-2 and Figure VI-7. We describe Figure VI-7 in some detail as this covers the major government programs.

On the left-hand column of Figure VI-7 are the major basic research programs. The Institute of Physical and Chemical Research is a public corporation reporting to the STA. It conducts advanced research in such areas as physics, chemistry, agriculture, and biology; however, contrary to what the chart indicates, its research is both basic and applied. The second project in the left-hand column, the Creative Scientific and Technology Promotion Program, focuses largely on basic research. It was initiated by STA just last year with an initial capitalization of ¥10 billion, all government-financed, and its mission is to concentrate on four specific areas: fine polymers, special structure materials, crystalization, and super-minute particles. Moving to applied research, in the middle column are two AIST-run activities, its group of 16 laboratories and the R&D Project on Basic Technology for New Industries. The largest of the laboratories is the Electro-Technical Laboratory (ETL), which specializes in electricity and electronics-related projects. The R&D project on Basic Technologies for New Industries, inaugurated last year, concentrates on three areas: new materials, bio-technology, and new types of semi-conductor elements. The project is jointly financed by public and private funds, with a majority of the money coming from government and a majority of the research conducted at corporate laboratories.

Still, as discussed in greater detail in the final section of this chapter, participation in such projects is encouraged by the government, and is viewed by private firms as highly advantageous. Not only do member companies get a certain (although not a uniform) degree of direct access to similar research conducted by other companies, but they can also sometimes receive a first option on patent licenses resulting from the process. In the Basic Materials Project, for example, participants may be charged lower royalties for access to the results of the project.[2]

TABLE VI-2
R & D EXPENDITURE
BY TYPE OF ACTIVITY

	Basic	Applied	Development
1970	18.9	28.2	52.9
1974	15.0	21.7	63.3
1975	14.2	21.5	64.3
1977	16.2	25.1	58.7
1978	16.6	25.1	58.4
1979	15.6	25.9	58.5

SOURCE: Kagaku Gijutsu Hyōron [Indicators of Science and Technology], Kagaku Gijutsu-Chō [Science and Technology Agency] 1981. *This table covers all R&D, public and private.*

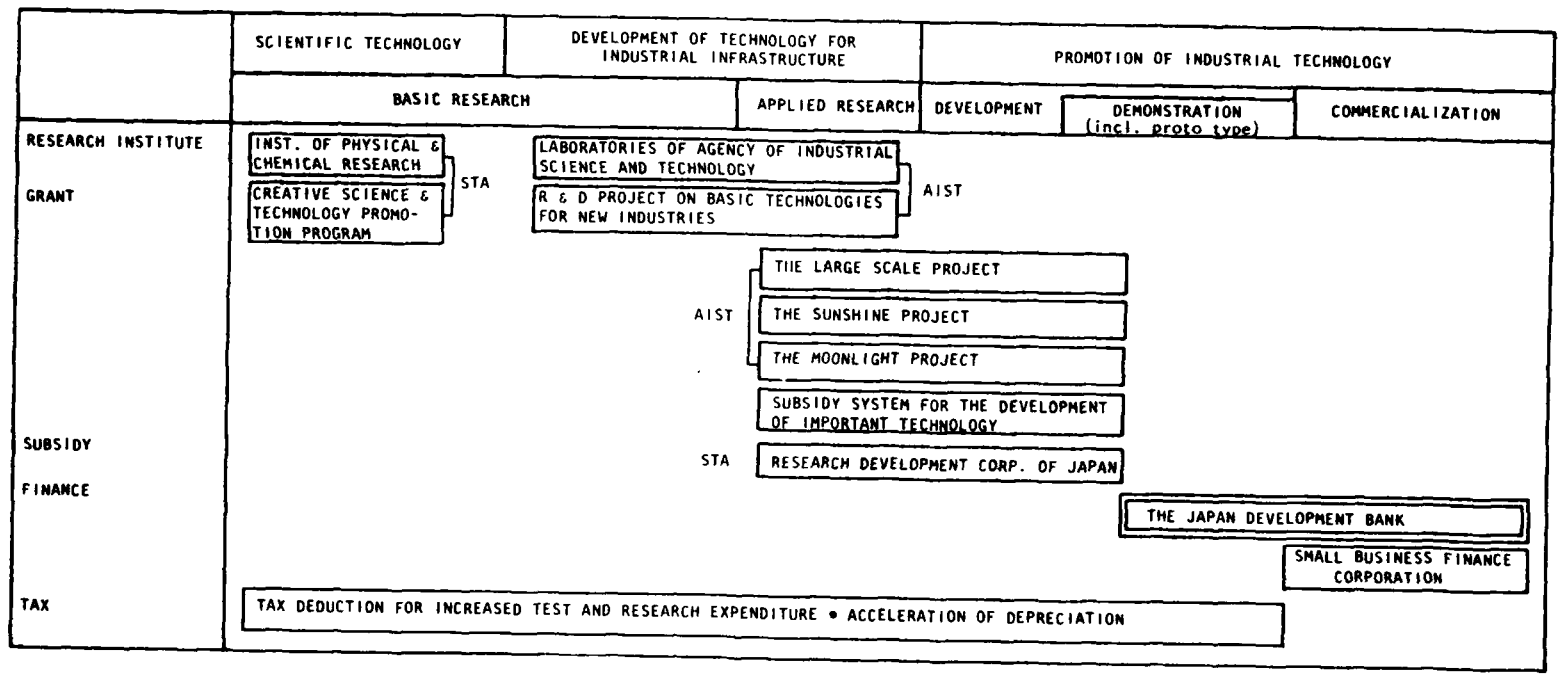
The next four project areas in the figure—part of the demonstration phase of technology development—are also under AIST control. The Sunshine and Moonlight Projects, wholly financed by the AIST, are designed to promote alternative sources of energy. The Sunshine Project, begun in 1974, was designed to develop stable, long-term energy supplies and to prevent (or lessen) environmental pollution. (Specific projects are listed in Appendix B.) These have tended to be in risky long lead-time areas such as solar energy, coal liquifaction, and ocean thermal and wind conversion. The Moonlight Project, established in 1978, was designed to develop new technologies for energy conservation. (See Appendix C for details.) The so-called Large Scale Project is an extremely broad category encompassing such diverse activities as jet engines, optical measurement systems, undersea resource recovery technology, and other capital-intensive long lead-time projects. It is also government-financed, although the degree of government funding varies according to

[1] Jack Baranson and Harald B. Malmgren, *Technology and Trade Policy: Issues and an Agenda for Action* (Washington, D.C.: Developing World Industry and Technology, Inc., October 1981).

[2] The major research areas in the project and participating companies are described in Appendix A, and the funding structure is described later in the chapter.

Figure VI-7

SYSTEM OF POLICY MEASURES TO ASSIST THE DEVELOPMENT OF TECHNOLOGY IN JAPAN



SOURCE: JAPAN DEVELOPMENT BANK, UNPUBLISHED INTERNAL DOCUMENT, SEPTEMBER 1, 1981

the particular project. (A list of current and completed projects under the Large Scale Project is shown in Appendix D.) The Subsidy System for the Development of Important Technologies, also operating out of the AIST, is a means of providing low interest loans for major R&D activities in the private sector. The actual amounts of these subsidies tend to be quite small.[1]

As mentioned above, although most of STA's activities are directed toward long lead-time projects such as space, energy, and ocean development, it does direct some commercially oriented activities, the most important of which is handled by the Research Development Corporation of Japan (JRDC), also listed in the middle column of Figure VI-7. The JRDC is the Agency's vehicle for disseminating new technologies. It operates on a formula through which private companies are given inducements, usually in the form of financial aid, to undertake further technological developments for the express purpose of commercialization. Separately, the JRDC disseminates the achievements made under such development projects, and makes arrangements for the industrial application of new technologies, largely through licensing. Companies that cooperate in the development phase often have an inside track on obtaining benefits once commercialization has proven viable, if only because they have developed the necessary "know-how." Meanwhile, the JRDC receives royalty payments from successful projects, thereby building its own capital base much like a private company. Although the JRDC is clearly important, its total budget tends to be quite small, e.g., for fiscal 1981, about ¥5 billion ($22.7 million @ ¥220 = $1).

Once a project reaches the prototype stage, it is eligible for preferential financing by the Japan Development Bank or the Small Business Finance Corporation. Moreover, as discussed in Chapter IV, companies utilizing the JRDC, participating in such programs as the Basic Materials Project, or engaging in other R&D-related programs that have government priority are eligible for certain tax deductions and accelerated depreciation allowances. There can also be varying degrees of technology sharing and other inter-firm collaboration prior to commercialization, though it would be a mistake to perceive this sharing as proof *per se* of anti-competitive behavior. Rather, such sharing should be viewed on a case-by-case basis. Japanese companies are highly competitive with each other, and it is usually only under special restrictive conditions that genuine sharing of technology occurs.

To summarize, the government has a number of highly specific organizations, projects, and instruments aimed at facilitating the development of new technologies with industrial applications and ensuring that science and technology policies are in accordance with general industrial aims. Nowhere has the impact of such support, either actual or potential, been more concentrated than in the case of the computer and electronics industries.[2] In the following section, we examine the computer industry as a case study in Japanese industrial development policy, and a case study of the links between science and technology policy and industrial development policy. Computers fall under the more general category of the electronics and machinery industries. Some of the specific policy instruments applied to the development of a domestic computer industry have been applied, and continue to be applied, to the electronics and machinery industries generally. We focus primarily on computers, and to a lesser degree, on electronics and machinery as a whole, because computers have been seen, from the pre-"oil-shock" period to this day, as a critical industry for Japan's continued economic development. Indeed, in contrast to the U.S. pattern of relying mainly on the market for frontier industry development, the Japanese approach, at least to date, has been to nudge the market in one direction or another—especially in the computer industry and the electronics and machinery industries generally. There are serious questions about the anti-competitive effects of Japanese industrial structure and government policies with regard to barriers to entry in high technology areas—particularly with regard to barriers to entry as these affect foreign firms. These barriers, real or imagined, as they apply to computers, will also be discussed in the following section.

D. Development of the Computer Industry

As is well-known, the Japanese computer industry has achieved a phenomenal rate of growth and level of success at home and abroad. Computers and components are considered "strategic industries" because of their presumed importance for many future manufacturing activities, their relatively low labor requirements, and their relatively high added value. Between 1974 and 1979, the computer industry grew at an average annual rate of 13 percent. Although computers account for only 4 percent of total electronic equipment exports, exports as a percentage of computer production have grown from 4 percent in 1974 to 10 percent in 1979—with an average annual rate of growth of 33 percent. In 1979, the value of computer exports (¥105 billion) exceeded the value of imports (¥80 billion) for the first time.[3]

[1] This is discussed in greater detail below.

[2] MITI's definition of the electronics industries includes primarily consumer electronics, communications, computers, components, and electronic test and measuring equipment.

[3] *The Japanese Computer Industry: 1980*, B. A. Asia Ltd., May 1980.

Even with the liberalizati n of foreign investment regulations governing the computer industry in 1976, its growth and prosperity has triggered considerable criticism from other OECD nations because of a belief on the part of manufacturers elsewhere that Japanese government support has been and remains central to the development and continued competitiveness of the domestic industry. Indeed, this criticism continues today, particularly in the U.S.[1]

From the founding of the computer industry in the late 1950s, the Japanese government, especially MITI as the major government ministry responsible for the manufacturing sector, committed itself to support the development of a domestic computer industry. Merton Peck and Shuji Tamura, in their chapter of *Asia's New Giant*, argue that computers illustrate the most extensive Japanese government involvement in a particular industry in the postwar period.[2] In principle, computer imports (at least of mainframe units) and foreign investment in the computer industry were made completely free of restrictions in December 1976. At that time, the MITI minister stated that the decision to liberalize computer imports was based on the government's belief that, partly because of previous government support, Japan's computer industry would be able to stand on its own and continue to grow, even after liberalization.

Despite this statement, the Cabinet issued a resolution shortly thereafter that seems to imply quite the opposite belief: "In view of the high expectations of independence and continued growth of Japan's computer industry, the government is resolved to keep careful watch on trends on the computer market with the aim of preventing adverse effects on domestic firms which could lead to confusion in the electronic computer market."[3] Toshio Komoto, MITI Minister at the time, later added:

> It is the opinion of the Ministry of International Trade and Industry that the independence and future growth of Japan's computer industry, following liberalization, will hinge on the industry's ability to secure an appropriate share of the domestic market. While keeping a close watch on the trends of computer import and installation, the Ministry will put into effect strong measures for the promotion of the domestic industry which will include, and not be limited to, encouraging the development of VLSI's for use and next generation computers, as well as the securing of sufficient rental funds for domestic machines.[4]

Support to the computer industry is grounded in law, exemplified in loans, subsidies, and tax measures, and facilitated by the creation of new institutions, both advisory and operational. The statutory basis for government support of the computer and related electronic industries is embodied in a series of laws discussed below. The main legislation is as follows:

1. June 1957. *The Law on Extraordinary Measures for the Promotion of Electronic Industries* (Denshinhō). This law gave MITI authority to formulate overall plans for a reorganization of the then-nascent computer industry, as well as authority to design specific support packages for the industry.
2. April 1971. *Law on Extraordinary Measures for the Promotion of Electronics and Machinery Industry* (Kidenhō). This law was designed to respond to a new set of conditions in which foreign investment, if not countered, might lead to more foreign ownership of the computer industry than either government policy makers or the domestic producers would have preferred. It specifically covered 37 types of machinery in the electronics industry and 58 types in the machinery industry itself. Later, for each machine indicated, specifically designed promotion programs were outlined. The major purpose of this law was to raise the technological level in both the machinery and the electronics industry; hence, the machinery and information industries were combined, in an effort to increase the range of applications of electronic industries. Specifically the law covered prototype R&D promotion of commercial production and manufacturing improvements. Government subsidies were provided to prototype R&D in a variety of specific areas discussed shortly.[5]

---

[1] See remarks by Robert W. Galvin, Chairman and Chief Executive Officer, Motorola, Inc., to the Communications Division, Electronic Industries Association, Hyannis, MA, June 2, 1982.

[2] Merton J. Peck and Shuji Tamura, "Technology," in Patrick and Rosovsky, op. cit., p. 571.

[3] *Computer White Paper*, (Tokyo: Japan Information Processing Development Center, 1978).

[4] Ibid.

[5] For more in-depth analyses of this legislation, as well as earlier computer-related support measures of the period before foreign investment in the industry was permitted, see Subcommittee on Trade, Committee on Ways and Means, U.S. House of Representatives, *High Technology and Japanese Industrial Policy: A Strategy for U.S. Policy Makers* (Washington, D.C., U.S. Government Printing Office, October 1, 1980); Comptroller General of the United States, *United States/Japan Trade: Issues and Problems* (Washington, D.C., U.S. General Accounting Office September 21, 1979); and a good English language Japanese government report, *Government Policy*, Japan Information Processing Development Center, (Tokyo: JIPDEC, Summer 1978).

3. June 1978. *Law on Extraordinary Measures for the Promotion of Specific Machinery and Information Industry*. (Kijōhō) The Kijōhō replaced and extended the functions of the Kidenhō, especially in the area of software. It is structured much like its predecessor, in that it also designates plans for specified industries, provides for tax measures to facilitate the availability of investment funds, and can also be used to initiate large-scale undertakings. MITI officials and legal specialists explain the need for this continued and expanded support for the industry as an outgrowth of continuing problems in software production and in advanced devices; thus, this law is being used specifically, although certainly not exclusively, to promote software production.

The government has also fostered, in part directly, through financing and legislation, and in part indirectly, through encouragement and persuasion, an institutional infrastructure for computers and electronics. This has included the creation of a Machinery and Information Bureau within MITI that also has several divisions closely monitoring, and in some cases running, computer-related programs.[1] Overall, this bureau has had administrative responsibility over government computer projects. It exerts strong influence over AIST's activities, and it aims to improve, develop, and regulate the machinery and information industries. In addition, a number of advisory councils, such as the Electronics Industry Council and the Information Industry Committee of the Industrial Structure Council, have been formed. The government has also encouraged the formation of trade associations, such as the Japan Electronic Industry Development Association (JEIDA), and the pooling of financial resources among computer manufacturers.

One of the best examples of this latter phenomenon is the Japan Electronic Computer Company (JECC), founded in 1961 to purchase hardware and software from shareholder companies and lease them to users, thereby easing the financial burden on individual manufacturers. The JECC is financed largely by the computer manufacturers; with this pooled capital it then can leverage special low-interest loans from the JDB, thereby reducing the financial burden for the participating companies.[2] According to the 1981 *JECC Annual Report*:

> As a result of the establishment of JECC, indigenous computer manufacturers in Japan have freed themselves from the otherwise tremendous task involved in the procurement of the very substantial amount of operating capital required, and the work of attracting investment capital. This has allowed them to concentrate on further research and development for computer hardware and software and on expanding the computer market. Through the establishment of JECC and its method of operation, computers manufactured by Japanese companies have steadily become popular and widely utilized. Growth has been particularly marked since 1955, representing a major business achievement. In response to this rapid expansion, JECC has adopted policies to improve its net worth ratio by continually increasing its capital. In order to meet the rapidly growing need for funds, JECC has also put considerable effort into raising loans. These consist mainly of long-term low-interest loans provided through the Japan Development Bank from the funds for public financing, and the various credit arrangements granted by a wide range of private financial institutions such as city banks, trust banks, local banks, and life and other insurance companies, even including foreign banks.[3]

Such achievements are not, of course, the whole story. Manufacturers are obliged to buy back machines from the JECC; this disadvantage of the leasing system became apparent when new models were rapidly introduced and old models were then returned to the JECC and the manufacturers. To respond to these rapid changes in the market, a new tax measure was adopted in the 1960s allowing manufacturers to create a tax-free reserve of up to 15 percent of the value of sales to the JECC. This was aimed at covering losses that might accrue when models were bought back from the JECC. The reserve amount was later raised to 20 percent, and in 1978 companies were allowed to put aside even greater reserves if they could demonstrate larger buyback obligations.

This tax-free reserve doubtless permitted the JECC to remain useful even in the face of a rapidly growing and changing market. By allowing money to be put aside in the form of a tax-free reserve, this system permitted companies to take a tax write-off sooner rather than later, thereby providing them additional cash up-front. In highly leveraged firms with high fixed costs—which Japanese computer manufacturers were, especially in their early growth period—such predictable cash up-front was extremely useful. Moreover, the subsequent need to increase the amounts that could be set aside in a reserve suggests

[1] For example, the Electronics Policy Division and the Data Processing Promotion Division are responsible for supervising software development programs; the Industrial Electronics Division is responsible for new computers.

[2] Shareholding companies in JECC are NEC, Fujitsu, Hitachi, Toshiba, Oki, Mitsubishi Electric, and NEC-TOSHIBA Information Systems.

[3] *JECC Annual Report*, 1981, pp. 2-3. The foreign bank referred to above is Morgan Guaranty Trust Company of New York.

that, at least until 1978, the buy-back requirements were sufficiently burdensome that the initial reserve allotments were not in excess of manufacturer needs—not, in other words, an egregious subsidy. Nonetheless, the advantages of the system were evident.

To summarize, by pooling capital from computer manufacturers, the JECC could in turn leverage loans from the JDB and commercial banks and thereby reduce risk and ease the financial burden on the participating manufacturers. In addition, the tax-free reserve system that was available to individual companies also reduced the risk that might arise from higher-than-anticipated buy-backs; it also provided important cash up-front.

Yet, discussions with government and industry representatives also suggest that the very success of the JECC contributed to a decline in its importance. Essentially, some of the manufacturers participating in the program began to do so well that they no longer found it advantageous to use the JECC and preferred to establish leasing programs of their own. In late 1976, for example, MITI and JECC wanted to increase JECC's net worth, and asked the major computer manufacturers to increase their capital participation by a total of ¥5 billion. Because Hitachi had already established its own rental program, it rejected the proposal. Toshiba, Mitsubishi, and Oki also refused. The proposal was eventually accepted, at least in part, when Fujitsu agreed to pay 80 percent (¥4 billion) and NEC agreed to pay the remaining 20 percent (¥1 billion). Meanwhile, the JECC continues to exist, even as individual companies build up their own programs, particularly in new areas. Thus, although the usefulness of the JECC to the major computer manufacturers may be declining, it remains one of the best examples of a task-oriented, government-facilitated technology organization in Japan.

Another important government organization aimed at developing and disseminating information and computer systems is the Information Technology Promotion Agency (IPA), which was established by law in 1970 under the Information Technology Promotion Agency law. The IPA is also task-oriented. Its aim is to promote the use of computers, encourage the development and use of programs, and help software firms. It is the only national organization in the field of software promotion. Financing for the IPA comes from government subsidies, private corporations, three long-term credit banks (JDB, the Industrial Bank of Japan, and Long-Term Credit Bank of Japan), and from revenues earned by the association itself.[1] One of the more important of IPA's activities is its credit guarantee program. Information processing firms and software houses are often in need of funds to develop software programs, but have limited property that can be used as collateral. The IPA has a system for guaranteeing such obligations, as long as they are registered with the IPA; this system is illustrated in Figures VI-8 and VI-9.[2] Loans for specific projects funded by the IPA are under the scrutiny of the Machinery & Information Bureau of MITI.[3] To enhance the usefulness of the IPA, the tax system was amended in FY 1979 to institute a tax-free reserve fund system for software programs resembling that established for repurchasing computers discussed above. Yet, in contrast to the 20 percent commonly put aside for computer buy-backs, as much as 50 percent of the income for software programs developed and registered with IPA can be put into the tax reserve. In order to be eligible for the tax break, which results in a tax write-off up-front, programs have to be registered with the IPA. As the IPA is specifically designed to encourage the development of domestic software programs, an area where Japanese producers are admittedly behind Western producers, until recently, only those programs "domestically developed by Japan" were eligible for registration.[4]

The Nippon Telephone and Telegraph Corporation (NTT), a quasi-public monopoly operating under the nominal control of the Ministry of Posts and Telecommunications (MPT) and with annual purchases estimated at approximately $3 billion, is still another example of a public entity whose actions have greatly affected Japan's major computer industries. Because NTT Is not a government agency per se, it is not directly a part of the Japanese government's industrial or science and technology policy. At the same time, because it is also not a private company,

[1] The impact of IPA subsidies is not clear either to members of the study team or to IPA officials. An IPA official told the study team privately, "consignment payments of 10 billion yen have been allocated to the information processing industry, software houses and even end users over the last twelve years . . . these must have had some investment effects, but we have no way of measuring these effects."

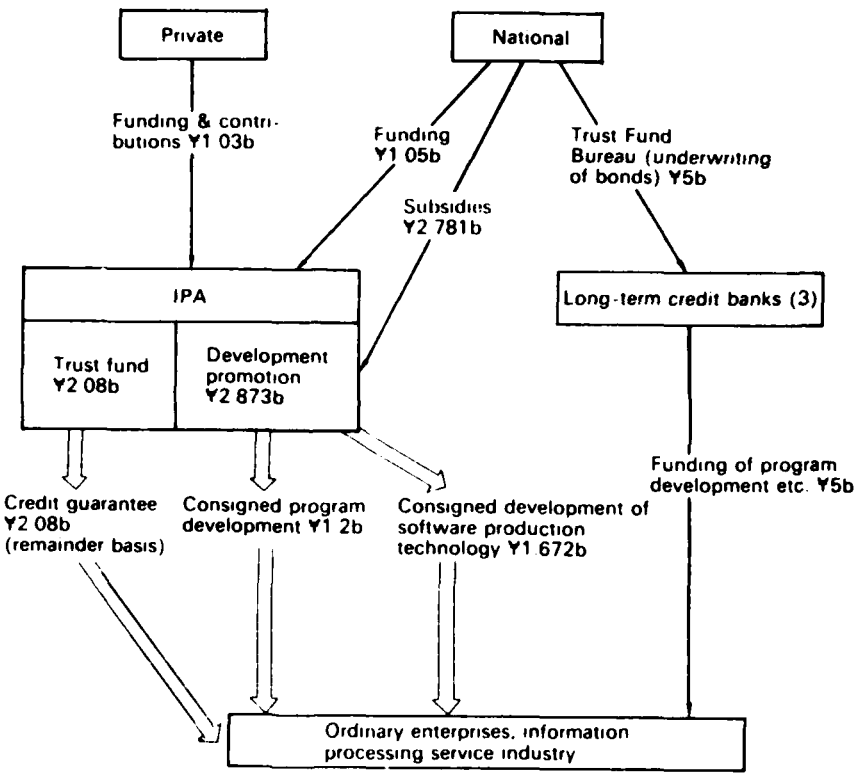
[2] In order to promote the development of software and raise the technological level of program development in Japan, IPA is consigning to the private sector the task of developing programs related to upgrading. Each of these programs must satisfy the following conditions: (1) there must be a special need for its development, (2) the fruits of such development must be seen as widely usable in business activities, and (3) independent development by companies is difficult. In the 10-year period ending in fiscal 1979, 97 such programs had been developed. *Computer White Paper*, 1980 Edition, JIPDEC, Tokyo, p. 235.

[3] A list of specific projects is in Appendix E. Interestingly, an IPA-style credit guarantee system is not uncommon in the U.S. However, the American credit guarantee systems tend to be aimed at broad industries, such as housing, rather than at narrowly targeted sectors.

[4] The system in effect until 1980 is explained in the *Computer White Paper, op. cit.*, p. 47. Tax credits for software development have recently become available to foreign computer firms with manufacturing facilities in Japan.

Figure VI-8

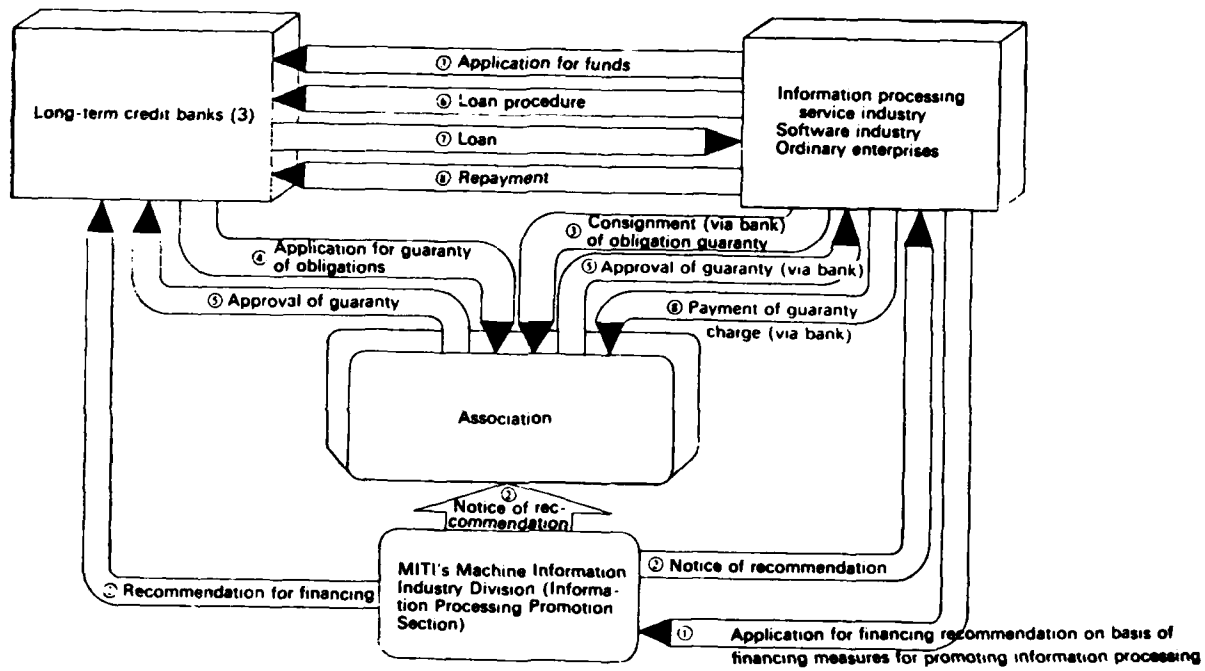
IPA SYSTEM (FY 1980)



SOURCE: COMPUTER WHITE PAPER, 1980 EDITION, JAPAN INFORMATION PROCESSING DEVELOPMENT CENTER (JIPDEC).

Figure VI-9

IPA CREDIT GUARANTEE SYSTEM



- Obligation guaranty: conditions
  Period of guarantee: In principle, not more than 3 years Financing limit: 80% of required funds
  Guaranty charges: 0.7% per year of balance of amount of guaranty Annual interest: 8.5%
  Guaranty amount: 95% of amount of financing As of March 1, 1980
- Period for accepting applications for recommendation: In April, July, October & January of each fiscal year

SOURCE: COMPUTER WHITE PAPER. 1980 EDITION. JAPAN INFORMATION PROCESSING DEVELOPMENT CENTER.

NTT does not receive direct government subsidies. In fact, its anomalous position has given NTT an extraordinary degree of autonomy, which it has used to great advantage to build itself up as the second largest telephone company in the world. It holds a monopoly position in Japan's domestic telephone, telegraph, and data communications systems. Yet, in contrast to the American Telephone and Telegraph Corporation (AT&T) and other U.S. communications companies, NTT does not have its own manufacturing facilities. Instead, it contracts for equipment purchases from the major Japanese computer manufacturers—NEC, Fujitsu, Hitachi, Oki, etc.—all of which have benefited technically and financially from this arrangement. As noted above, there are numerous cases of former NTT officials "retiring" into senior management positions in the computer companies. In recent years, NTT scientists and engineers have also worked with various private firms on a number of major computer projects—such as the early phase of VLSI, and the Fourth Generation Computer Project.

Also in recent years, however, domestic political pressure led to a reduction, though only a small reduction, in Japan's relatively high telephone rates. These had been high as a matter of policy, on grounds that telephoning from residences was a "luxury," while telephoning from a business location, though also high in terms of cash outlay, was in effect less expensive because the charges could be written off as a business expense. Meanwhile, international, notably U.S., pressure for liberalization of procurement practices led in turn to significant revisions in NTT policies, as seen in the Government Procurement Code under the Tokyo Round of the Multilateral Trade Negotiations and in a bilateral, U.S.-Japan NTT Agreement. In the latter case, the agreement established a three-track criteria for liberalization of procurement practices. Track I applies to all NTT purchasing of non-public telecommunication equipment, and this will be made available to all signatories of the Government Procurement Code. Tracks II and III refer to public telecommunication procurement; here, only U.S. firms are allowed to bid on the contracts. As of January 1981, NTT began to implement its first phase of obligations under the bilateral agreement, and this is proceeding apace.[1]

But since U.S. companies have yet to receive any major contracts under the agreement, they have little reason to be overly enthusiastic about the pace of liberalization to date. IBM has received a $1 million contract for 162 computer terminals, and Motorola a $9 million contract for pocket papers. By contrast, in FY 1980, Fujitsu, NEC, Hitachi, and Oki, taken together, received more than $1 billion in NTT procurement contracts. Bidding on various big-ticket items is scheduled to take place in 1983; AT&T, for one, is reported to be hopeful it can secure contracts for NTT procurement projects.

In recent months, NTT officials themselves have begun to argue that the sheer size of the company makes it too unwieldy. There is widespread agreement, for example, that NTT s monopoly position in data communications and information processing has contributed to Japan's being considerably behind the U.S. in this particular sub-sector of the information industry. As is often the case, a monopoly structure appears to have impeded innovation, and the too-close ties between NTT personnel on the one hand and the contracting companies and the MPT on the other hand have meant that few contrary views were brought to bear on the situation. By contrast, in computer and component manufacturing, which comes under MITI's jurisdiction, MITI's policy has sought to force a handful of domestic companies to compete against each other to accelerate industry development—a traditional MITI policy toward high technology industries in earlier postwar years. At that time, potential foreign competitors were either uninterested in the Japanese market or, particularly in the case of those U.S. firms that did have a presence in Japan, content to limit themselves to generally existing patterns. As a result, Japanese high technology firms were more easily able to develop to the point of becoming roughly comparable to, and in some areas, ahead of, U.S. companies.

Since this insulation is less feasible today—either because foreign firms are less willing to ignore potential Japanese competitors, or perhaps because Japanese firms are close enough to the frontier of original research to need to bring foreign firms into their own R&D processes—there is now considerable talk of spinning off NTT's data communications and information processing division and making it a separate company, hopefully with greater flexibility, innovativeness, and presumably greater profitability than it has achieved with NTT. There is even talk of "privatizing" all of NTT. It is highly unlikely that this will occur in the short-term, though if it were to occur, it is important to note that, as a private company, NTT would then no longer be bound by government-to-government procurement codes.

In general, whatever effects NTT's policies have had in the past with regard to the development of Japanese computer manufacturers—and this is a sufficiently complex question to warrant a separate analysis altogether—new inter-governmental agree-

[1]For further details on NTT, the U.S.-Japan NTT Agreement, and the Government Procurement Code, see: *Subcommittee on Trade of the Committee on Ways and Means and the United States-Japan Trade Task Force*, 96th Cong., 2nd sess., *Report on United States-Japan Trade 26* (Comm. Print (96-68) 1980); *Agreement on Government Procurement*, April 12, 1979, reprinted in *Agreements Reached in the Tokyo Round of Multilateral Trade Negotiations*, H. R. Doc. No. 153, 96th Cong., 1st Sess., pt. 1, 67-189 (1979); *Agreement on Procurement in Telecommunications*, December 19, 1980, United States-Japan, T.I.A.S. No. 9961; and Chalmers Johnson, *Japan's Public Policy Companies*, op. cit.

ments reflecting the complaints of U.S. firms fundamentally change the relationship between NTT and both the domestic and foreign manufacturers: NTT policies have become a matter of international scrutiny, and the Japanese government has committed itself to a process of liberalization.

Numerous other organizations have been formed to facilitate the development of an information infrastructure in general, and a computer infrastructure in particular.[1] We have commented only on the major programs.

To move from a general discussion of many kinds of computer-related assistance programs to a more specific discussion of financial assistance, we next outline, on a project-by-project basis, the process by which firms have become eligible for such support. Figures VI-10, VI-11, and VI-12 show schematically the major subsidies, loans, and tax measures that have been applied to the computer industry during the last two decades. This is followed by a brief annotation about each of these projects. Table VI-3 shows subsidy amounts, financing methods, and patent control practices for the eight major computer-related programs that have been operating since 1976.[2]

The center of Table VI-3 shows the financing method. Although all of these funds can be subsumed in English under the term "subsidy," this terminology is something of a misnomer. In fact, subsidies are either in the form of grants, which in turn take the form of conditional loans (*hojokin*), or government contracted work, which take the form of consignment payments (*itakuhi*). Conditional loans tend to have low, and in some cases, no interest rates. Repayment depends on the success of the project—if no successful technologies result from the research, then these loans tend to not have to be repaid. If the research is successful, then a five-year grace period is allowed before the loan has to be repaid. Typically, these loans represent about half the total expenditure of the project, with the remainder provided by the firms. (For specific project details, see Figures VI-10, and Refs. VI-10.) Allocations of conditional loans are at MITI's discretion—with the usual budgetary and other political constraints. As far as we know, loans indicated in Table VI-3 have yet to be repaid. Drawing on Table VI-3 we see that approximately $361.8 million (at an exchange rate of ¥220 = $1), was alloted in the form of conditional loans in the 1976-1981 period, as against approximately $59 million in direct consignment payments.[3]

In many cases, in order to be eligible for consignment payments or conditional loans, private companies have to belong to a non-profit legal entity called a Research Association (*Kenkyū Kumiai*). Typically, the process works as follows: The government announces that it wants research conducted in a given area. Interested firms then submit propoals to the government for review. Simultaneously, or sometimes consecutively, firms try to reach an agreement among themselves to work collaboratively. They then announce that they want to form a research association. At that point, the government selects those firms that appear the most able to contribute to the research under discussion, i.e., the most competitive. The selected firms then submit a proposal to MITI requesting authorization as a legalized research association. MITI typically grants authorization after further negotiations with the prospective members, and after financial solvency has been verified—all this under the rubric of the Industrial Technology Association Law (*Kōkōgyō kijyutsu kumiai hō*).[4]

The private sector can also initiate this process. In such cases, the industry's request serves as an impetus for government action. Other non-profit organizations (*zaidan hōjin*) can also receive consignment payments and do government contracted research, though they are not restricted to doing only government work. They must, however, remain non-profit. There are other differences between *zaidan hōjin* and *kenkyū kumiai*. The former is under no obligation to divide funds equally among participating companies; allocation is at their discretion. Moreover, *zaidan hōjin* can receive money from other sources such as the motorcycle or boat-racing fund. They also tend to own their own assets. *Ken-*

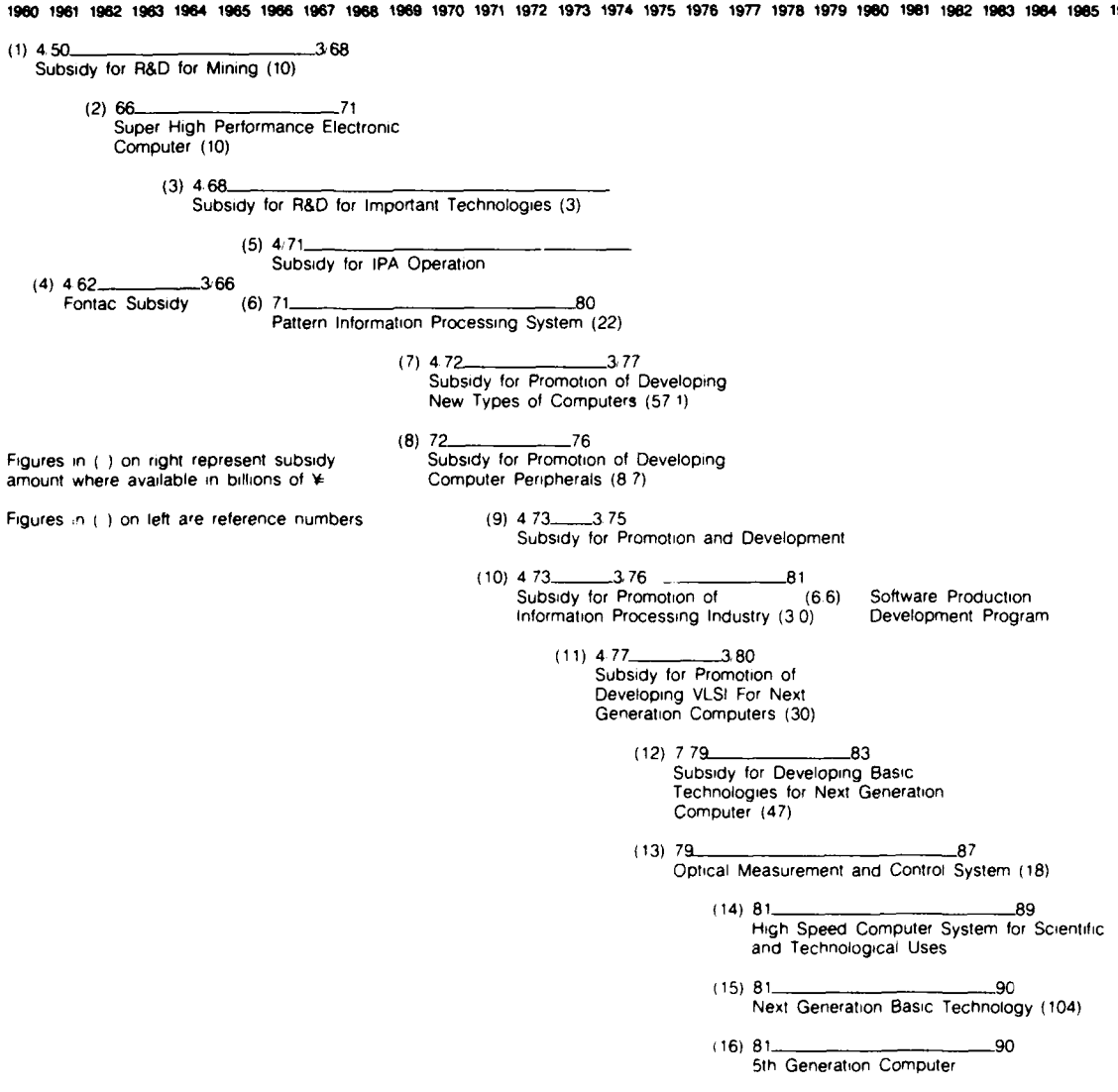
[1] For example, there is a whole set of programs tailored to small and medium-sized firms. The Small Business Promotion Corporation (SBPC), a sub-agency of the Small-and Medium-Sized Enterprise Agency of MITI, was established as a means of diffusing information to small-and medium-sized enterprises. The SBPC is in effect training program and a mechanism for providing financial support through special loan programs.

[2] As far as we know, this data on government support programs is the first of its kind in English. It represents, to the best of our knowledge, all *major* government projects and support measures. Abbreviations, changes in project titles, changes in accounting procedures, termination of projects midway, and other such developments are plentiful. Some minor projects or programs have been intentionally omitted because they were so minor as to be irrelevant. At the same time, the possibility of error by omission remains.

[3] These dollar figures are also somewhat inflated since currency fluctuations were considerable during this period. According to Bank of Japan figures, the exchange went from 297 in 1976 to 221 in 1981; thus, using these exchange rates, the dollar amounts would be smaller.

[4] To date, 54 Research Associations have been approved under this Law, 38 of which are still in operation. For the best source material on this law and other government assistance measures to industry for R&D, see *Kenkyū kaihatsu josei seido riyō no tebiki*, [*Guidebook on Assistance Measures for R&D*], Kōgyō Gijutsuiin [AIST], (Tokyo: 1980).

FIGURE VI-10
SUBSIDIES TO THE COMPUTER INDUSTRY



NOTES

(1) &
(3): These are combined because (3) is a continuation of (1). *Sponsors*: AIST, MITI. *Funding*: All government funding through consignment payments.

(2): *Sponsors*: AIST, Large Scale Project; MITI (See Appendix D). *Funding*: All government funding through consignment payments.

(4): FONTAC was aimed at developing a large size computer competitive with IBM systems. *Corporate participation*: Fujitisu, OKI, NEC.

FIGURE VI-10 (cont'd)

NOTES (continued)

(5): The IPA was established by law in 1970 to encourage the development of software by direct and indirect financing. IPA operations are reviewed by MITI. Three long term credit banks provide loans to software houses and data services through IPA's guarantee fund. Total government support unclear, but subsidies totaled ¥14.9 million for FY 1972-1980 (see text for additional material).

(6): Continuation of (2). *Sponsors*: AIST and Electrotechnical Laboratory. *Corporate Participation*: Toshiba, Hitachi, Fujitsu, NEC, Mitsubishi Electric, Sanyo, Matsushita Research Institute, Konishiroku, and Hoya Glass.

(7): Subsidy aimed at developing a new series of computers competitive with IBM's 370 series. *Funding*: a 50 percent subsidy to three computer manufacturer groups. *Corporate Participation*: Fujitsu-Hitachi (produced M series), NEC-Toshiba (produced ACOM), and Mitsubishi-OKI (produced MELCOM).

(8): *Sponsor*: MITI; *Participation*: 31 companies; *Funding*: 50/50 (government/private); *Goal*: develop high efficiency input-output units and terminals.

(9): *Sponsor*: MITI; *Participation*: unclear; *Funding*: 50/50 (government/private).

(10): *Sponsors*: Machinery and Information Bureau and Data Processing Division, MITI; *Corporate Participation*: 17 large Japanese software companies belonging to an IPA subsidiary, the Joint Systems Development Corp., in addition, a number of unspecified smaller firms; *Goal*: to increase the production and use of software programs. This constitutes IPA's most active software development program to date. Results unclear.

(11) &
(12): Combined, as (12) seen as a continuation of (11); *Sponsors*: Machinery & Information Bureau and Industrial Electronics Division, MITI; *Corporate Participation*: two phases: (I) Fujitsu, Hitachi, Mitsubishi, NEC & Toshiba, OKI, Sharp, Matsushita; (II) above, plus NTT and AIST's Electrotechnical Laboratory staff. *Association Formed*: Phase I: VLSI Research Association formed; Phase II: Electronic Computer Basic Technology Research Association formed (July 1979). *Funding*: (government) conditional loan, repayable if profits are generated from technologies; Phase I: ¥30 billion from the government; ¥42 billion from the private sector. Phase II: ¥22.5 billion from the government; ¥24.5 billion from the private sector.

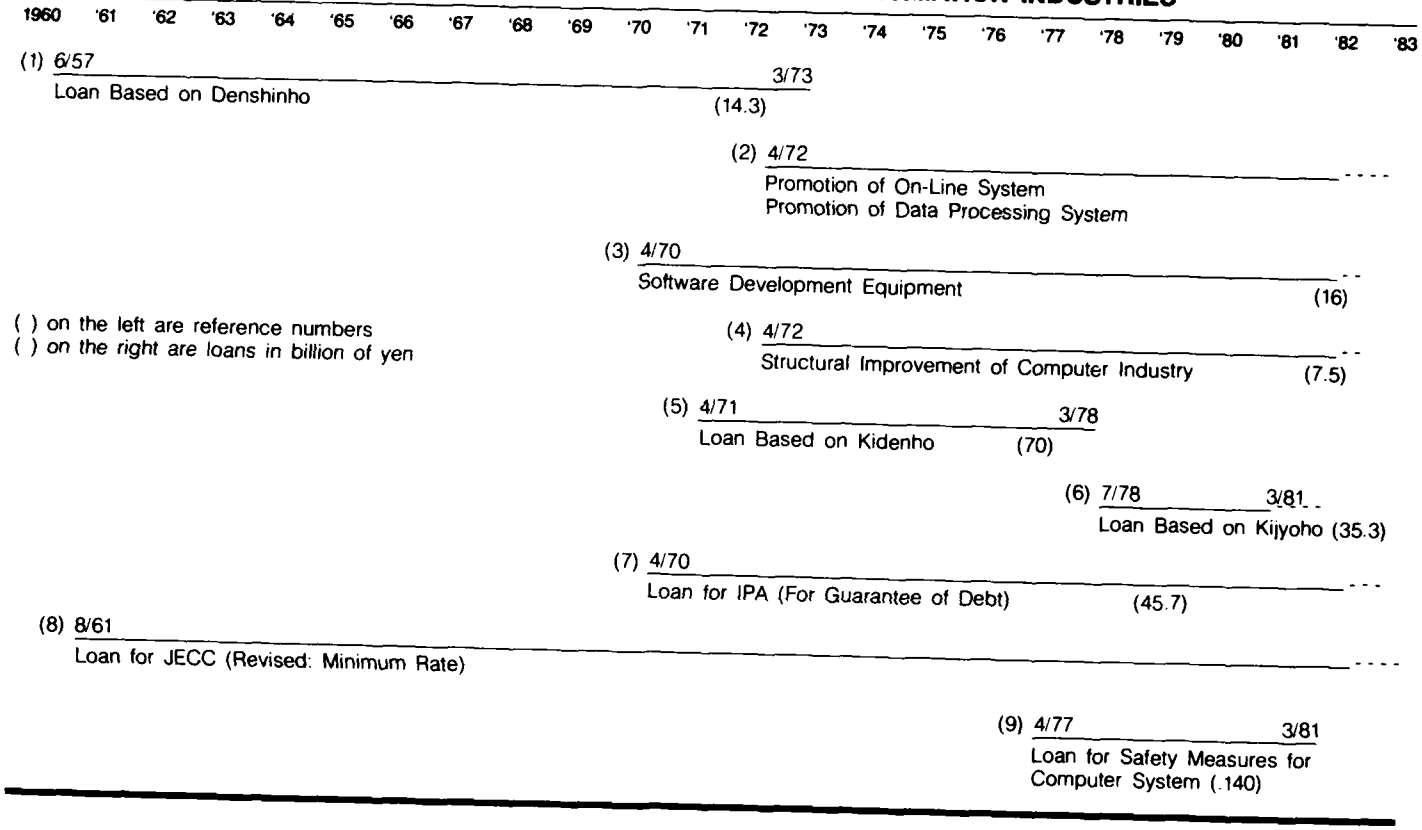
(13): *Sponsors*: AIST, National Research and Development Program, MITI; *Corporate Participation*: Fujitsu, Hitachi, NEC, Toshiba, Mitsubishi Denki, Matsushita Furukawa, OKI, Sumitomo Electric; *Association Formed*: Engineering Research Association of Optoelectronics Applied Systems (January 1981); Laboratory Formed by Association: Optoelectronics Joint Research Laboratory within the Fujitsu Kawasaki Plant; *Funding*: all government funding through consignment payments.

(14): *Sponsors*: AIST, National Research and Development Program, MITI; *Corporate Participation*: Fujitsu, Hitachi, NEC, Toshiba, Mitsubishi Denki, OKI; *Government Laboratory Assistance*: Electrotechnical Laboratory, AIST; *Association Formed*: the Association for the Development of High Speed Scientific Computers (December 1981), MITI's Electrotechnical Laboratory is also involved, although majority of work will be conducted at companies' own research facilities; *Funding*: all government funding through consignment payments.

(15): *Sponsors*: Next Generation Basic Technology Planning Office, AIST, MITI; *Corporate Participation*: 48 companies in 3 areas; numbers in ( ) indicate number of firms; Area I: New Materials (33); Area II: Biotechnology (14); Area III: Semiconductor Function Elements (10); *Association Formed*: five associations formed, 3 for Area I, 1 for Area II, and 1 for Area III; *Funding*: all government funding through consignment payments.

(16): *Sponsor*: Machinery and Information Bureau, MITI; *Corporate Participation*: Fujitsu, Hitachi, NEC, Toshiba, Mitsubishi Denki, OKI; *Government Laboratory Assistance*: Electrotechnical Laboratory, AIST; *NTT Personnel Participation*: primarily at preparatory stages; *Association Formed*: The Institute for New Generation Computer Technology, an endowed research foundation (April 1982); *Funding*: total funding yet to be determined.

FIGURE VI-11
TREASURY INVESTMENT AND LOANS FOR INFORMATION INDUSTRIES



NOTES:

(1): Loan for the Production of Rationalization Machinery; Source: JDB

(2) &
(3): Software development and data processing systems are combined under the JDB's classification of "promotion of data processing." Both are ongoing loans, the total to date reported at ¥16 billion.

(4): This is an ongoing JDB loan.

(5): This is provided by the JDB and the Small Business Finance Corporation (SBFC). JDB loan totals ¥61.8 billion, SBFC totals ¥9.0 billion.

(6): Ongoing, this is provided by the JDB and SBFC, with JDB loans totalling ¥32.5 billion and SBFC totalling ¥2.8 billion.

(7): IPA loan is through the Industrial Bank of Japan (IBJ), the Long Term Credit Bank (LTCB) and the Nippon Credit Bank (NCB). As of FY 1980, total loan amount was ¥45.7 billion.

(8): An accumulated JDB balance to date of ¥156.6 billion. With loans from other financial institutions, the total accumulated loan balance is ¥288.2 billion.

(9): This is a SBFC loan.

SOURCE: Various documents and discussions: JDB, IBJ, LTCB, SBFC, MITI, STA.

FIGURE VI-12
TAX MEASURES RELEVANT TO INFORMATION INDUSTRIES IN JAPAN

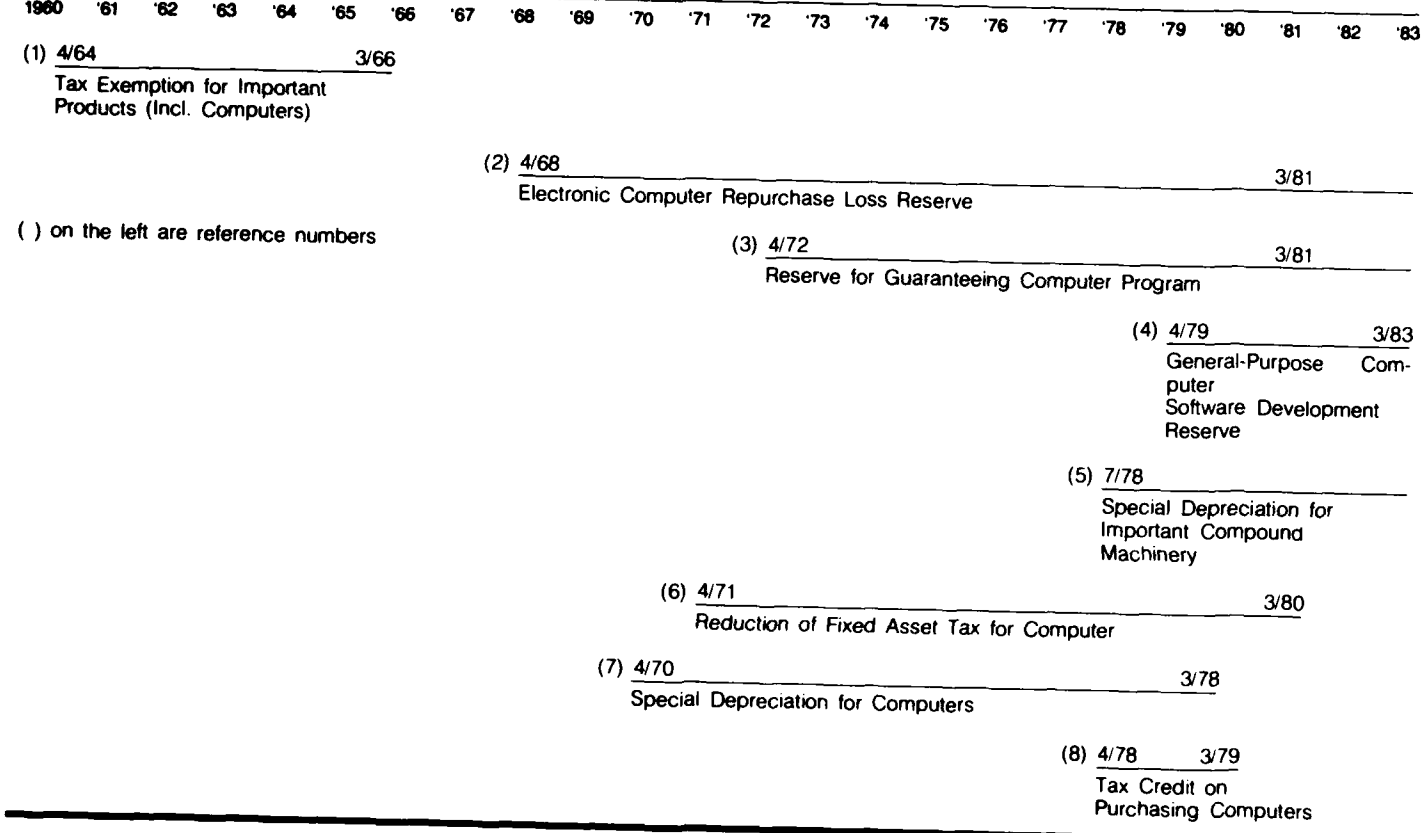


TABLE VI-3
MAJOR JAPANESE GOVERNMENT PROJECT SUBSIDIES FOR R&D 1976-1981, FINANCING METHOD & PATENT CONTROL

	Government Subsidies (¥ Bil.)	Government Subsidies ($ Mil.) (220 = 1)	Financing Method	Patent Control
Subsidy for R&D for Important Technologies	13.4	61	Grant in form of conditional loans between 26-40% of total expenditure, depending on type of research.[1] (*hojokin*) Repayment according to success of project.	Technologies go to subsidy recipients, except environmental control and safety.
Software Development Production Program	6.6	30	Total funding provided by MITI, no repayment obligation.	All resulting software technologies belong to IPA.
Subsidy for Promotion of Developing VLSI, for Next Generation Computers	30.0	136.4	*Conditional loans (hojokin)* provided to VLSI Research Association. Repayment linked to profit levels. No interest payment due. (42% of total expenditure provided by government.)	Majority of patents belong to Association (over 90%); remaining belong to MITI. Patents owned by the Association, available to Association members and other firms (i.e., cross licensing to foreign firms allowed) after MITI review. Access to MITI-owned patents is through AIST subsidiary, Industrial Technology Promotion Agency.
	Phase I			
	22.5	102.2	Conditional loan (*hojokin*) provided to Electronic Computer Basic Technology Research Association. (50% of total expenditure provided by the government.)	All patents will be owned by the government.
	Phase II			
Subsidy for Developing Basic Technologies	13.7	62.3	Conditional loan (*hojokin*) (45% of total expenditures provided by government.)	Contract basis, all resulting patents belong to MITI.
Optical Measure and Control System	3.4	15.4	Total government funding, in the form of consignment payments (*itakuhi*); no repayment necessary.	Contract basis, all resulting patents belong to MITI.
High Speed Computer System for Scientific and Technological Use	0.30	1.4	Total government funding (*itakuhi*), consignment payments, no repayment necessary.	Contract basis, all resulting patents belong to MITI.
Next Generation Basic Technology	2.7	12.3	Total government funding (*itakuhi*), consignment payments, no repayment necessary.	Contract basis, all resulting patents belong to MITI.
Fifth Generation Basic Computer	0.15	.682	Initial monies from JIIPDEC. Total amount to be allocated undetermined.	Undetermined.

[1]For the rest of this chart, grants in the form of conditional loans abbreviated.

SOURCE: Discussions with government officials, various documents: JDB, IBJ, LTCB, MITI, STA, AIST.

kyū kumiai, on the other hand tend not to have ownership rights to assets, and their research funds tend to be more or less equally divided among participating firms.

These alternative methods of organizing joint public/private research projects, together with the lack of published and open bidding, carry the strong implication that by the time the government goes public, with the notion of doing a particular project, the negotiation and selection process may have been at least partially determined--to the extent that highly competitive firms already know they have a better than even chance of being selected for membership in the not-yet-sanctioned research association. In the case of the newly formed Biotechnology Association for example, the process worked as follows: In November 1980, a Biotechnology Round Table (*Kondankai*) was held, at the industry's behest, in which five firms participated. The idea was raised that they should form an association. In July 1981, the five firms in the original round table, together with additional corporations, announced that they wanted to form an association. In August, MITI "announced" that it wanted various biotechnology firms to submit proposals to undertake the biotechnology portion of the newly established New Materials Project. Shortly thereafter, the not-yet-officially-recognized-Biotechnology Association, then comprised of 14 companies, "won" a contract to undertake this research. In September, the Association was officially registered by MITI, and officially awarded responsibility for the biotechnology portion of the New Materials Project.

To summarize, government funds are distributed in the following ways: to conduct collaborative research efforts under government auspices, a research association must be legally sanctioned; government funds are then distributed to an Association; these tend to be in the form of consignment payments for government contracted work (which tend to mean total government funding) or of grants made via conditional loans (which tend to mean partial government backing), with repayment dependent on the degree of success achieved in the project. There is, however, great variation among projects, and only the most general comments are valid with regard to common characteristics of government/private projects. The implications for U.S. policymakers of this system are discussed in the final section of this chapter.

E. Patent Control and Discrimination

The complex structure of government subsidies in Japan, the ambiguity surrounding control over resulting patents, and the extent to which these programs discriminate against foreign firms have by now become hotly contested international issues. In the following discussion we attempt to clarify these issues.

The Subsidy for R&D for Important Technologies (see Figure VII-10, and Table VII-3) deserves special mention for two reasons: (1) unlike other subsidies, funds in this program go directly to individual firms; and (2) the by-laws in this program expressly discriminate against foreign firms.[1] This subsidy system dates back to 1950, when it was called the Subsidy for R&D for Manufacturing and Mining. Government funds provided under this subsidy have covered between 26 and 40 percent of the cost of a given project. As of FY 1980, ¥46.4 billion ($211 million at ¥220 = $1) cumulatively had been allocated to 4,284 applicants. In 1968, the program was expanded, and the current name adopted. Individual subsidy amounts tend to be quite small, however. For example, between FY 1976 and FY 1978, ¥13.4 billion ($61 million at ¥220 = $1) was awarded to 413 applicants, or an average of ¥32.4 million (or $147,000) per project.

Funding is provided under the following five general categories:

1. 'Virgin' and innovative research
2. Applied research
3. Industrial research
4. Trial machine and equipment research
5. Research for commercialization

All resulting patents belong to the individual applicant (i.e., the firm) except in category 5. This category applies only to research conducted on environmental control and safety measures, and in this case the MITI minister reserves the right to make the patent available to the public. In all categories, however, the company must repay some or all of the government money, depending on the degree of success of the project. In effect, then, this program is similar to a *hojokin*, or conditional loan. To date, this subsidy program has explicitly discriminated against foreign firms. Its by-laws note, in Section 2.4.2, that "anyone" is eligible for support except:

1. A company that is in the process of reorganization, and whose reorganization has not been officially accepted by a court of justice.
2. A person who does not have Japanese residence or a person who does not have Japanese citizenship;
3. A corporation or organization whose by-laws are based on foreign laws, or whose headquarters are located outside of Japan;
4. A corporation or organization which is controlled by persons or organizations mentioned in (2) or (3) above.[2]

---

[1] This subsidy system is not limited to computer-related R&D efforts, but it is inclusive of such efforts, and is therefore included in this discussion.

[2] *Kenkyū kaihatsu josei seido* [Subsidy System for Research and Development of Important Technologies], AIST (Tokyo: 1980).

As far as we know, although foreign firms and governments have tried in general terms to eliminate discriminatory subsidy programs in Japan, no foreign firm or government has taken issue with this particular subsidy program, perhaps because the actual amounts of the subsidy remain very limited.

In all of the major computer-related projects outlined in Table VII-3, the resulting patents are now either directly controlled by MITI or indirectly under MITI's purview. Those technologies or processes evolving from a 100 percent government-funded project are, naturally enough, owned by the government. In some government/private projects, joint patent ownership is possible, as in the VLSI case; and in others, priority access may be given to participating companies.

Indeed, it was precisely this uncertainty about the ways in which patent rights were to be distributed that led to international criticism of the VLSI program. Julian Gresser, author of the House Ways and Means Committee study on high technology and industrial policy in Japan, described the VLSI project as follows:

> The most famous and controversial project since liberalization has been NTT's and MITI's collaboration in large-scale integrated circuits (VSLI). In April 1975, NTT formed a LSI group with Hitachi, Fujitsu, and NEC at a cost of ¥20 billion to maintain telecommunications at a high level. Once the project was underway, MITI proposed consolidating NTT's efforts with MITI's own research, which was then conducted jointly with five major manufacturers at MITI's Electro-Technical Laboratory. Initially, NTT rejected the idea, primarily because it was reluctant to alter its telecommunications research to suit the more general needs of computer development. Nevertheless, on July 15, 1975, MITI and NTT agreed that part of the two efforts could be joined. In March 1976, the VLSI Technology Research Association was formed and commenced a four-year program with a budget of ¥70 billion. Basic research was conducted at the joint laboratory of the association, while the Joint Computer Development Laboratory and the Information Systems Laboratory took responsibility for applied research.[1]

By any standard, the VLSI program can be considered a success. It has produced over 600 patents and processes, and demonstrated the willingness and capacity of private corporations to work cooperatively under the aegis of a specially formed association, and with the technical and financial support of the government.

The U.S. government has argued that Japanese support of the VLSI program provided an unfair advantage to Japanese producers, given (1) that patents were distributed, at least initially, only to participating companies, through a research association, and (2) that foreign firms were excluded from participating in such projects or even from acquiring licenses based on VLSI-derived patents. IBM Japan, a wholly-owned subsidiary of IBM of the U.S., was excluded from the program even though by law it is a fully Japanese company and has manufacturing facilities in Japan. In 1979, perhaps under threat of patent blocking in the U.S., MITI altered its position, and indicated that it would license patents developed by government researchers to foreign as well as domestic firms. Moreover, patents owned by the VLSI Technology Association would also be available to foreign firms.

In other words, at least in principle, MITI indicated that technology jointly or partially owned by the government would henceforth be open to international licensing; similarly, privately held patents would be open if negotiations among the specific parties could produce agreement. In February 1982, MITI announced that new patents resulting from the next generation basic technologies project will be available to foreign semi-conductor makers.[2] Also, in late April 1982, MITI announced that it would review the entire subsidy system and study how and under what conditions foreign firms could be eligible for consignment payments, and how in practical terms a foreign firm could join a research association.

Still, despite the seemingly straightforward arrangement that has now been developed, considerable ambiguity about the access available to foreign firms remains. For example, according to a recent article in *Nihon Keizai Shimbun*, though foreign companies previously doing business in Japan have been permitted in principle to participate in research associations, the government seemed actually to be dragging its feet in implementing this change out of fear that foreign firms would not abide by Japanese practices—e.g., they might disseminate technologies obtained in licenses from the Japanese government.[3]

F. Recent and Likely Future Trends

Recent changes in government policy in the wake of the VLSI case, while providing for some degree of liberalization of ground rules affecting foreign firms in computer and similar high technology fields,

[1] Subcommittee on Trade, op. cit., p. 14

[2] This announcement was made on February 12 at the opening party of the New Function Element Research and Development Association. This association was formed in August 1981 to pursue the development of new function elements. See *Nihon Keizai Shimbun*, February 13, 1982.

[3] See *Nihon Keizai Shimbun*, April 22, 1982.

appear not to have eliminated entirely the differential benefits stemming from Japanese companies' participation in public/private research and development projects. For one thing, as in the case of the Basic Materials project, though the resulting patents may belong in full or part to the government, and in principle to the public in general including foreign firms, participating companies may benefit from lower royalty payments.[1]

Another advantage to participation is the liberal borrowing rates made available by the long-term credit banks, once an association is formed and the initial capital is gathered from both the private and the public sector. In other words, the initial government funds serve not only as seed money, but also as a de facto guarantee of support to commercial banks. This advantage is nearly impossible to quantify, but both government and industry representatives testify to its existence. More importantly, as discussed below, the process by which firms become eligible to participate in such projects is itself discriminatory.

To date there has been no direct foreign participation in any completed public/private R&D project or government-backed research association in the Japanese computer industry. Historically, the obvious reason for this is that such government-financed projects as FONTAC, VLSI and the Fourth-Generation Computer Subsidy were specifically designed to help domestic firms compete with foreign manufacturers, notably IBM. Indeed, from the foreign firms' perspective, depending on who was sharing what with whom, participation in such projects and/or other technology-sharing arrangements could prove more disadvantageous than advantageous. For example, although some foreign firms—notably so-called second-tier firms with less independent R&D capability than IBM Japan—are vociferous in their criticism of Japanese government practices, the so-called first-tier manufacturers, such as IBM but not limited to IBM, have at best mixed motives or intentions.

Private discussions with industry and government representatives suggest that participation in government/private research projects can provide member companies with practical experience that gives them a head start over non-participating competing firms—domestic or foreign. Yet, just how much of a head-start such participating companies receive, and if this head start occurs in all such cases, remains unclear even to foreign firms themselves. On the one hand, all foreign firms want government backing and access to new technologies if such access would improve their competitiveness. On the other hand, the foreign firms naturally wonder whether such participation would in fact be disadvantageous, if it forced them to "share" their own technologies or production processes with their Japanese competitors in much the same way that Japanese firms share technologies or processes. Also, as noted earlier in connection with the evolution of computer development within Jap n, the domestic firms have similar questions, the more developed they become in the state of the art.

Thus, only the most general conclusions are possible about either the technological advantages of participation or the "true" desires of foreign firms with regard to participation in joint R&D projects. These can be summarized, if somewhat crudely, as follows: It is not clear that U.S. first-tier firms or other foreign firms actually want to participate in Japanese joint public/private R&D projects if doing so means they would have to share their technology. It is clear, however, that they do not know the extent to which technology sharing actually occurs among participating Japanese firms. It is also clear that they do not want to be excluded from participating if they so desire. Under all circumstances, they do want access to resulting technologies and processes. In general terms, the extent to which foreign participation in Japanese public/private research projects would be advantageous to the foreign firms remains unanswered, and in many ways unanswerable, rooted as it is in the process of technology diffusion itself. In concrete terms, any such answer would depend in part on the extent to which the research being conducted is actually collaborative and then on the quality of the work and in turn the diffusion of technology and development of know-how that actually occurs.

Clearly, Japanese style collaborative research was designed mainly to achieve the twin goals of developing new technologies or processes and diffusing them among Japanese producers. Yet it must be left up to technical experts to address, probably on a case-by-case basis, the otherwise abstract question of whether, by the sheer act of participating, firms develop technical know-how and hands-on experience that gives them a distinct advantage over non-participating firms—even if non-participating firms have access to the resulting technologies shortly after they are developed. In our view, these are the kinds of questions that must be asked if one is to assess the impact of Japanese government support to the computer (or other, similarly organized high-technology industries); yet these are also the kinds of questions that do not lend themselves to all-encompassing, general answers. That is to say, in some cases participation does indeed provide a competitive advantage; in other cases it may well not.

Given the acrimony surrounding high-technology issues, skepticism on all sides is to be expected.

[1]In October 1981, Eiji Suzuki, Chairman of the Biotechnology Research Association, made the following ambiguous statement about the patents from his section of this project. "The patent rights from this Association will belong to the government. I am confident that this problem will be solved by making good use of Japanese customary practices." It is precisely this type of statement that suggests to foreign manufacturers that they will in some way be discriminated against.

Moreover, until concrete measures concerning technology licensing agreements are hammered out, such skepticism is bound to continue. However, it should be recognized that the Japanese government has now gone on record, and stated publicly (and apparently privately as well), that foreign computer firms must be included in government-sponsored high-technology research projects if they so desire. As a measure of this, for the first time last year, the Japanese government sought foreign participation in a joint public/private R&D project, the Fifth Generation Computer Project. The Fifth Generation computer is conceived of as the first "thinking computer."[1] MITI sponsored a Fifth-Generation Computer Conference in October 1981 that brought together more than 300 participants from seven countries. Whether this actually results in foreign participation, or whether competitive U.S. manufacturers will even want to participate, remains to be seen. Yet foreign participation may well be a general trend for the future, mainly for the following reason: given that Japanese computer manufacturers have attained state-of-the-art technologies—certainly in hardware, though less so in software production—the idea of collaborative research with foreign firms is now more appealing to them, either because their long-term self-interest would be fostered in a positive sense by scientific cooperation, or because an exclusionary approach would degenerate into a series of acrimonious battles that might lead in turn to patent blocking or the exclusion of Japanese products from foreign markets.

Another important question arises as to the overall extent of government support to the computer industry. To what degree has government support enabled Japanese computer and electronic manufacturers to achieve a position of competitive advantage vis-a-vis non-Japanese manufacturers? Can one in fact measure, more or less quantitatively, the overall effects of various support measures?

In our view, no conclusive answer to these questions is possible, and no definitive methodology exists for quantifying the relative impact of government policies versus private sector actions. Government support in the form of indirect measures is especially difficult to quantify. In terms of direct government support, one can be somewhat more conclusive. It is clear, for example, that specific industrial policy instruments, taken individually, appear to have had only limited impact. As seen in Table VI-4, (Loans Based on the *Kijōhō*, *Kidenhō* and *Denshinhō*), loan allocations to the Machine and Information Industries, as a percent of total investment, have not only been relatively small in recent years (roughly 0.8 percent of total investment), but were also no more than 2.5 percent of total investment even at the height of "infant industry" encouragement in the early 1960s. Secondly, as indicated in Chapter IV (Table IV-12, Revenue Losses Attributed to Special Taxation Measures), although total revenue losses resulting from technology-related tax measures have grown slowly over time (in contrast to overall special tax measures that declined), this growth only amounts to about four percent in nominal terms since 1975, i.e., less than inflation. Thirdly, with regard to outright subsidies, the amounts, with few exceptions, tend to be small.

Still, government support to the computer industry almost certainly has had an effect that is considerably larger than numbers alone would indicate. In this regard, the impact of indirect support measures has been considerable. For example, while laws in any country are both indicative and operational, both general and specific, in Japan they are particularly indicative, or general, compared with Western countries. The laws discussed above for promotion of a computer and electronics industry are good examples of such indicative legislation. They were primarily designed to serve as a general framework, and much discretionary authority was left to government officials and individual ministries. For example, in the 1978 law concerning the computer industry (*kijōhō*), certain types of machinery were designated as deserving of support, but the detailed list of machine types and the specific promotion plans to support these types were left to be drawn up after the law had been promulgated. In this way, the law indicated a shift in priorities, while leaving open the issue of just what support would be provided. In other words, the *kijōhō* and similar laws have provided a basis for continued government support before the specific design of what support would be given was even known—or knowable.

Indirect effects of specific instruments of government support can be just as advantageous, if not more so, than direct support. In the case of JDB loans, for example, it is less the amount of the JDB loan itself that constitutes an aid to industry; rather it is the implication that goes with JDB lending vis-a-vis a manufacturer's application for commercial loans. Typically, once the JDB has analyzed and approved loans to a particular company producing a given new technology or process, that company is then "cleared" for commercial lending simply because the JDB's technical and credit review procedures are considered highly rigorous. Moreover, JDB support is usually said to imply that further government financial backing would be forthcoming in the event the new technology or process in question runs

[1]The Fifth Generation computer will be organized around the following themes: basic application systems, basic software systems, new advanced architecture, distributed function architecture, VLSI technology, systemization technology, and development of supporting technology. Indications are that total capitalization for the project will be more than ¥100 billion, though in the absence of foreign participation, capitalization may be smaller. See the keynote speech, "Challenge for Knowledge Information Processing Systems," T. Motooka et. al., *Fifth Generation Computer Conference* (Tokyo, October 1981).

TABLE VI-4
LOANS BASED ON THE LAW ON TEMPORARY MEASURES FOR PROMOTION OF SPECIFIC MACHINERY AND INFORMATION INDUSTRIES AGAINST THE TOTAL FACILITY INVESTMENT IN MACHINERY INDUSTRIES

Period	(A) Investment Amount Of Machinery Industry (Annual Average)[1]	(B) Loan Amount Based On The Law By The Development Bank (Annual Average)[2]	(B)/(A)
1961-65	299	7.5	2.5%
1966-70	588	8.4	1.4%
1971-75	866	8.9	1.0%
1976-79	1,146	9.2	0.8%

Unit: ¥ Billion

NOTES: 1. Investment amount is on payment basis.
2. The loan based on the law includes the loans made by Kijōhō, Kidenhō, and Denshinhō.

SOURCE: "Plant and Equipment Investment Plans of Key Industries," (Questionnaire) by the MITI, Japan Development Bank, 1980.

into unexpected difficulties—though such a need has not been tested on a large scale.

The review of government support programs to the computer industry discussed in the body of this chapter has in effect addressed another important question: namely, the extent to which government policies have previously, and still to this day, discriminated, explicitly or implicitly, against foreign firms. Again, no quantitative measurement is possible. One can say that explicit discrimination against foreign firms, stipulated in laws or policies has declined. There are subsidy programs that explicitly state in their by-laws that foreign firms are not eligible for support; yet, these programs are few, their allocation of funds is limited, and they are currently all under review by the Japanese government. Presumably this review and the subsequent amendment of these by-laws will eliminate the remaining *explicit* vestiges of "infant industry" protection. This will not, however, eliminate the problem. "Vestiges" that amount to an anti-foreign bias will remain.

Even as explicit discrimination against foreign firms is eliminated, the *process* by which a firm or a group of firms becomes eligible for government support, either through outright grants or selection for participation in research assocations, still has an *implicit* anti-foreign bias. The informality of the selection process, based upon a high degree of "off-the-record" communication among technology firms in Japan (exemplified by the floating of ideas to the government discussed in the biotechnology research association discussion) make it very difficult for foreign firms to participate—unless they have a strong presence in Japan, a knowledgeable Japanese staff, and years of experience building channels of communication with the Japanese government. Some foreign firms have these advantages; others clearly do not. At the same time, as discussed earlier, it is not at all clear that foreign firms want to be the recipients of such government funds if this would require collaborative research along the lines that has characterized joint public/private R&D projects to date—or for that matter, Japanese government scrutiny of the R&D they would be undertaking. Moreover, as discussed in Chapter I, the problem here has more to do with the lack of comparability between Japanese and foreign institutions and practices, the effects of which amount to an anti-foreign bias, than practices that are specifically designed by Japanese industry or government to exclude foreigners.

At the minimum, by explicitly linking science and technology policies and industrial policies, the Japanese government has helped create a political and economic environment that encourages investment and research, both directly and indirectly, in high technology areas. This general commitment to technological development was historically, and remains to this day, supported by more specific policies aimed at fostering priority areas. For more than a decade now, the government has sought to foster an environment that promotes continual economic growth through the development of "knowledge-intensive industries." The government has also seen its own role as that of a mediator, encouraging collaborative research among otherwise competitive firms, and providing inducements in the form of matching grants, loans, or indirect financial support to encourage such collaboration. This pattern of government involvement in technological development in general, and in computers in particular, is likely

to continue—even as the specific means of promoting technology change over time.

Indeed, the specific means of promoting technology has already had to change, at least in the sense of "including," to some extent, foreign manufacturers. Moreover, as indicated above, since Japanese firms have now reached a technological frontier in many areas, foreign participation in government-private projects or joint venture arrangements in the form of know-how or financing, may well appear not only unavoidable, but also more attractive than in the past. If nothing else, Japanese firms will increasingly need to sell abroad, either new products directly or licenses from home-grown technology. To do this, they will need to avoid a protectionist posture toward foreign firms—at least relative to the past.

CHAPTER VII

Policies for Declining Industries

The Japanese government has pursued policies toward declining industries that have contributed greatly to their successful reorganization or retrenchment. Japanese policies seem to us at least as effective as comparable policies in other advanced industrial countries—and probably more so. Yet, as the Japanese economy continues to develop, and as more of the country's basis manufacturing industries become uncompetitive, the burden that is likely to be placed on policies to deal with declining industries is almost certain to increase; at the same time, the policy instruments available to deal with these industries face increasing constraints.

Many countries pay at least nominal attention to the need for industrial structure shifts in the face of major economic changes, as evidenced by the basic principles of "positive adjustment policies" agreed upon by the OECD Council of Ministers.[1] In fact, however, most developed countries, particularly those in Western Europe, have shown an unwillingness to bear the costs associated with such shifts (e.g., temporary unemployment, the need for retraining and re-employment of workers, and the writing off of certain traditional industries). Many so-called positive adjustment measures have actually served to subsidize continued production in otherwise declining sectors (i.e., to amount to negative adjustment, or non-adjustment, policies). As noted above, Japan's record in structural adjustment has been impressive in the sense that, more than in other OECD countries, its overall approach has emphasized the fostering of new and growing industries, e.g., through the kind of science and technology policies discussed in the previous chapter, rather than the protection of declining industries.

Official pronouncements, detailed economic plans, and public debate have consistently viewed Japan's future economic health as depending on an ability to change its industrial structure in response to changing world and domestic economic conditions. The shifts, both in policy emphasis and actuality, from basic to advanced manufacturing, and more recently, from advanced goods-producing industries toward so-called knowledge-intensive industries, reflect a widely-shared belief in the desirability of genuinely positive adjustments. A clear recognition that the development of more advanced industries requires a corresponding contraction of less competitive industries has helped Japan shift labor and capital from industries that would otherwise be a drag on the economy to industries that are likely to be on the frontier of economic development worldwide.

A variety of measures are available to the Japanese government to promote rationalization or adjustment in declining sectors of the economy.[2] These measures can be applied to industries, workers, and communities.[3] Measures directed toward an industry have typically been grouped together as a policy package, tailored for the particular industry in trouble and reinforced by other national policy programs. For example, as discussed in detail later in the chapter, an adjustment plan was specifically designed for the shipbuilding industry. Government suppor was available, but only on condition that the industry actually reduce capacity. This plan was reinforced by direct support to workers through the National Employment Insurance Law. But even under the general unemployment insurance system, benefits are only disbursed to workers if they agree to participate in re-training and placement programs.

[1] The key documents are collected in OECD, *The Case for Positive Adjustment Policies* (Paris: June 1979).

[2] In our view, the usual English translation of the currently applicable law on declining industries is misleading in American usage. The Japanese wording of the currently most applicable law concerning structural adjustment is *Tokutei fukyō sangyō antei rinji sochihō*, literally the Law on Temporary Measures for the Stabilization of Specified Depressed Industries. The phrase "*fukyō sangyō*" is normally translated as "depressed industry." But the law as a whole is specifically designed to deal with structural, rather than cyclical, problems, and the word "depressed industry" in English normally carries the connotation of a cyclical downturn. Thus, we prefer to use the phrase "declining industry" to refer to those industries thought to be suffering from long-term, or structural, problems. Because this law is so frequently referred to in standard English-language material on Japan as, in shortened form, the Depressed Industry Law, we follow this usage in references to the law itself, but ask the reader to remember that the difficulties being referred to are of a predominantly structural rather than cyclical nature. In discussing the problems of structural adjustment in more general terms, we use the term "declining industries," and in this spirit we have titled this chapter "Policies for Declining Industries."

[3] This discussion focuses on industry and worker-related measures.

This gives the government a certain influence over the labor force, allowing it to direct workers into more competitive sectors of the economy, and in any case providing a positive incentive for workers to cooperate with the adjustment process. Thus, for both industry and labor, direct government assistance for structural adjustment has been contingent on some adjustments' actually taking place.

Moreover, Japanese government policies dealing with adjustment assistance for hard-hit sectors make no distinction between international and domestic causes, an important difference in comparison with U.S. laws and one that, in our view, makes for a much more flexible and effective policy.[1] The Japanese system involves a far less cumbersome policy framework, while placing far greater emphasis on achieving results—i.e., actual adjustment—than has the U.S. policy framework, which has tended to focus more attention on determining whether problems are due to imports than on obtaining positive adjustment regardless of the cause of a decline.

Despite this generally more result-oriented framework, and Japan's relative success in dealing with declining industries in comparison with other advanced industrial countries, Japanese policies for declining industries have to be judged, on a absolute scale, as no more than partially successful. As discussed in various cases below, the policy packages designed to deal with a particular industry have been put together later rather than sooner.[2] Moreover, in the cases to date, the impressive economic adjustments that finally occurred did so because the exigencies of the market, not the policy packages of the government, brought matters to a head. Still more importantly, the most difficult cases are yet to come: further adjustment of basic manufacturing industries and even of some high-technology industries (or sectors).

In this chapter, we first describe the basic legislation and administrative practices for the support of depressed industries. Secondly, we look at a number of industries: shipbuilding, petrochemicals, petroleum refining, aluminum, and nonferrous metals. Each of these cases illustrates different aspects of the problems associated with structural adjustment, as well as various types of government responses. Finally, we suggest some implications of likely trends in Japanese policies and their applicability to the U.S.

A. Legislation and Administrative Practice for Depressed Industries

The Law on Temporary Measures for the Stabilization of Specified Depressed Industries (i.e., the Depressed Industry Law) was enacted in 1978.[3] It identifies several specific sectors, including shipbuilding, aluminum refining, synthetic-fiber manufacturing, and open-hearth industries, as possible candidates for government support. In a presentation to the OECD, Makoto Kuroda, then-Director-General of MITI's Research and Statistics Department, described the logic behind the law in the following terms:

> The Depressed Industries Law was enacted in 1978 in order to implement various measures to rebuild industries which had experienced structural depression due to changes in relative prices after the first oil crisis. . . . As a result of the first oil crisis, 20 percent to 40 percent of the capacity in such industries as aluminum

[1]Contrast Japan's Depressed Industry Law or the National Employment Insurance Law to the trade adjustment assistance program in the 1974 U.S. Trade Act, which cannot provide assistance to hard-hit communities, firms, or workers unless they can prove that their problems are due to competition from imports. See, for example, Comptroller General of the United States, General Accounting Office, *Report to the Congress: Worker Adjustment Assistance Under the Trade Act of 1974 to New England Workers has been Primarily Income Maintenance*, HRD-78-153, 20 (1978); Comptroller General of the United States, General Accounting Office, *Report to the Congress: Worker Adjustment Assistance Under the Trade Act of 1974–Problems in Assisting Auto Workers*, HRD-77-152, 5 (1978); Comptroller General of the United States, General Accounting Office, *Report to the Congress: Adjustment Assistance Under the Trade Act of 1974 to Pennsylvania Apparel Workers has been Untimely and Inaccurate*, HRD-78-53, 7-8 (1978); and Comptroller General of the United States, General Accounting Office, *Report to the Congress: Adjustment Assistance to Firms Under the Trade Act of 1974–Income Maintenance or Successful Adjustment?*, ID-78-53, 25 (1978).

[2]The textile industry will not be discussed as a separate case in this report because much has already been written on it already, and because it is of more interest as a historical issue than as a current or prospective policy problem. In many ways, textiles represent a declining industry that has been kept alive artificially. See, for example, Brian Ike, "The Japanese Textile Industry: Structural Adjustment and Government Policy," *Asian Survey*, Vol. 20, No. 36, 1980, pp. 532-552. In this article, Ike argues that the industry has been declining since the 1950s, and by rights should no longer exist in Japan in its current fragmented form. However, industry representatives had sufficient political power to induce the government to try to keep it alive through various assistance programs, which in fact have failed to accomplish this goal. Some firms, notably certain large companies with access to capital and/or high technology, have developed entirely new product lines that are competitive, even highly innovative, e.g., Toray Industries' development of ultra-suede, which has enjoyed brisk sales at home and abroad.

[3]For an excellent Japanese government commentary on this law, see Tsūshō Sangyōshō [MITI], Tsūshō Sangyō Seikaku Kyoku, [Trade and Industry Policy Bureau], ed., "Kōzō Fukyō Hō no Kaisetsu" [A Commentary on the Structurally Depressed Industries Law], (Tokyo: Ministry of International Trade and Industry, 1978).

refining, synthetic fibers, chemical fertilizer, and shipbuilding was observed to be excessive. This could have resulted in an increase in bankruptcies and a serious unemployment situation if left unattended. . . . [T]he law provided the program to scrap down or seal off . . . production capacity.[1]

Detailed provisions of the Depressed Industry Law are outlined in Figure VII-1. Industries are eligible for help if the following conditions apply:

1. the industry must have severe overcapacity (with little likelihood of a turnabout in economic conditions);
2. more than one-half of the firms in the industry must be in dire financial condition;
3. firms representing two-thirds of the industry must sign a petition seeking designation under the law;
4. there must be broad agreement that some scrapping of facilities is necessary to overcome the situation.

Even then an industry must be specifically designated by a ministerial order. Once an industry is so designated, the ministry with jurisdiction over its activities (usually MITI) drafts a basic stabilization plan outlining possible plant reductions, employment measures, and other conversion measures. This basic plan may be highly specific or general, depending on circumstances. Consultation with industry and union representatives is required in drawing up the plan. Still, the plan per se lacks the force of law, and an industry is not compelled to go along with all aspects of it. On completion of the plan, negotiations over specific measures begin in earnest.[2] These inevitably lead to considerable disagreement over prospective "voluntary" actions by firms in return for the prospective government support they are seeking. No individual firm is anxious to have its capacity reduced if holding out for a better deal might somehow improve its market share or its competitive position generally.

Since declining industries are by definition a relatively high-risk category, one goal of the government's support measures is to induce private banks to loan firms in the industry sufficient funds to facilitate the adjustment process. For industries in extremely weak financial condition, one relief measure that is authorized (but not required) by the Depressed Industry Law is a guarantee of loans for the disposition of facilities. This measure works through a special Depressed Industries Credit Fund, the initial capitalization of which is provided by both the government and private companies in a particular industry; this financial pool then serves as a basis for subsequent loans from the JDB and/or commercial banks.

If competitive and other conditions prevent the voluntary actions and other policy measures from achieving the goals of the basic plan, or if the costs of such achievement become very high, the industry can then be directed to meet as a group with the relevant ministry in an effort to hammer out joint actions for capacity reduction. In general, actions under the 1978 law are exempt from antitrust laws. However, the Fair Trade Commission has the right to review all joint plans. Should it find these excessively anti-competitive, the FTC can call for their alteration or withdrawal.[3]

In its present form, the Depressed Industries Law is scheduled to terminate on June 30, 1983. It is virtually certain to be extended and modified in some form. Both government and industry representatives consider the current law too limited. Since 1978, several additional sectors, such as petrochemicals and some ferro-alloys, have acquired all the earmarks of a declining industry, but are currently ineligible for assistance. This desire to extend the law to additional sectors is accompanied by an interest on the part of MITI to have the new law permit a more active pursuit of mergers and other steps for the revitalization of specific industries. MITI is apparently trying to use the occasion of the extension of the 1978 law dealing with structural problems to establish a new legal basis for dealing with cyclical downturns as well. If successful, this would bring about an important change in the thrust of Japan's adjustment policy generally—away from capacity reductions in support of structural change and toward a variety of "temporary" measures to support industries during a cyclical downturn. Parenthetically, this change of focus would also augment MITI's otherwise declining powers vis-a-vis Japanese industry generally.[4]

---

[1] Makoto Kuroda, *Japanese Industrial Policy*, JR-4 (Tokyo: Ministry of International Trade and Industry, June 1981), p. 8.

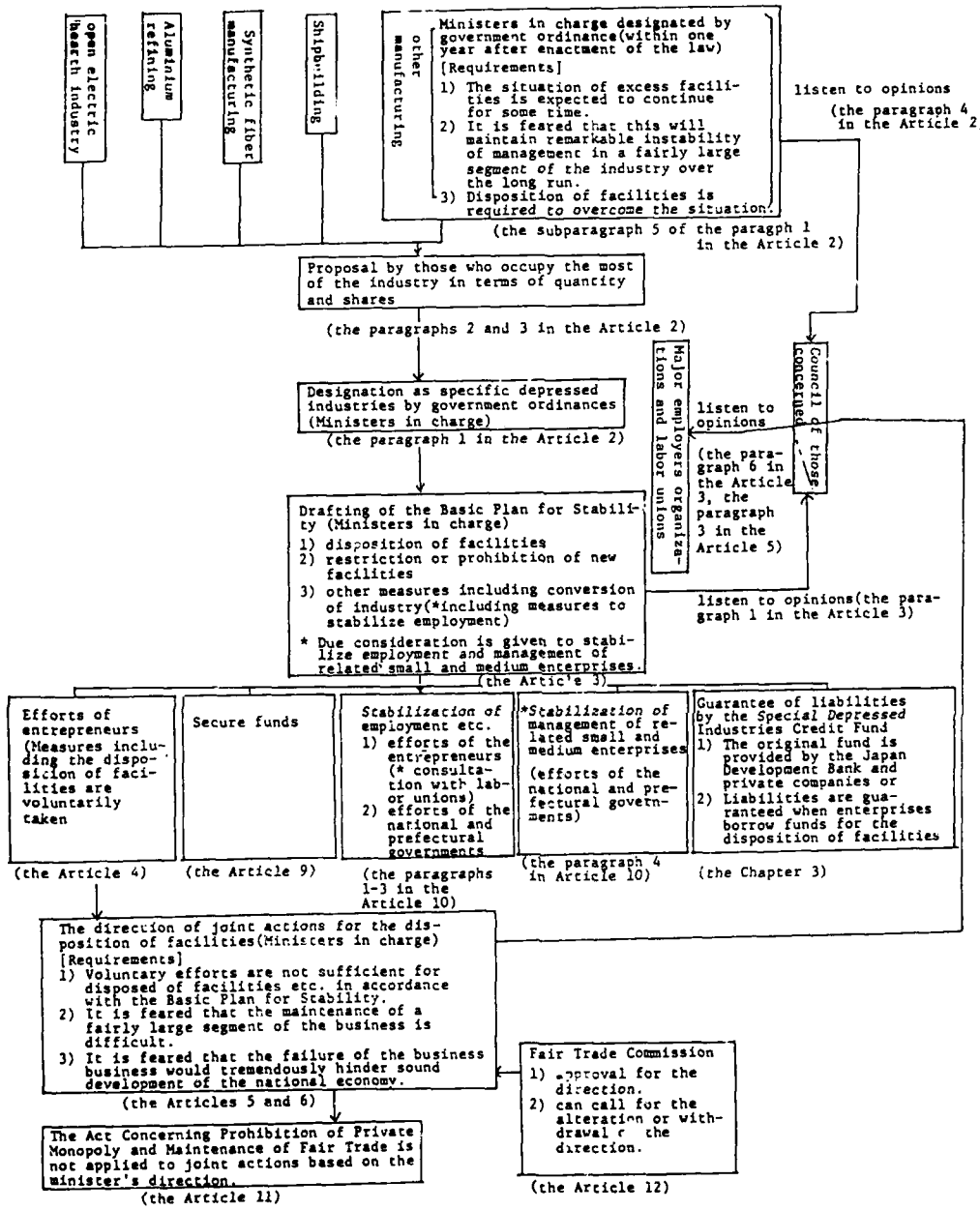
[2] The law does give the ministry in charge of a particular industry the right to prohibit construction of new facilities once an industry has been designated as depressed, which, as noted above, is only after firms in the industry have requested help. Thus, the law gives the ministry some degree of direct control over an industry, though not an unlimited amount.

[3] The FTC cannot force such alteration or withdrawal, however. MITI's initial draft of the law proposed that MITI be empowered to control investment and to exempt from antitrust laws mergers and acquisitions involving even those firms in an industry that had not petitioned for support under the Depressed Industry Law. This generated such criticism on constitutional, economic, and philosophical grounds from the FTC, consumer groups, legal scholars, economists, and even some firms that MITI redrafted the law, eliminating this provision. For further details, see J. Mark Ramseyer, op. cit., and Gary R. Saxonhouse, "Industrial Restructuring in Japan," *Journal of Japanese Studies*, 5 (Summer 1979), pp. 273-320.

[4] For example, MITI has launched an active public relations campaign on behalf of the basic materials industries, e.g., aluminum, petrochemicals, and paper and pulp. It

Figure VII-1

OUTLINE OF THE LAW ON TEMPORARY MEASURES FOR SPECIFIC DEPRESSED INDUSTRIES



** Prefectural governors can submit their opinions to the ministers in charge where they recognize that disposition of facilities etc. will have a profound affect on the local economy.

** The ministers in charge and Labor Minister must communicate and cooperate closely on matters related to employment.

* This law shall be abolished by June 30, 1983.

SOURCE: BUSINESS BEHAVIOUR DIVISION, MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY.

Besides the Depressed Industry Law, a variety of other measures can and have been taken to facilitate adjustment in declining industries. Industry-specific laws, such as the Cotton Textile Industry Law and the Petroleum Industry Law, have been commonplace, and these can serve as a basis for government actions with regard to structural adjustment, even if the law was not initially drafted to address competitive declines. Additional steps to lessen the pain of unemployment caused by structural adjustment have also been established. These include an extension of the eligibility time for unemployment benefits, increases in unemployment allowances for displaced workers in designated industries and communities, and direct assistance, via a computer bank, in the placement of workers in new locations. Correspondingly, workers who refuse government offers of retraining or relocation cannot receive the incremental benefits flowing from laws specifically addressed to structural problems.[1] An outline of major unemployment measures under these laws is shown in Figure VII-2. The Law on Temporary Measures for Unemployed of Specified Depressed Industries is summarized in Figure VII-3.

More informally, particularly vis-a-vis industries, the government (again, usually MITI) can promote structural adjustment by taking an intermediary role, facilitating agreement among firms in an industry (as well as among unions and other concerned groups). This of course falls under the general category of MITI's actions through administrative guidance, perhaps best described (in English) by Chalmers Johnson as follows:

> Administrative guidance is distinct from the legally sanctioned license and approval authority of a ministry in that it does not rest on specific law, only on the general establishment act creating a ministry. Bureaucrats can "recommend" (kankoku), or "request" (yōsei), "advise" (jogen), or "mediate" (chūkai) on any matter within their jurisdiction as specified in the establishment law of their ministry or agency. . . . The cabinet legislation bureau defines administrative guidance (gyosei shido) as a device designed to 'enable an administrative agency to induce the party or parties concerned to take or not take a certain action in such a way that a given objective of the agency may be achieved with the cooperation of the party or parties thus approached' . . . . The bureau adds that there are three restrictions on its use: (1) it has no legal binding power; (2) it must be confined to the 'duties and functions' of the administrative agency concerned; and (3) if it involves behavior that comes within the purview of the Anti-Monopoly Law, administrative guidance must be in accordance with one of the laws which specifically allow for exceptions to the Anti-Monopoly Law.[2]

Such informal intervention has involved far more than simple mediation, usually extending to various suggestions that, depending upon circumstances, can have varying degrees of influence. Although MITI cannot force industry compliance unless specific measures fall under the provisions of an existing law, its powers have always exceeded those specifically legislated. Typically, this additional influence stemmed from MITI's extensive authority over licensing and the granting of soft loans from government-affiliated financial institutions—and in recent times even because of a legacy of such authority.[3] However, this power does not mean that decisions can necessarily be reached easily. Many industries have resisted MITI's rationalization and stabilization plans. The following case studies illustrate the complexity of this interplay between government and business.

B. Shipbuilding

Shipbuilding represents perhaps the best example to date of an industry in Japan that has been forced to adjust to changed economic conditions—most importantly in response to the collapse of the world tanker market in the mid-1970s, but also the gradually increasing competition from various NICs such as South Korea, Taiwan, and Brazil. Not only has the industry been forced to adjust; it has, in fact, adjusted quickly and efficiently.

In the 1950s, the government designated ocean shipping (both shipbuilding and the merchant marine) as a strategic industry, partly because of its heavy utilization of labor, steel, and other domestically-produced manufactured goods, and partly because of its presumed national security value for a trade-dependent, island country. Consequently, both in the initial stages and as the industry evolved, the government extended various forms of support in the form of tax benefits, low interest and deferred loans,

---

would not be surprising to see the introduction of new general adjustment legislation. If this were heavily opposed by the FTC, MITI might then seek a special law aimed specifically at hard-hit basic materials industries. See, for example, a recent MITI book on the basic materials industries, *Kiso sozai sangyō no tembō to kadai* [Outlook and problems of the Basic Materials Industry] (Tokyo: Ministry of International Trade and Industry, 1981).

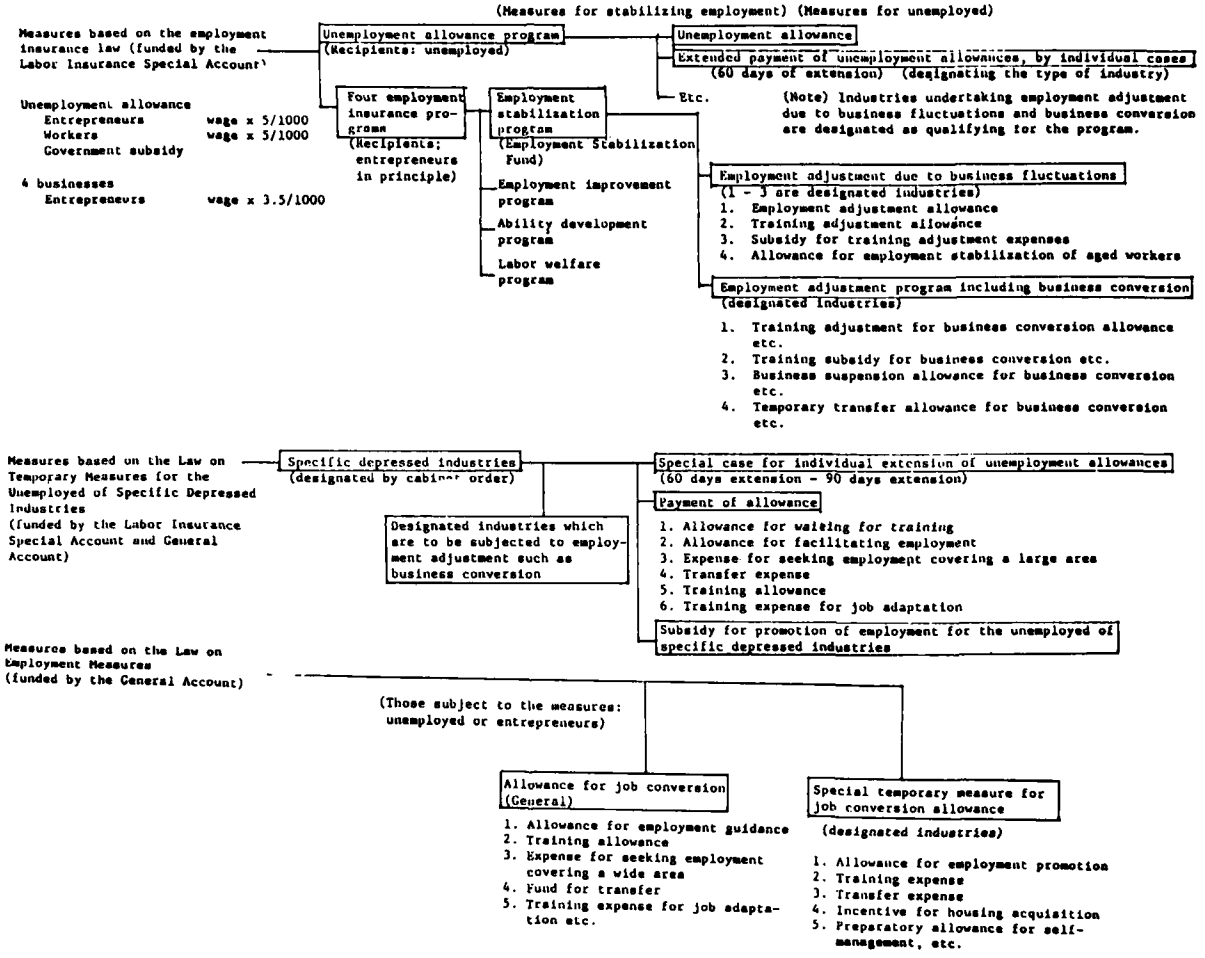
[1] For community assistance measures see Ramseyer, op. cit., especially p. 608.

[2] Chalmers Johnson, in Scalapino, op. cit., pp. 253-254.

[3] As discussed elsewhere in the report, during the 1960s and 1970s, many of these direct MITI powers were weakened, especially the ability to control industries through foreign exchange allocations and foreign trade authorizations.

Figure VII-2

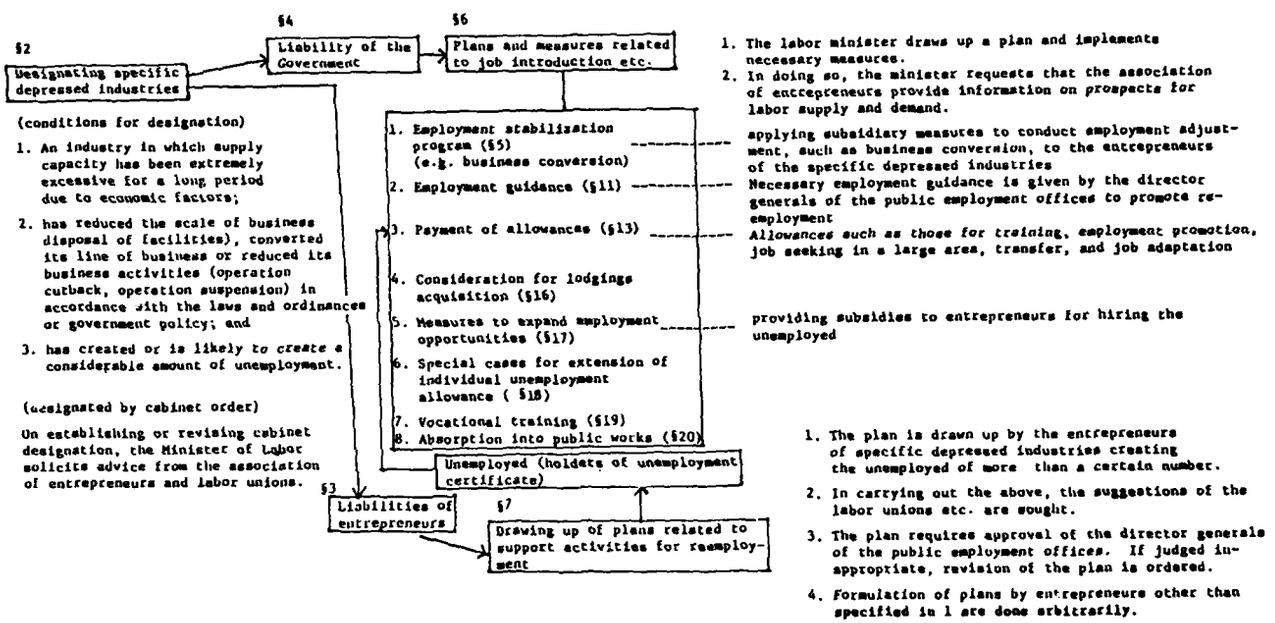
OUTLINE OF MAJOR UNEMPLOYMENT MEASURES



SOURCE: BUSINESS BEHAVIOUR DIVISION, MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

Figure VII-3

LAW ON TEMPORARY MEASURES FOR UNEMPLOYED OF SPECIFIC DEPRESSED INDUSTRIES



SOURCE: BUSINESS BEHAVIOUR DIVISION, MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

financing through the Export/Import Bank and the JDB, and, in an unusual move, a special subsidy based on an outright grant of industry control of the licensing of raw sugar imports.

The early 1960s saw serious stagnation in the Japanese shipping industry, as the boom induced by the 1956 Suez crisis collapsed. Special legislation—specifically, the Law for Temporary Measures for Reconstruction and Integration of the Shipping Industry—was passed in July 1963 to help the industry get through this downturn. Key provisions of the law included a consolidation of the industry into six groups and a rescheduling of outstanding loans. By the end of a five-year "reconstruction period," the stagnation problems stemming from the post-Suez collapse had been largely resolved, but various forms of industry support continued. Loans were extended under the Government Shipbuilding Program, administered by the Ministry of Transportation (MOT), which has jurisdiction over shipbuilding (except when exports are involved, in which case MITI too has partial jurisdiction). Shipping companies continued to receive subsidies for a portion of their interest payments incurred in shipbuilding loans. And various other measures were either continued in altered form or newly introduced. By the early 1970s, drawing on this support, together with low cost steel production and still relatively cheap labor, Japan became the world's lowest cost producer of ships, achieving some 50 percent of total world production. At that point, the government's support measures were largely withdrawn.

Success was rather short-lived, however. The first oil shock hit in late 1973. The following year, the world tanker market collapsed. The global industry suddenly faced a cyclical problem of severe excess capacity, and therefore also excess labor, which led in turn to increasingly acrimonious political pressure from other advanced industrial countries, particularly in Europe, whose shipping industries were in even worse shape than Japan's. To compound the difficulties of the moment, this crisis brought to light a growing structural problem in the form of competition from producers in the NICs. The drastic decline in current orders for ships over 2500 GT from Japanese yards gives some sense of the magnitude of the collapse—from 33.8 million GT in 1973 to 9.4 million GT in 1974, more than a 70 percent drop. By 1978, orders had fallen to a level only 10 percent of the 1973 peak (3.22 million GT).[1] Once again, Japanese government support measures were brought into play; steps were instituted with the close cooperation of both the shipbuilding industry and the major unions.

The Shipping and Shipbuilding Industries Rationalization Council, a MOT advisory group, issued a report in December 1974 recommending measures to aid the industry. In June 1976, in an effort to avoid what was euphemistically referred to as "confusion" in the industry, the council outlined a proposal to reduce working hours for FY 1977 and FY 1978, based on a consensus 10-year forecast of demand and supply. This plan called for average working-hour reductions to 67 percent for FY 1977 and 63 percent for FY 1978 (from the peak operating hours registered for each firm from FY 1973 to FY 1975), balanced across the industry.[2] Market conditions continued to deteriorate, however, and the ministry had to force the industry to accept even more scaled down estimates of viable production levels. Thus, in 1978, it made two additional recommendations: for the remainder of fiscal 1978, production should be cut from an earlier target of a 72 percent operation ratio to 67 percent on average, and subsequently in 1979 and 1980 to 39 percent.[3]

The MOT's requests that the industry cooperatively reduce operating ratios triggered the usual debate with the FTC over possible infringements of the anti-monopoly laws, particularly since the industry had earlier formed its own committee to discuss the MOT's recommendations, and, on acceptance of these as modified in the continuing discussions, to work toward achieving the targets. But even the modified recommendations soon became moot, with the increasing recognition that the industry faced a structural, not a cyclical, decline, and for this reason needed a stabilization plan that would specifically exempt it from anti-monopoly legislation. As eventually agreed upon in late 1978, the plan recommended closure of some firms, capacity cutbacks in all others, scrapping of government ships ahead of schedule, export of excess ships to developing countries as a form of foreign aid, and finally a redesign of the industry itself to induce it to focus on new activities such as floating factories, offshore oil drilling equipment, and LNG tankers. The planned cutbacks totaled at minimum 35 percent of shipbuilding capacity.

The MOT's recommendations for the plan were not advanced in isolation. They were the result of extensive discussion and negotiation with the parties most directly affected, namely the industry and the unions; no single stabilization or restructuring plan

[1] Japan Confederation of Shipbuilding and Engineering Workers Union, *Labour Union's Adaptation to the Structural Change in the Shipbuilding Industry* (Tokyo: August 1980), p. 24.

[2] These figures are for large firms (over 1 million GT launching capacity); enterprises with less than 100,000 GT launching capacity were requested to cut working hours by less than those enterprises with either 100,000 to 1 million GT launching capacity or over 1 million GT. See Japan Confederation of Shipbuilding and Engineering Workers Union, op. cit., pp. 31-32.

[3] This production decline is an industry average distributed as follows: the seven largest companies were to operate at 34 percent of capacity, the 17 middle-ranking companies at 45 percent, and the 16 smallest companies at 49 percent, ibid., p. 32.

was accepted as a matter of course, since the process of adjustment was hardly easy, perhaps especially in Japan, with its tradition of lifetime employment for some part of the work force. Moreover, the smaller firms in the industry, which tended to concentrate on shipbuilding alone, had much less leeway than the large firms to reconstruct themselves through diversification. Capacity reductions were all the more painful for them. Consequently, while the industry was in general agreement on the need for some degree of capacity reduction, firms disagreed vehemently about which of them should bear the burden of these reductions. Some firms even sought temporary financial assistance directly from the government, in the hope that excess capacity could be maintained until market conditions changed. In a famous case, political pressure was applied to rescue the hard-hit Sasebo Heavy Industries. One account describes the Sasebo case as follows:

> Sasebo Heavy Industries is the eighth largest shipbuilder in Japan. Its major stockholders are Nippon Steel and Nippon Kokan, Japan's two largest steel companies, and its major bank is Daiichi Kangyo.
>
> It is a major employer in the City of Sasebo, so its announcement in early 1978 of financial difficulty and its intention to seek voluntary early retirement by one thousand employees produced concern. Concern later became crisis when the major stockholders decided not to guarantee future loans, and the banks refused additional funds without guarantees. Confidence in the company's management was low and could not be restored. The major ministries involved—Finance and Transport—and the Bank of Japan chose not to arrange a rescue, and were prepared to see the company declare bankruptcy. The consensus of the regular policymaking apparatus was that the company should be allowed to fail. This became politically unacceptable, however, when the work force and the Sasebo community petitioned members of the Diet, including the Prime Minister, to intervene. The Prime Minister requested the two Ministries to find a solution. It was not forthcoming. Then the Prime Minister *ordered* that a solution be found. Eventually the banks, major stockholders, and ministries put together a package which the banks grudgingly accepted. It included some government financial relief, a hastily arranged American ship repair business to bolster demand, a syndicated bank loan from eighteen different banks, and a modest new capital infusion from the major stockholders. All of this was premised on a carefully negotiated change of management.[1]

[1]Ira Magaziner and Thomas Hout, *Japanese Industrial Policy*, Institute of International Studies Monograph (Berkeley: University of California Press, 1980), pp. 86-87. Emphasis is in the original. To bring the case up to date, after the assistance discussed above was provided, the required adjustments were achieved. Today, Sasebo Heavy Industries has kept its market position in the industry, and is operating profitably.

The shipbuilding industry was designated as "structurally depressed" in the 1978 law, thereby becoming eligible for assistance under the Depressed Industries Law. One form of this assistance was access to funds under the Special Depressed Industries Fund. Initial monies, totaling ¥2 billon, were provided equally by the government and firms in the industry, and handled by a special non-profit corporation set up by the industry for this purpose. The corporation was to use its paid-in capital to leverage loans for the acquisition of assets from those firms that were reducing capacity. Government guarantees could be granted on these loans up to a total of ¥96.5 billion—70 percent of this to be provided by JDB, and the remaining 30 percent by commercial banks. To pay off the loans, the assets acquired by the corporation were to be sold off and converted to other uses. Interest payments were to be met by a levy on each shipbuilding firm's new orders (0.1 percent in 1979, 0.15 percent in 1980, and 0.2 percent in 1981).

Adjustment was also facilitated by the unemployment-linked benefits extended under the general Employment Insurance Law, and passage of the Law on Temporary Measures for Unemployed of Specified Depressed Industries. Perhaps even more important were a series of measures taken to expand domestic demand for ships, in part under the auspices of the Emergency Measures for Building Up Japan's Ocean-going Shipping Fleet (FY 1977-81). These included a ship-scrapping program, acceleration of a long-term plan to expand Japan's commercial fleet, acceleration of long-term purchase plans for the Maritime Self-Defense Force and the Maritime Safety Agency, and various measures to reduce the cost of financing the acquisition of new ships (perhaps most importantly, an interest rate subsidy of 2.5 to 3.5 percent).

Although these government measures were important, it was the shipbuilding industry itself that vigorously sought and carried out the necessary adjustments. In fact, the industry's actions were so effective that by March 1980 its basic stabilization plan had been more than achieved, utilizing only ¥37 billion of the ¥96.5 billion funding available under the credit fund. Most of the money that was used went to smaller companies in the industry; the larger firms used internal funds. A number of union and management representatives, in interviews with members of the study team, agreed that the seven largest companies deserve credit for major efforts to make the adjustment process succeed. They noted that the seven largest companies provided the bulk of the funds to the non-profit corporation that bought up

excess capacity; the seven also bore the brunt of the capacity reductions (40 percent of their own capacity, equivalent to some 70 percent of the total industry reduction). On the other hand, some 49 smaller shipbuilding companies went bankrupt. Since a 35 percent capacity reduction also meant close to 35 percent reduction in employment, and the unions effectively prevented firing, the companies were forced to use various other means to reduce the labor force. For the large companies, transfers to other lines of business was an important method of dealing with the problem. For both the larger and the smaller firms, "voluntary retirement" (i.e., leaving the company, not early retirement) was also encouraged, in part through one-year salary premiums on top of the normal separation allowances. Firms also took various cost-cutting measures in addition to capacity reductions, including wage cuts, curtailing annual wage hikes, and cutting semi-annual bonuses; they also restructured production towards plant exports and other new activities.[1]

In general, the shipbuilding industry provides an excellent example of how an industry has adjusted, albeit painfully, but still largely through its own initiative—and adjusted so efficiently that its remaining production capacity continues to be among the most efficient in the world.

C. Petroleum Refining and Petrochemicals

In contrast to the shipbuilding industry, the structural problems of Japan's petroleum refining and petrochemical industries have proven much more difficult to resolve. In earlier years, both industries were considered "strategic," and were built up with the help of specific government intervention. More recently, the government has sought, so far unsuccessfully, to protect these same industries from fundamental changes in the world economic environment. A vivid example of the contradictions built into the current policy package is the conflict, discussed in detail below, between the petroleum refining industry, which produces naphtha, and the petrochemical industry, which consumes it. This conflict—centering on the desire of the petrochemical industry to purchase cheaper naphtha from abroad and thereby to reduce or cease heretofore compulsory purchases of more expensive domestically-produced naphtha—has arisen as a direct consequence of changed market conditions. The resulting price differentials between imported and domestically-produced naphtha have made the previously stable relationship between the refining and petrochemical industries uneconomic. MITI has tried—but so far failed—to resolve this conflict so much so that the difficulties have now become politically as well as economically intolerable.[2]

1. Historical Overview

In the early postwar years, both the petroleum refining and the petrochemical industries were earmarked as strategic industries. As such, they both benefited from direct government assistance. The petrochemical industry got off the ground in the 1950s, when a number of chemical companies sought and obtained MITI's permission to move into petrochemicals. Government assistance came in the usual forms available at the time: favorable tax treatment for the licensing of foreign technology, foreign exchange allotments for the purchasing of equipment, indirect subsidies through tariff schedules, and the provision of land at nominal prices.[3] Through such assistance, the government naturally had some influence over developments within the industry, though interestingly enough, this influence did not lead to the industry's developing along "ideal" lines.

Rather, it quickly became too big. In the high growth period of the 1960s and early 1970s, no individual firm wanted to miss what each perceived to be highly profitable business opportunities. In spite of recommendations from MITI and from an advisory council designed to function as a clearinghouse for new investment in the industry as a whole, each petrochemical firm prepared its own plans for capacity expansion, and, backed by its investment group, each firm expanded capacity rapidly. Due to the structure of the industry, perhaps the best indicator of this expansion is ethylene production, which practically tripled between 1967 and 1972.[4]

[1] For example, in FY 1978-79, Nippon Kokkan "rid" itself of 1100 workers; 100 were transferred from shipbuilding to steel; 600 were retired early, and the remainder were sent to affiliated companies.

[2] This discussion does not try to address in detail the world economic conditions facing these industries. Nor does it address various additional legislative and other government measures aimed at derivative petrochemical industries, such as plastics and synthetic fibers.

[3] For further detail, see Johnson, *MITI and the Japanese Miracle*, op. cit., p. 236.

[4] The various petrochemical companies, known in Japanese as "kombinatō," typically built a string of plants grouped around an ethylene plant—in some cases with a nearby refinery, utility station, and port facility as well. These integrated complexes made economic sense at the time the complexes were first constructed, but when market conditions changed, it became extremely difficult to reduce capacity in such large scale facilities, even if they were no longer needed. For more in-depth descriptions of the structure of the petrochemical industry, as well as MITI-petrochemical company negotiations during this period, see Amelia Porges, "Import Cartels and Industrial Organizations in Japan," a memorandum prepared for the Office of the Special Representative for Trade Negotiations, Executive Office of the President, 1979; Japan Petroleum Association, *The Petroleum Industry of Japan*, Tokyo, 1980; and Terutomo Ozawa, "Government Control over Technology Acquisition and Firm's Entry into New Sectors: The Experience of Japan's Synthetic Fiber Industry," *Cambridge Journal of Economics*, Vol. IX, 1980, pp. 133-146.

The history of the refining industry is more complex, if only because it has always been more heavily regulated. In 1949, under direction from SCAP, the Japanese government began a program to promote the on-shore refining of imported crude oil—in contrast, say, to the alternative of buying refined products from abroad. Four international oil firms—Mobil, Shell, Esso (now Exxon), and Getty—formed joint ventures to develop refinery capacity; no wholly Japanese-owned refineries were permitted at that time. In 1952, with the end of the occupation, the Japanese government regained full control over industrial development policy. MITI then launched a program to develop so-called "independent," i.e., fully Japanese-owned oil refining and marketing companies. This would lessen what both business and government officials perceived as an undesirable dependence on foreign-owned firms, although the crude oil going into the domestic-owned refineries came almost entirely from foreign-owned sources. Gradually, three categories of oil companies emerged: (1) Japanese subsidiaries of Western-owned "majors" (these were mainly American-owned operations, and they undertook mainly, though not exclusively, marketing activities); (2) foreign-affiliated Japanese firms—i.e., firms with part Japanese and part foreign ownership (these companies were involved in both refining and marketing, with the foreign firm generally supplying the latest refining technology in exchange for a share of the profits and, indirectly, the privilege of operating their own marketing channel, supplied of course by the joint venture refinery); and (3) wholly Japanese-owned firms (these companies also engaged in both refining and marketing; some later developed independent exploration activities, though only very slowly).

All firms in the industry were closely regulated, but this arrangement was acceptable to the key participants. The Western-owned "majors," though forced to give up some percentage of market share to partly or wholly Japanese-owned firms, obtained a captive market for the share of production or distribution they did have, and a continuing foothold in one of the worlds' largest and fastest growing markets. Moreover, they supplied crude oil to Japanese-owned or foreign-affiliated firms. They were also able to concentrate on higher margin product lines, e.g., gasoline and distillates, rather than fuel oil, which greatly improved their profitability.[1] For their part, Japanese interests accepted this structure because, in the case of the affiliates, they had access to the best available technology, and in the case of both the affiliates and the independents, they (and thus the country as a whole) had access to as stable and cheap a supply of oil as any in the world. MITI was also satisfied; the structure entailed as little risk as could be imagined under the circumstances facing Japan at the time.

In 1962, MITI strengthened its direct control over the refining industry still further by introducing and obtaining approval of the Petroleum Industry Law (*Sekiyu Gyōhō*), which is still in force today. It has the following wide-ranging provisions, among others:

1. Direct MITI control over entry, capacity, and production. Any firm, foreign and domestic, has to get a MITI license to enter the refining business, and MITI must approve import levels of crude oil and any expansion of refining capacity.
2. Refineries are required to file annual production plans, and MITI is empowered to require changes in these plans.
3. MITI is empowered to set standard prices for oil and oil products.
4. MITI is required to prepare annual five-year rolling plans for oil imports, production levels, and refining capacity—which might be considered a consensus forecast. These serve as a kind of indicative plan or guide, though changes are made frequently.

The law also has various corollary effects. For example, through administrative guidance, under the umbrella authority of this law, MITI requires Japan's petrochemical firms to purchase domestically-produced naphtha at a standard price determined in negotiations between MITI and the industries concerned.[2] This is one of the most contentious issues in current policy debates.

The Petroleum Industry Law led to considerable fragmentation in the refining industry during the 1960s. Yoshi Tsurumi described this process as follows:

> As the oil glut continued into the second half of the 1960s, MITI's initial interest in keeping

[1] In some ways, this might be considered another example of the propensity of Western (especially American) firms to put a higher value on short-term profits, than, say, a long-term market position vis-a-vis ever-more-capable Japanese refining and marketing competitors. Alternatively, the "majors" might have sought a larger share of either the Japanese market itself (since MITI has direct control over the number of sales outlets a company can set up) or of their equity position in various joint ventures—and justified this stand on grounds that the refining technology they were making available to their Japanese partners was worth much more than was initially being offered. Yet any such second-guessing has to take account of the inability of even the most visionary executives to ignore short-term considerations. The point here is less to bemoan what U.S. firms failed to do in the past than to consider what alternative courses of action they might take in the future, based on a clearer understanding of the past.

[2] In recent years, this standard price has included a tax on domestically-produced naphtha of ¥2900 per kl.

down the number of refineries in Japan disappeared. Crude oil was readily available and MITI increasingly succumbed to political pressures from petrochemical firms, trading companies, public utilities, and other business interests that wanted to enter the wholesale stages—the success of which required uncertain investments in the building of distribution networks and the creation of brand new images to withstand the fierce competition with the existing thirteen firms—new entrants swarmed to the refining operations, for which plants could be purchased on a turnkey basis. The manufacturing expertise and technologies of oil refining operations were readily procured from independent foreign engineering firms. Foreign major oil firms seeking captive customers for their crude oil as well as supply sources for oil products for their sales subsidiaries in Japan, gladly extended technological aid to new oil refineries in Japan.[1]

Yet as late as 1973, MITI's goal of a strong market position for the wholly Japanese-owned companies, was still a long way off. Japanese-owned oil companies remained almost entirely limited to refining and marketing (at the wholesale and retail level); foreign-owned "majors" still supplied more than 80 percent of the country's crude oil.

Japan's dependence on foreign-owned sources of crude oil became all too clear with the *oiru shokku* ("oil shock"), the fourfold increase in the price of crude oil in 1973-74.[2] Not only were the price effects keenly felt throughout the economy (since, as described in Chapter III, the country's industrial development policies had favored investment in energy-intensive heavy industries), but security of supply was also thought to be seriously threatened. Concern over the latter led the Japanese government to announce a pro-Arab posture in the Arab-Israeli conflict in November 1973.[3]

From 1974 until 1979, the Japanese government paid considerable attention to the idea of introducing a new, comprehensive energy policy, but actually took measures in only a few areas, e.g., legislation was passed to increase oil stocks, and MITI-sponsored research projects were launched in search of alternative energy sources. The single most effective policy measure did not involve a special government program at all. Instead, market forces were harnessed in the simplest possible way: energy-consuming industries were encouraged to pass cost increases on to final consumers. In this way, Japanese energy prices rose with world prices, thereby automatically creating an incentive to conserve energy use and/or to switch to non-oil energy sources. However, once the initial shock of 1973-74 had been accounted for, world prices in real terms began a five-year slide (refer to the discussion in Chapter III). Because of the strong yen, the domestic price fell even further, some 50 percent from the initial peak. This had the effect of easing pressure to conserve energy use or to diversify energy sources—at least in the calculations of major energy users at the time the slide was occurring.[4] It was not until the "second oil shock" of 1979-80, when the Iranian revolution and subsequent Iraq-Iran war led to roughly a doubling in prices from an already high base, that the actual practices of energy users resulted in demonstrable change, leading in turn to significant movement toward the policy goals enunciated since the first

[1] Yoshi Tsurumi, "Japan," *Daedalus*, Vol. 104, No. 4, p. 117.

[2] Edith Penrose, Robert Stobaugh, and Zuhayr Mikdash argue that crude oil shortages were in fact recognizable by the late 1960s. MITI appeared not to respond to these changes in supply conditions because the majors had not passed these costs on to Japanese consumers. See "The Development of Crisis," "The Oil Companies in Crisis," and "The OPEC Process," in *Daedalus*, op. cit. In 1970, after the Tehran Agreement, price rises became imminent, but MITI still did not respond with any particular policy change. However, the wholly Japanese-owned refining companies did respond, banding together between 1971 and 1973 to try to win authorized price increases, meanwhile fixing price increases among themselves higher than those established on crude, doubtless in expectation of retroactive authorization from MITI. Foreign-affiliated refining companies followed suit, but did not participate in collusive price fixing. Later, in 1974, the Fair Trade Commission officially charged Japanese-owned refineries with price fixing and unauthorized production cartels. After six years of deliberations, a court judgment in 1980 ruled against the firms.

[3] The apparent hope was that this political tilt would lead to greater Arab oil exports to Japan, perhaps, since the foreign-owned "majors" were perceived as unreliable, through so-called Direct Deals between Arab exporters and wholly (or partially) Japanese-owned refiners or government-to-government deals. Despite initial claims in the Japanese press that the "majors" were directing oil supplies to their home countries, and the concurrent fear expressed by the Petroleum Association of Japan that crude oil supplies would be some 70 percent below normal, it soon became clear that the "majors" were, in fact, allocating oil more or less in proportion to previous patterns, or in effect fairly. Some reports claimed that the five American-owned "majors" actually supplied Japan more generously than either their home countries or Western Europe. See Stobaugh, op. cit., p. 193.

[4] Residential consumers, being less sophisticated about differences between nominal and real prices, typically did take conservation appeals to heart, but this represented no great change in traditional Japanese habits of frugality, and in any case, industrial use of energy is greater in Japan, as a percentage of total energy consumption, than any other OECD country, and much greater than residential use.

shock.[1] One account describes the immediate effects of the second oil shock as follows:

> As majors were cut off from their traditional sources of crude oil by Iran and other OPEC countries, they had to curtail sales to third parties in order to supply their own affiliate refineries. Since Japan had discouraged large refining efforts by the majors, many of the third parties cut off were independent Japanese refineries. Whereas the majors provided 70 percent of Japan's supplies in 1978, they had fallen to 56 percent in September 1979 and 44 percent at the beginning of 1980. . . . The result was a sense of intense vulnerability and panic on the part of Japanese firms who were willing to pay extreme spot market prices and to submit to extraordinary contract terms. . . . The 1979 Iran crises produced a renewed commitment to reducing oil dependence and devising a strategy to cope with the unavoidable security problems.[2]

Once again, however, the market confounded energy planners. The price increases of 1979-80 led to a considerable (and still continuing) decline in demand for oil worldwide. In Japan, oil consumption fell from 233,171,791 kl. to 194,799,491 kl. between 1979 and 1981. As a source of total energy, oil dropped from 71.1 percent of primary energy use in 1978-79 to 65 percent in the 1980-81, largely as a result of a major shift in energy use, from oil-based processes to coal or LNG, by several basic manufacturing industries, notably steel and cement.

These oil market shifts have had a profound effect on Japan's oil refining industry by creating extensive underutilization of refining capacity, which declined from 72.3 percent in 1979 to 59.5 percent in 1981. Far from being in a strong position in an energy-short world, Japanese refineries were—and still are—faced with an environment of low demand, high crude oil costs (made worse by a currently undervalued yen), weakened domestic prices, continuing overcapacity, and, interestingly enough, persistent MITI resistance to the granting of relief through a system of industry-wide floor prices such as imposed in 1975. This refusal to sanction floor prices implies that consumer pressures to keep prices low in areas such as gasoline, kerosene, and jet fuel have outweighed producer pressures for price increases.

MITI has tried in other ways to help the refining industry survive the adjustments forced upon it by changed market conditions. In 1981, MITI created an artifical tightening of the domestic market through mandatory refinery production cuts.[3] Meanwhile, the Petroleum Subcommittee of the Industrial Structure Council argued in December 1981 for a major voluntary program aimed at further scrapping of excess capacity.[4] The Subcommittee stressed the need to consolidate the current fragmented system in which numerous small-scale companies compete intensively—and unprofitably.

As with the auto industry 15 years ago, MITI began to promote mergers into so-called "leading companies," in this case three, centered on Idemitsu Kosan, Kyodo Oil, and Maruzen/Daikyo; Maruzen and Daikyo have since announced a refining tie-up. The government has announced a program of extending soft loans from the JDB to all wholly Japanese-owned oil companies as of April 1982.[5] Other proposals have been floated. The Petroleum Subcommittee has urged partial relief from corporate taxes. Since a major source of many companies' current deficits have come from foreign exchange losses, the Subcommittee also advocated a partial shift from dollar- to yen-dominated import contracts, and an increase in the amount of dollar-based forward exchange contracts. Meanwhile, the refineries have asked MITI to authorize the creation of a special reserve fund, which would set aside a certain amount

---

[1] MITI bureaucrats continually produce supply-and-demand projections, which, coupled with MITI's vaunted reputation, sometimes create an impression of omniscience. In fact, these projections have tended to be no more than ballpark estimates at best, and have typically been overtaken by events. For example, in 1970 the government set a production target for nuclear power of 60 million kilowatts in place by 1985. In 1976, i.e., after the oil shock and thus at a time when energy policy was nominally trying to promote diversification, this target was scaled down to 49 million kilowatts. It was scaled down again in 1977 to 30 million kilowatts, and reduced further to 26 million kilowatts in 1980. This same trend was evident in most OECD countries. Clearly, Japanese planners, even in MITI, make mistakes just like other bureaucrats.

[2] Joseph S. Nye, "Energy and U.S.-Japan Relations," *Appendix to the Report of the Japan-United States Economic Relations Group*, Tokyo and Washington, April 1981, p. 81.

[3] On the other hand, MITI has also induced some refineries to continue purchasing crude oil in excess of current demand in order to implement government stockpile targets. MITI's policies, when firmed up to the point of suggesting that companies take specific, concrete steps to fulfill policy objectives, often have unintended effects later on—and effects that leave the companies in the lurch. For example, when oil prices began to decline dramatically 1981, those refineries that had earlier been encouraged by MITI to enter into long-term Direct Deal supply contracts were especially hard-hit.

[4] Earlier deliberations had indicated that cuts of 10-20 percent were required. By late 1981, 22 of Japan's 86 topping facilities had already been shut down, but excess capacity still remained.

[5] Previously, only members of the so-called "Kyodo Group," a loose marketing/refining consortium formed at government behest in 1965, were eligible for loans for capital construction.

of foreign exchange gains made one year as protection against losses in a subsequent year.[1]

2. Current Conditions and Conflicts

The recent debate on naphtha prices is an excellent example of the kinds of difficulties that MITI has already encountered—and in our view will increasingly encounter—in trying to control a market economy. For one thing, MITI has found it next to impossible to provide sufficient assistance to both the refining and the petrochemical industries, while also trying to formulate an overall energy policy and cater to the interests of a variety of consumers. Worse yet, as price discrepancies between domestically-produced and foreign-produced naphtha widen, the problem intensifies even as MITI seeks to alleviate it.

The specific reasons for the recent "naphtha war" are clearly visible in market conditions. Since mid-1976, on average, the international price of naphtha has been lower than the domestic Japanese price.[2] Both the Petroleum Subcommittee of the Industrial Structure Council and the Petroleum Industry Association have gone on record as saying they expect some price discrepancies to remain for the foreseeable future. Recent Subcommittee estimates of anticipated price discrepancies between domestically-produced and foreign-produced ethylene, a major chemical feedstock derived from naphtha, are shown in Figure VII-4.[3] Price discrepancies have already been reflected in import levels: naphtha imports, although strictly regulated by MITI, increased from roughly 30 percent of total consumption in fiscal 1979 to 45 percent in 1981.

Since 1978, a number of petrochemical companies that are not tied in directly with refineries (so-called chemical-line firms) have lobbied heavily for freer importation of lower-priced foreign-source naphtha.[4] These firms formed a special company, the Petrochemical Feedstock Import Company (PFIC), in September 1978 to handle direct importing. The initial plan was to import relatively small amounts of naphtha directly—approximately 250,000 kl in the first year, as against the usual 10 million kl imported through the refining companies—and gradually to increase the volume. However, MITI interpreted the move as a direct assault to its authority and to the whole framework of the Petroleum Industry Law, perhaps stimulating other consuming groups also to seek direct imports.[5] After intense negotiations between MITI's Agency for Natural Resources and Energy (ANRE) and PFIC in 1979, the ANRE finally permitted the consortium to serve as an importing agent for member firms, while still requiring that the imports themselves be channelled through domestic refineries. Thus, while MITI was forced to give some ground to the petrochemical companies, its basic policy framework, centering around the Petroleum Industry Law, remained intact.

This compromise proved short-lived. The petrochemical companies continued to argue that the high cost of domestically-produced naphtha was the single most important factor undermining the competitiveness of the Japanese petrochemical industry. Since 1980, the companies have sought the following changes:

1. Removal of the petroleum tax on domestically-produced naphtha.
2. Reductions in mandatory naphtha stockpiles.
3. Total liberalization of naphtha imports.
4. Lowering of petroleum product prices.[6]

MITI's initial response was to initiate various study groups and appeal to the industry for patience, but by late 1981, an intensification of the conflict could no longer be avoided. In January 1982, the ANRE announced that the petrochemical companies' demands could not be met in full because free importation of naphtha would undermine the previously established—and in MITI's view, delicately balanced—system for importing oil and oil products, and would probably lead to supply uncertainty.

---

[1] For an excellent summary of recent trends, from which much of this material is drawn, see Jeffrey Segal, "Losses Force Downstream Shape-up," *Petroleum Economist*, Vol. XLIX, No. 2, February 1982, pp. 45-48.

[2] For example, in 1977, the domestic naphtha price was ¥28,300 (per kl); the import price ¥25,000. Comparable prices in 1981 were ¥57,530 and ¥53,660 respectively. See Hiroya Ueno, "Materials Industry in Recession," *Economic Eye*, Keizai Kōhō Sentā [Japan Institute for Social and Economic Affairs], March 1982, pp. 13-17, and Nikan Kagaku Keizai [Chemical Economic Daily], No. 5488, January 8, 1982.

[3] Demand and supply conditions in ethylene production are but one indication, albeit a good one, of the depressed state of the petrochemical industry in Japan. Ethylene is used in the production of a number of other petrochemicals, and is perhaps the single most important feedstock derived from naphtha. Capacity utilization for fiscal year 1981, for example, was only 67.5 percent, and production declined 24 percent between 1979 and 1981. See Japan Petroleum Associaton, op. cit., passim, and Sekiyu kagaku kōgyō kyōkai [Japan Petrochemical Industry Association], *Sekiyu kagaku kōgyō no gendai to mondaiten* [Current State and Problems in the Petrochemical Industry], Tokyo, 1982.

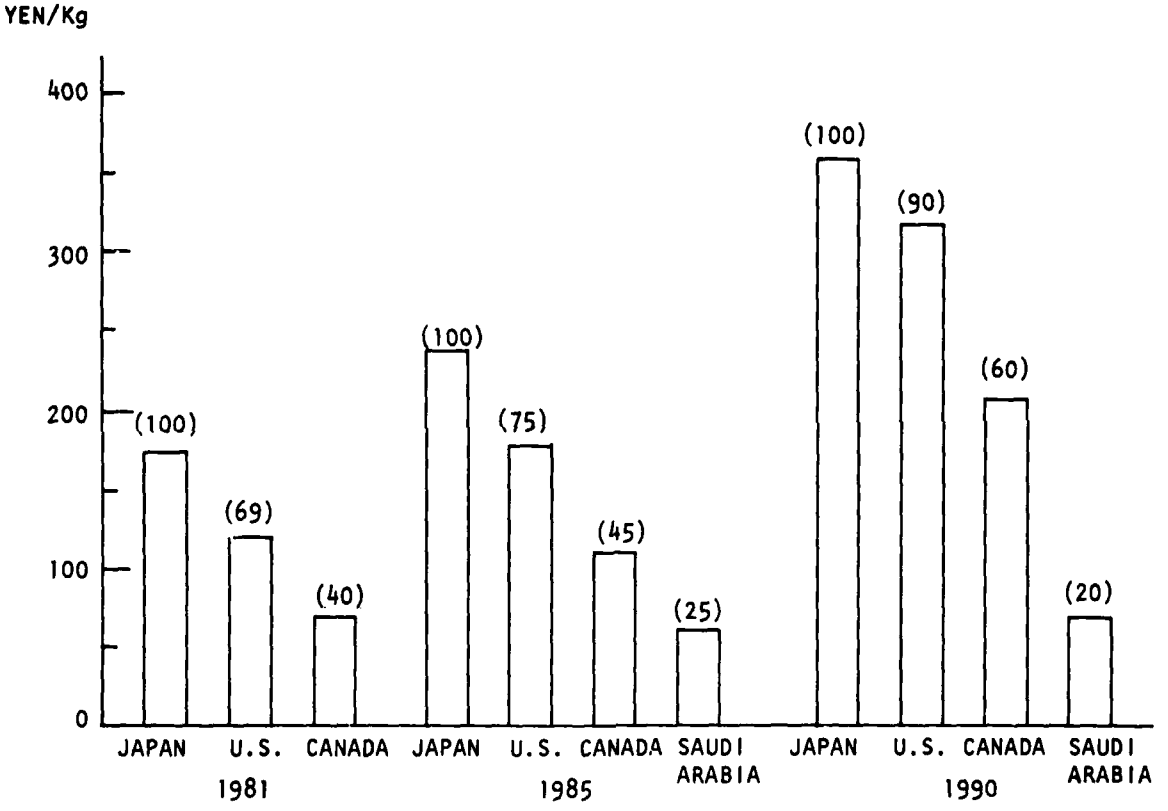
[4] These firms include Mitsui Petrochemical, Mitsubishi Petrochemical, Mitsubishi Chemical, Sumitomo Chemical, Showa Petrochemical, Osaka Petrochemical, and Sanyo Petrochemical.

[5] The other sectors that might be particularly interested in direct imports include airline companies, which purchase jet fuel, fishing cooperatives, which purchase gasoline and diesel fuel, and consumer cooperatives, which purchase kerosene.

[6] *Nikkan Kogyo Shimbun*, January 29 and February 4, 1982, p. 1 and p. 1, respectively.

Figure VII-4

ETHYLENE PRICE FORECAST



SOURCE: "DIRECTIONS IN THE PETROCHEMICAL INDUSTRY IN THE 1980s: PROGRESS REPORT," INDUSTRIAL STRUCTURE COUNCIL, CHEMICAL INDUSTRY SUBCOMMITTEE, DECEMBER 2, 1980.

FIGURES IN () ARE PRICE COMPARISONS USING JAPANESE PRICES AS 100.

There are other considerations that contributed to the ANRE's reluctance to accede to the petrochemical companies' requests. The ANRE has an obvious interest in maintaining domestic naphtha taxes because these are an important revenue source for MITI's energy research and development programs. Moreover, consumer groups, who have traditionally borne a disproportionate burden of price increases in kerosene and home heating oil in order to limit previous increases in naphtha prices, would oppose any liberalization of naphtha imports that would lead in turn to further price increases in these products. Most importantly, free importation of naphtha might, as indicated earlier, set a precedent leading toward the dissolution of MITI's control over oil imports and energy policy generally.

Needless to say, the petroleum refineries oppose the petrochemical industry's demands because any liberalization of naphtha imports would reduce the quantity of crude oil the refineries would need to process, and thus intensify their capacity utilization problems. They also fear reprisals or penalties from the oil producing countries.

In early April 1982, under further pressure from the petrochemical companies, the ANRE came up with several proposals that are widely expected to settle the dispute, at least temporarily. It continued to reject demands for free importation of naphtha, exemption from the petroleum tax for domestically-produced naphtha, at least for FY 1982, and removal of mandatory stockpile requirements for FY1982. However, the ANRE did concede that the scope of the PFIC's activities could be expanded, that direct imports of naphtha could increase to 50 percent of total demand, and that stockpile requirements and the petroleum tax would be reassessed in FY1983. Most importantly, the ANRE came up with a new method of determining prices that would reduce domestic naphtha prices to bring them more in line with world prices. This formula directly links the price of domestically-produced naphtha to world prices; by effectively lowering the price of Japanese naphtha and thus reducing the price gap, this new formula represents a major departure from past MITI policy and a significant gain for the petrochemical industry.

Still, it is unlikely that this one move can rectify the current overcapacity and lead to a general revitalization of the petrochemical industry. MITI has been recommending other measures—notably, a reduction in the number of ethylene centers from 15 to 7 or 8. Management and labor seem to agree on the idea in principle, but as yet no company has agreed to close down a facility. Management and labor both are still bargaining for better terms to mitigate the capital losses and unemployment effects stemming from plant closings. It now appears that this bargaining will lead MITI to designate petrochemicals as a depressed industry under a revised and expanded Depressed Industries Law, thereby making it eligible for the kind of wide-ranging assistance described earlier in the chapter.[1]

Meanwhile, the refining industry has its own problems. If forced to sell domestically-produced naphtha at world prices, while their actual production costs remain at current levels or increase, the profitability of the industry would obviously worsen. If current retrenchment efforts fail to restore profitability, one can anticipate further requests for government assistance. There is one potential bright spot on the horizon for both the petrochemical and the refining industries. If U.S. deregulation of natural gas proceeds on schedule (or is accelerated), the price of this competing feedstock should be driven up, making Japanese naphtha costs less of a burden for Japanese petrochemical companies, thereby making both the refining and the petrochemical industries more competitive with producers in other, more energy-rich countries,[2] especially the U.S., and to a lesser degree, Canada. Until U.S. deregulation is complete, however, Japanese industries will remain burdened by price differentials.

It is important to recognize that the new naphtha policy hardly eliminates MITI's influence over either the refining or the petrochemical industry. Oil refineries are still obligated to submit production plans for MITI's approval. MITI continues, through administrative guidance, to require petrochemical companies to purchase their naphtha through domestic refineries. Import ceilings remain in place. MITI continues to coordinate Japan's overall energy policy. Finally, should either of these industries seek greater direct government financial assistance under a new Depressed Industries Law, they would be obligated to negotiate nearly all aspects of their business operations with MITI.[3]

3. Summary and Prospects

Japan's petroleum refining and petrochemical industries have both benefited from direct government assistance, particularly in the early postwar years of industrial expansion. Both were earmarked as "strategic industries." Perhaps for this reason, both expanded too much and later found themselves saddled

[1] If and when this happens, the resulting actions may have important implications for U.S. policymakers and the U.S. petrochemical industry. These implications are discussed below in the concluding section.

[2] See Figure VII-4.

[3] At the moment, the petrochemical industry remains divided about how much government involvement and support is preferable. For example, in June 1982, the president of Mitsubishi Petrochemical was quoted as saying, "We [ethylene companies] want to take the initiative with regard to capacity reductions and scale-downs . . . When the government starts telling us what to do, the adjustment process is more likely to get clogged." *Nihon Keizai Shimbun*, June 14, 1982.

with considerable over-capacity, with the government unable either to curtail the overinvestment as it was taking place, or worse yet, to introduce effective remedial measures. Indeed, critics of the whole concept of industrial policy could well argue that Japanese government decisions in the early 1950s to promote an on-shore refining capability can be credited—or blamed—with fostering a highly fragmented industry that is now plagued by overcapacity.[1]

Indeed, the strict administrative guidance and price controls built into the Petroleum Industry Law have failed to work—at least in the sense that they have been unable to maintain competitive refining and petrochemical industries in the face of adverse market conditions. The costs of such strict regulation are now more obvious than in earlier stages of Japan's economic development—in many ways painfully obvious. Artificial pricing of naphtha has come to hurt the petrochemical industry, even as it has helped support the refining industry. Now, with some deregulation of naphtha prices, the refining industry will be harder hit. Neither industry is in good shape, however, and MITI finds itself in the peculiar position of being unable to resolve the problems. In addition, having forced partial MITI acquiescence on the naphtha price issue, the petrochemical companies may have opened the door to similar moves by other interest groups unwilling to assume the costs of artifical pricing that goes against their particular interests. In the short term, MITI can be expected to continue trying to "plug the holes in the dike," as it tries to mollify various competing interest groups. In the long term, if market conditions continue to generate sharp price discrepancies between domestically-produced and foreign-produced goods, more and more lower-priced imports will come into the Japanese market whether MITI likes it or not.

D. Aluminum and Nonferrous Metals

Developments in the aluminum industry resemble those in the petrochemical and petroleum refining industries, except that, perhaps unlike the latter, the aluminum industry appears to have undergone a rapid and irrevocable decline. Since the basic conditions facing the Japanese aluminum industry are by now reasonably well-known, we do not go into great detail on the history itself. We focus instead on the key lessons of the aluminum industry, and also try to show how these lessons will almost certainly be applicable to other nonferrous metals that have yet to suffer the structural change that aluminum has. Basic demand and supply data for these other metals suggest an emerging pattern that closely resembles that already seen in aluminum.

Industry growth rates for various base metals compared to GNP growth (computed on the basis of three year moving averages from 1952-1979) are shown in Figure VII-5. Clearly, growth in metals production exceeded growth in GNP during earlier periods of Japanese economic development—as is true for any country building a heavy industrial base. However, and more importantly for this discussion, after the remarkable growth in earlier years, metals production has now leveled off or, in some cases, actually declined.

1. Aluminum

The decline in the competitiveness of the aluminum industry has occurred largely as a result of electricity costs in Japan, which are considerably higher than those in most other advanced industrial countries (see Table VII-1). Aluminum is so extraordinarily energy-intensive, particularly in the refining stage, that it has been described as "congealed electricity." Estimates of the power costs per ton of aluminum produced in Japan range from ¥230,000 to ¥250,000; comparable costs in the United States are ¥60,000 to ¥70,000. According to the Aluminum Federation of Japan, as of March 1982, the domestic selling price of aluminum had risen to about ¥500,000 per ton, while the import price of U.S. aluminum was at least ¥200,000, or roughly 40 percent, lower. The impact of these higher energy costs has forced Japanese companies to close down some smelter capacity entirely, and to initiate steps to develop new facilities where energy costs are

TABLE VII-1
INTERNATIONAL COMPARISON OF AVERAGE ELECTRICITY COSTS FOR ALUMINUM REFINING
(UNIT YEN PER KWH)

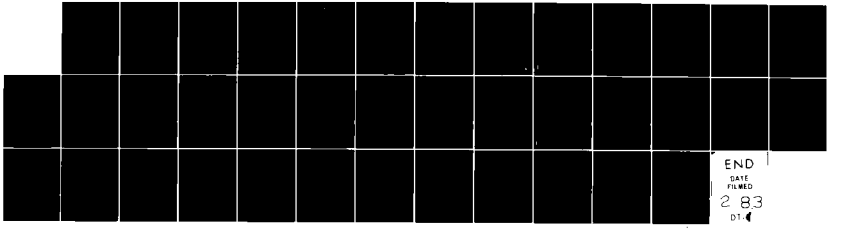
Japan	15.5 ~ 17.0
West Germany	5.5 ~ 8.0
Canada	1.0 ~ 1.5
Australia	3.0 ~ 5.0
United States	3.5 ~ 6.0

SOURCE: The Long-Term Credit Bank of Japan Industrial Research Department, Research Division, "Arumi Sangyō No Yukue" [The Future of the Aluminum Industry], No. 57-9, 1982.

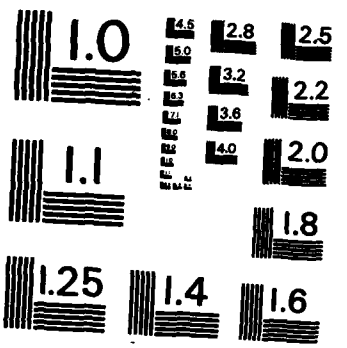
[1] In earlier years, by favoring wholly Japanese-owned refineries over foreign-affiliated firms, MITI prevented the latter from expanding capacity as much as they were requesting at the time. Ironically, these firms are now in a stronger position precisely because they are not as burdened with overcapacity.

AD-A123 349 JAPANESE INDUSTRIAL DEVELOPMENT POLICIES IN THE 1980'S: IMPLICATIONS FOR..(U) HUDSON INST INC CROTON-ON-HUDSON NY J W WHEELER ET AL. OCT 82 HI-3470-RR FAR-398-GP 3/3

UNCLASSIFIED F/G 5/3 NL



END
DATE FILMED
2 83
DTIC

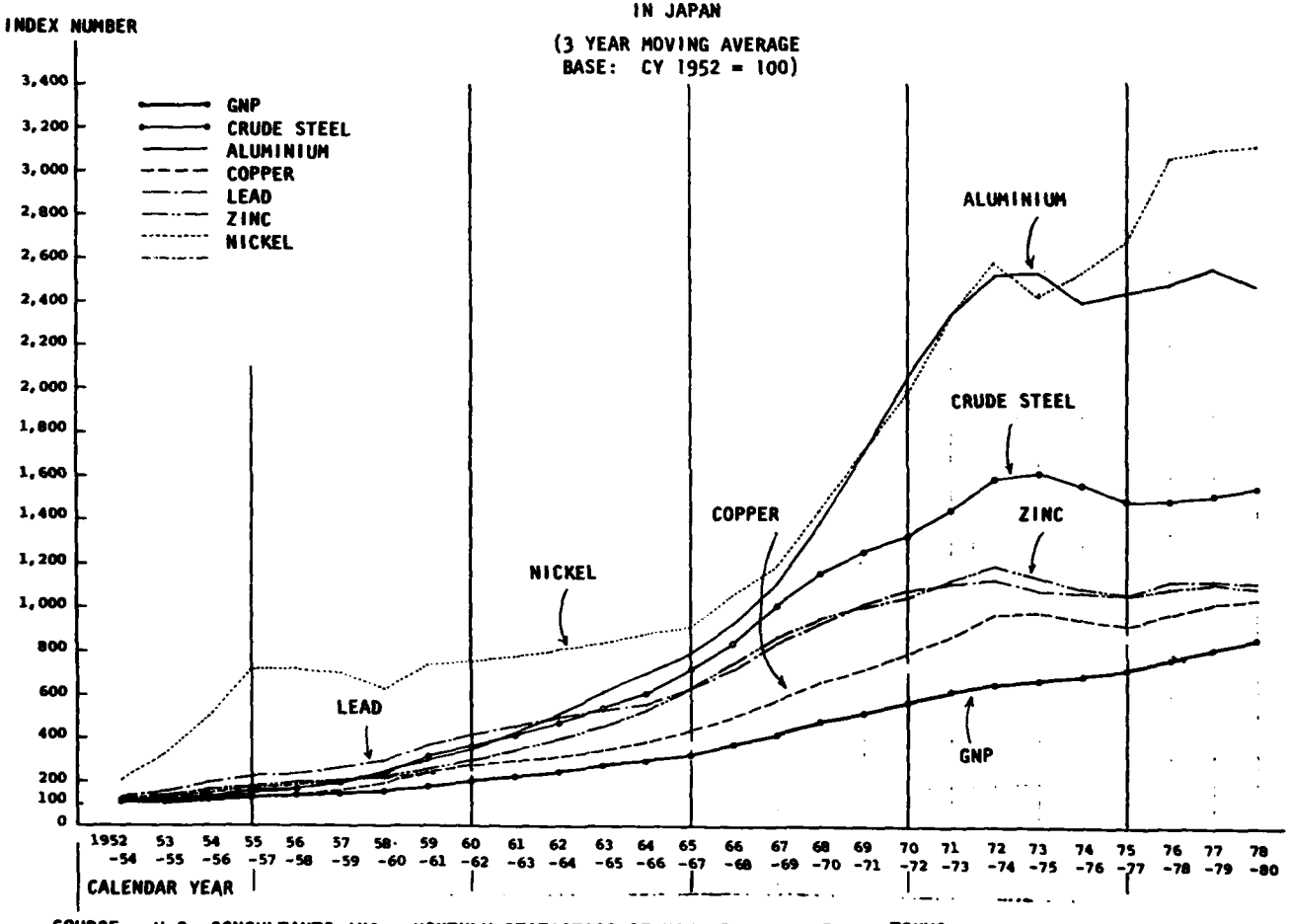


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

Figure VII-5

GROWTH OF PRODUCTION OF NON-FERROUS METALS AND CRUDE STEEL
COMPARED WITH GROWTH OF GROSS NATIONAL PRODUCT (GNP)
IN JAPAN

(3 YEAR MOVING AVERAGE
BASE: CY 1952 = 100)



SOURCE: U.S. CONSULTANTS, INC., MONTHLY STATISTICS OF NON-FERROUS METALS, TOKYO.

TABLE VII-2
DEMAND/SUPPLY CONDITIONS FOR ALUMINUM: 1976-1981

UNIT: METRIC TON
INDEX BASE: 1976=100

	Production/Index		Imports/Index		Imports as a % of production
1976	919,425	100.0	375,538	100.0	40.8
1977	1,188,197	129.2	466,696	124.6	39.3
1978	1,057,710	115.0	674,050	180.0	63.7
1979	1,101,409	119.9	601,797	160.7	54.6
1980	1,091,477	118.7	736,596	196.7	67.5
1981	770,602	83.8	924,712	246.2	120.0

	Exports/Index		Domestic consumption/Index	
1976	52,024	100.0	1,600,981	100.0
1977	86,924	167.1	1,417,625	88.5
1978	45,438	87.3	1,654,972	103.4
1979	1,764	3.4	1,802,024	112.6
1980	4,067	7.8	1,636,786	102.2
1981	8,319	16.0	n.a.	

SOURCE: Ministry of International Trade and Industry and Ministry of Finance.

lower. In fact, only those refineries that use electricity generated from coal or hydropower remain price competitive. Moreover, according to a recent analysis by The Long-Term Credit Bank, the majority of Japan's aluminum producers are expected to stop producing aluminum domestically altogether and to shift instead to importing aluminum, or co-producing aluminum outside of Japan.[1]

Basic demand and supply conditions from 1976 through 1981 indicate the magnitude of the industry's decline (Table VII-2). Production declined 16.2 percent (from 919,425 mt to 770,602 mt). Meanwhile, consumption increased by only 2.2 percent (from 1,600,981 mt to 1,636,786 mt in 1980).[2] Imports more than doubled, increasing by 146.2 percent (from 374,538 mt to 924,716 mt). Imports as a percent of domestic production have increased from 41 percent in 1976 to 120 percent in 1981. Exports have all but disappeared. As yet another indication of the rapidity and severity of the decline of this industry, domestic production of aluminum on a monthly basis between January and December 1981 fell by an almost unbelievable 40 percent (from 80,032 mt to 47,879 mt). The virtual doubling of imports as a percent of production from 1980 to 1981, to a level at which imports are now greater than domestic production, is arguably the first case in Japan's postwar history in which a basic manufacturing industry has been overtaken by imports—and in our view a sign of future trends in other industries.

By any analysis, the Japanese aluminum industry is structurally declining. Indeed, it is now widely recognized in government and industry circles that the current problems of excess capacity, high production costs, and increased competition from imports cannot be solved by an increase in aggregate demand; some degree of permanent decline in the domestic industry is more or less accepted. Yet, here again, as in shipbuilding, there is little evidence to suggest that the government anticipated the degree of trouble the industry would face.[3] In 1975, an Industrial Structure Council report on the aluminum industry forecast that total capacity in 1980 would equal 1,900,000 mt, and imports 600,000 tons, or 32 percent. In 1978, the Council revised this estimate to 1,141,000 mt of capacity for 1985 and 1,250,000 mt of imports, which again proved optimistic. The Council, with MITI backing, came up with yet another stabilization plan in late 1981, based on expected domestic capacity of roughly 700,000 mt for 1985 and expected imports of 1,500,000 mt. By April 1982, this plan too, had become moot, as MITI now expects imports for fiscal 1982 (ending April 1983) to surpass 1,000,000 mt and domestic capacity to be no greater than 700,000 mt.

In 1978, the Industrial Structure Council did recognize that some degree of trouble was in the offing,

[1]See The Long-Term Credit Bank of Japan, Industrial Research Department, Research Division, "Arumi sangyō no yukue" [The Future of the Aluminum Industry], No. 57-9, 1982.

[2]1981 data are not available for consumption.

[3]There may have been such recognition among some MITI and industry officials privately, but there is little evidence of efforts to make such thoughts known publicly, or to initiate industry adjustment before the market itself necessitated such adjustment.

largely as a result of energy price increases. The Council argued—in some detail—that aluminum refining could recover its competitiveness in five years if the industry were to undertake certain reforms, such as reducing electricity costs, improving labor productivity, and scrapping some excess capacity. To achieve this restructuring, the Council recommended that the industry be designated as structurally depressed and be included under the Depressed Industries Law—which it was. Yet, with hindsight it is now clear that the industry itself never had the capability to reduce costs to world competitive levels.

In spite of—or quite apart from—such deliberations, the government, the producers, the unions, and the electric power utilities have yet to reach formal agreement on various relief measures, e.g., electricity prices, capacity reductions, and allowable import rates. Some firms preferred reversible, short-term measures, such as a production cartel (e.g., a capacity freeze), rather than permanent capacity reductions. MITI, on the other hand, has pressed since 1978 for at least a one-third reduction of capacity. MITI has also advanced a number of other proposals that have been rejected by the producers. For example, one idea offered in 1978 would have combined the then-existing producers into two large groups, with the crucial decisions on capacity reductions to be made at the group level. This was vehemently opposed by most producers. Meanwhile, some producers have advocated various measures unacceptable to MITI, such as an electricity subsidy large enough to permit the continued supply of competitively-priced aluminum to the domestic market. MITI rejected this on grounds that such blatant protectionism would be politically unacceptable, both inside and outside Japan, and more importantly, that it would not solve the industry's basic problems.

Another plan, proposed in 1981 by the aluminum producers and MITI, but opposed by other parts of the Japanese government (notably the MOF) and the U.S. government, called for removal of a 9 percent tariff on aluminum imports entering the country under long-term contracts, while keeping the tariff on imports purchased in the spot market (spot market prices are below those on existing long-term contracts). Concurrently, Japanese producers were to contribute an amount equal to the tariff savings to an industry association, with these contributions to be redirected towards rationalization of the industry. The MOF rejected this plan because it would have resulted in significant revenue losses to the central government—estimated at ¥90 million over the next three years. The U.S. objected to the plan for three reasons: (1) the price differential between long-term and spot prices was estimated to be more than the 9 percent tariff, which meant that the tariff cut could not be expected to reduce significantly the surging demand for imports of low-priced spot market aluminum; (2) the plan would amount to an indirect (and thus less "transparent") subsidy to Japanese aluminum producers via the industry association, which is probably unacceptable under GATT; and (3) discrimination by the length of a contract would set an entirely new protectionist precedent.[1]

To date, as noted above, an all-encompassing stabilization plan has yet to be formulated in a way that is acceptable to all concerned parties. However, as of December 1981, a temporary tariff plan was approved by MITI and MOF. It would allow imports to be exempt from taxation for a temporary period of three years starting in April 1982— regardless of the means of import (i.e., whether through long term contracts or spot market purchases), with an import ceiling of 400,000 mt per year eligible for full exemption. In general, and in spite of various temporary measures taken to insulate the domestic market, the Japanese aluminum industry continues to be buffeted by world market forces, and imports continue to increase almost regardless of any desire to the contrary by producers or MITI.[2]

2. Nonferrous Metals

Other nonferrous metals, though they have yet to feel the full impact of adverse energy costs, are nonetheless already at a serious competitive disadvantage. To date, no particular government action has been taken to protect these industries from changes in market conditions, but if current market trends continue—and there is strong evidence to suggest that they will—some government actions to aid domestic producers will almost certainly be considered. Whether, and how, such action would be taken, and at what point, are more interesting, but in any precise sense, unanswerable questions.

Although conditions vary from metal to metal, energy costs are the single most important reason for a loss of competitiveness in Japanese base metal production. Table VII-3, compiled from data gathered from a survey of Japanese metal production

[1]Japanese government officials and producers privately indicated great surprise over the U.S. government response to the proposed tariff reduction plan. From their perspective, given that the 9 percent tariff removal would prove advantageous to U.S. producers who are supplying aluminum under existing long-term contracts, they could not understand why the U.S. government would oppose this measure. Arguably, this represents a genuine difference of perception between U.S. and Japanese officials in their respective views of U.S. interests. However, there is some evidence to suggest that the Japanese producers themselves suggested this plan, presumably in the expectation that they would benefit, if only marginally, by having Association control over the additional revenue.

[2]Mitsui recently announced a new production process that presumably will dramatically reduce the electricity quotient in aluminum refining. By most accounts this technology will not be available commercially for at least four years; a ten year time frame may be more realistic.

TABLE VII-3
POWER CONSUMPTION AND POWER COSTS FOR MAJOR JAPANESE METALS

Metal	(A) Power consumed per unit (kwh/ton) February 1980	(B) Total power cost (in ¥) per ton of product after average 50.8% increase in February 1980	(C) Power cost (in ¥) increase per ton of product due to 50.8 percent increase in February 1980
Ferro-nickel	25,000	377,000	127,000
Aluminum	15,000	226,000	76,200
Ferro-silicon	9,700	146,276	49,276
Nickel	5,700	85,956	28,956
Ferro-chrome	5,000	75,400	25,400
Zinc	4,500[1]	67,860	22,860
Copper	1,700	25,636	8,636
Lead	800	12,064	4,064
Electric furnace (steel)	600	9,048	3,048

[1]This refers to electrolytic zinc processing.

SOURCE FOR COLUMN A: *Tōyō Keizai*, Vol. 9, No. 4202, February 9, 1980; Column B and C derived from A.

by the business magazine *Tōyō Keizai*, shows the effect of high energy quotients in production on the total power cost per ton of product. There is almost no way for Japanese producers to circumvent these constraints, and for the moment at least, Japanese law stipulates that utility prices must be linked to energy costs to maintain the overall profitability of the utility industry.[1] Although we do not expect energy prices to rise as much in the 1980s as they did in the 1970s (indeed, they may continue to fall in real terms), the absolute level of energy costs in Japan relative to costs in other countries is already high enough to preclude construction of competitive new production capacity in most base metals. Not surprisingly, imports of these metals have grown relative to Japanese consumption. Recent demand and supply conditions for these metals are described below.

a. Copper

As seen in Table VII-4, from 1976 to 1981, consumption of copper metal has varied somewhat above domestic production, with the gap growing on average. Copper production increased 21.5 percent (from 864,361 mt to 1,050,120 mt) while consumption increased 28.9 percent (from 1,050,287 mt to 1,353.966 mt). By and large, imports have increased accordingly.[2] This trend is likely to continue. No copper smelters or refineries have been built in Japan since 1974. In the aftermath of the 1973-74 increase in oil prices, capacity utilization fell precipitously (from 81.5 percent in 1974 to 66.9 percent in 1975), and only returned to 80 percent in 1980. While Japanese metal producers typically expanded production in the pre-1973 period when capacity utilization exceeded 80 percent, they have since been willing to expand production facilities only when capacity utilization nears or exceeds 90 percent; capacity utilization now stands at 84 percent. For copper metal, the 90 percent level is likely to be some years away at best.

b. Nickel and Ferro-nickel

Production processes for nickel are sufficiently energy-intensive to make the cost differential between Japanese-produced nickel and imported nickel higher than the comparable differential for most

[1]In 1980, when MITI permitted an average 50.8 percent increase for electricity prices, it tightened this link still further with a new administrative provision providing for consideration of further price increases annually, rather than every two years, as had previously been the case.

[2]The fall-off in metal imports in 1980 can be attributed to the unusually large increase in exports. To fill these orders, Japanese producers increased metal output, which had the corollary effect of dampening demand for imports. Imports will presumably continue to rise through the 1980s and beyond. In other words, the fall-off in imports in 1980 will probably prove temporary, as 1981 figures suggest. Exports of copper metal in 1980 were exceptionally high mainly because of anticipated strikes and production shutdowns in the U.S. Accordingly, U.S. copper consumers bought heavily from Japanese producers. With the settlement of those strikes, a return to previous patterns occurred.

TABLE VII-4
DEMAND/SUPPLY CONDITIONS FOR COPPER METAL: 1976-1981

UNIT: METRIC TON
INDEX BASE: CY 1976=100

	Production/Index		Imports/Index		Imports as a % of production
1976	864,351	100.0	200,515	100.0	23%
1977	933,703	108.0	205,174	102.3	22
1978	959,070	111.0	258,104	128.7	27
1979	983,700	113.8	305,408	152.3	31
1980	1,014,292	117.3	227,660	113.5	22
1981	1,050,120	121.5	241,146	120.3	23

	Exports/Index		Domestic consumption/Index	
1976	28,611	100.0	1,050,287	100.0
1977	43,487	152.0	1,182,631	112.6
1978	50,853	177.7	1,241,438	118.2
1979	46,934	164.0	1,330,136	126.6
1980	205,728	719.1	1,325,466	126.2
1981	38,301	133.9	1,353,966	128.9

SOURCE: Ministry of International Trade and Industry and Ministry of Finance.

other metals considered here. Thus, as seen in Table VII-5, nickel imports to Japan rose sharply in 1979, even though imports were on average already higher, as a percentage of total consumption, than for many other metals. For ferro-nickel, energy costs as a percentage of total production costs are even higher than for nickel (see Table VII-3), though the volume of imports to date has been a much lower percentage of total consumption (TableVII-6).

Nickel use is closely associated with steel production. Japanese steel producers attribute part of their standing as the world's most efficient steel industry to their ability to change the quality and quantity of their nickel and ferro-nickel inputs on a short-term basis. As seen in Table VII-7, nickel costs in Japan, as a percent of the total cost of steel production, were 14.5 percent higher on average than they were in the U.S. during 1974-76. Still, the overall cost of steel in the U.S. was higher than in Japan, so much so that Japanese figures were used by the Commerce Department as the base for computing trigger price levels for steel imports. There is sufficient utility in locating nickel refineries near their customers that some high-cost nickel and ferro-nickel production is likely to be maintained in Japan indefinitely. In effect, any loss would be subsidized by the steel industry, which currently can not only afford to carry this burden, but which also has strong influence over nickel production, through equity positions that some steel firms hold in various nickel suppliers. (See Figure VII-6 for a schematic description of the relationship between ferro-nickel producers and steel industry consumers.) Nonetheless, nickel and ferro-nickel imports will probably continue to increase, in lieu of increases in productive capacity.

c. Zinc

Table VII-8 summarizes supply and demand for zinc metal from 1976 through 1981. Domestic production through this five-year period was erratic but declining on average. At the end of 1981, production was 9.7 percent below the level for 1976 (declining from 742,069 mt to 670,162 mt). Domestic consumption, similarly fluctuating, also has declined slightly (2.5 percent, from 698,608 mt to 687,917 mt). Imports increased 8.7 percent, from 28,002 mt to 30,439 mt). Exports, on the other hand, declined 32.5 percent (from 75,952 mt to 51,278 mt). Imports increased from 3.8 percent of domestic production to 4.5 percent. Even if demand were to increase more strongly in the 1980s than it did in the 1976-1980 period, the trends of recent years suggest that Japanese zinc production will almost certainly not increase proportionately.

If zinc production is to remain viable in Japan, at least some of the more energy-intensive processes will have to be phased out (especially if energy prices increase still further), and other processes will have to be phased in.[1] In general, the smaller plants, particularly those which are not co-producing other metals such as lead, will be shut down ahead of the larger plants.

[1]There are considerable differences in energy use among various production processes and this will probably lead to the termination of less energy efficient plants. For example, electrolytic refining processes require about 4,500 kilowatts of electricity per ton of product, while electrothermal processes use only about 3,300 kilowatts per ton. A distillation method, such as the typical electrothermal process or the ISP (imperial smelter process), uses less

TABLE VII-5
DEMAND/SUPPLY CONDITIONS FOR NICKEL METAL: 1976-1981

UNIT: METRIC TON
INDEX BASE: 1976=100

	Production/Index		Imports/Index		Imports as a % of production
1976	24,010	100.0	12,392	100.0	52%
1977	24,140	100.5	11,982	96.7	50
1978	21,637	90.1	11,790	95.1	54
1979	25,030	104.2	20,775	167.6	83
1980	24,798	103.3	17,023	137.4	69
1981	23,790	99.1	19,188	154.8	81

	Exports/Index		Domestic consumption/Index	
1976	2,663	100.0	27,675	100.0
1977	4,176	156.8	26,723	96.6
1978	3,386	127.1	27,895	100.8
1979	2,077	78.0	31,960	115.5
1980	1,454	54.6	36,539	132.0
1981	1,325	49.8	34,114	123.3

SOURCE: Ministry of International Trade and Industry and Ministry of Finance.

TABLE VII-6
DEMAND/SUPPLY CONDITIONS FOR FERRO-NICKEL: 1976-1981

UNIT: METRIC TON
INDEX BASE: 1976=100

	Production/Index		Imports/Index		Imports as a % of production
1976	244,215	100.0	14,307	100.0	5.9
1977	265,672	108.8	19,858	138.8	7.5
1978	235,863	96.6	20,485	143.2	8.7
1979	346,854	142.0	33,152	231.7	9.6
1980	324,109	132.7	31,119	217.5	9.6
1981	284,440	166.5	26,493	185.2	9.3

	Exports/Index		Domestic consumption/Index	
1976	13,262	100.0	316,679	100.0
1977	2,268	17.1	268,549	84.8
1978	21,773	164.2	273,014	86.2
1979	13,193	99.5	338,459	106.9
1980	17,125	129.1	316,065	99.8
1981	20,742	156.4	265,138	84.0

SOURCE: U.S. Consultants, Inc., *1980 Nickel Statistics*, Tokyo.

energy but leads to a less purified end product than the electrolytic process. The ISP, the most energy efficient of these processes, uses only 780 kilowatts per ton. As of December 1979, 72.3 percent of the process margin (the gap between raw material costs and total production costs) for electrolytic zinc, or approximately ¥36,000 out of a total of ¥49,800 per ton of zinc, went to electricity. In the wake of the 1980 increases in electricity prices, the cost per ton of zinc product rose to approximately ¥54,000. Zinc production by the electrolytic process would be unprofitable, in the absence of by-product recovery. See *Tōyō Keizai*, Vol. 9, No. 4202, February 9, 1980, p. 82.

TABLE VII-7
NICKEL AND CHROME SHARE OF PRODUCTION COSTS FOR STAINLESS STEEL SHEET: THE U.S. COMPARED WITH JAPAN[1]

		Nickel cost (percent)	Chrome cost (percent)	Cost for others (percent)	Selling price in yen
1974	Jan-Feb	29.5	8.7	61.8	406,000
		(35.8)	(11.4)	(52.8)	(400,000)
	Mar-May	26.5	10.0	63.5	430,000
		(34.7)	(11.4)	(53.9)	400,000
	Jun-July	29.1	11.0	59.9	460,000
		(39.9)	(13.1)	(47.0)	(400,000)
	August	27.1	11.8	61.1	520,000
		(41.3)	(13.1)	(45.6)	(400,000)
	Sep-Dec	27.1	11.8-13.4	61.1	520,000
		(42.7-48.9)	(13.1-15.0)	(36.1-44.2)	(350,000-400,000)
1975	Jan-Feb	29.4	15.3	55.3	520,000
		(53.8)	(15.0)	(31.2)	(350,000)
	Mar-Apr	29.4	16.0	54.6	500,000
		(49.0-52.9)	(14.6-15.0)	(32.1-36.4)	(350,000-360,000)
	May-Jun	32.7	17.8	49.5	450,000
		(50.0)	(14.6)	(35.4)	(360,000)
	July-Sep	32.7	17.8	49.5	460,000
		(47.7)	(21.1)	(31.2)	(380,000)
	Oct-Dec	32.7	17.8	49.5	475,000
		(49.5)	(21.1)	(29.6)	(380,000)
1976	Jan-Mar	34.4	15.4	50.2	490,000
		(50.8)	(21.1)	(28.1)	(380,000)
	Apr-Jun	34.4	15.4	50.2	485,000
		(50.8)	(21.1)	(28.1)	(380,000)
	July-Aug	34.4	15.4	50.2	480,000
		(44.9-50.8)	(20.8-23.5)	(25.7-34.3)	(380,000-430,000)
	Sep	32.5	13.9	53.6	490,000
		(44.9)	(20.8)	(34.3)	(430,000)

[1]Parentheses ( ) denote Japan.

SOURCE: *Ferro Alloy Manual*, 1977.

TABLE VII-8
DEMAND/SUPPLY CONDITIONS FOR ZINC: 1976-1981

UNIT: METRIC TON
INDEX BASE: 1976=100

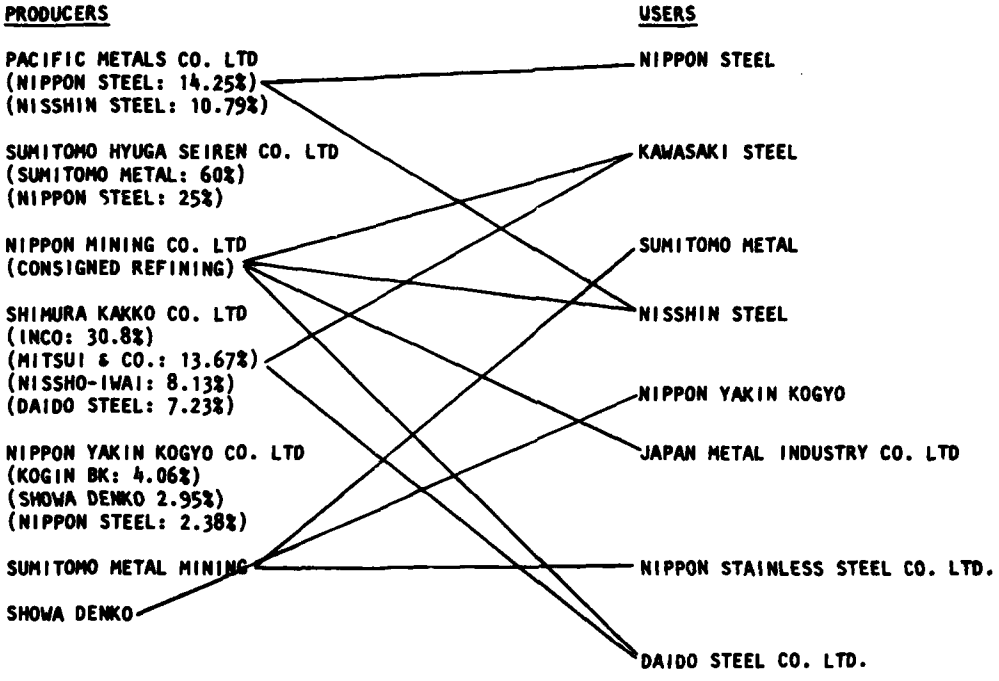
	Production/Index		Imports/Index		Imports as a % of production
1976	742,069	100.0	28,002	100.0	3.8
1977	778,406	104.9	28,663	102.4	3.7
1978	767,949	103.5	31,963	114.1	4.2
1979	789,352	106.4	36,631	130.8	4.6
1980	735,187	99.1	41,838	149.4	5.7
1981	670,162	90.3	30,439	108.7	4.5

	Exports/Index		Domestic consumption/Index	
1976	75,952	100.0	698,609	100.0
1977	70,105	92.3	670,095	95.9
1978	58,857	76.2	716,368	102.5
1979	37,294	49.1	754,081	107.9
1980	41,700	54.9	734,716	105.2
1981	51,278	67.5	687,917	98.5

SOURCE: Ministry of International Trade and Industry and Ministry of Finance.

Figure VII-6

EQUITY AND SALES RELATIONSHIPS BETWEEN FERRO-NICKEL PRODUCERS AND THEIR STEEL INDUSTRY CUSTOMERS



() = CAPITAL SHARE

NOTE: EQUITY SHARES SHOWN IN PARENTHESES INDICATE PERCENTAGES OF NICKEL-PRODUCING FIRMS OWNED BY OTHER COMPANIES. LINES BETWEEN NICKEL PRODUCERS AND USERS INDICATE ESTABLISHED SALES TIES.

SOURCE: FERRO ALLOY MANUAL, 1977.

d. Lead

Even though lead demand and supply patterns resemble those for zinc, industry specialists expect less structural change because, on average, lead production requires much less electricity per ton of product (800 kw) than zinc (4,500 kw). The relatively simple technology and small capital outlays required to expand existing capacity, together with an expectation of only slight increases in demand, suggest that new capacity will not be developed. As with zinc, by-product recovery is generally considered sufficient to make the already-existing Japanese lead industry viable through the 1980s. Still, as is also the case for zinc, nickel, and copper, imports of lead will probably continue to increase.

Table VII-9 shows demand and supply growth for lead from 1976 through 1981. Production was generally flat. Domestic consumption increased steadily to a level 18 percent higher than in 1976. Imports increased 205.7 percent, or, in volume terms, from 7.3 percent of domestic production to 21.6 percent. Exports declined 64.6 percent.

e. Summary and Prospects

Recent years have brought gradual increases in imports of copper, lead, zinc, nickel, and ferronickel, with flat or declining domestic production. For most of these metals, imports have been increasing at a faster rate than domestic consumption since the mid-1970s, and are likely to continue doing so in preference to the introduction of new productive capacity, at least new "greenfield" capacity.

At the same time, some Japanese base metal producers are also benefiting from various "special" factors that will help keep the bulk of their existing capacity viable through the 1980s. In time, factors promoting structural change will have a stronger effect than they have had to date, leading to a slow but generally steady attrition of Japanese base metal production, together with a shift toward more specialized and/or higher technology segments of the market.

Three factors are promoting this shift:

1. *Energy costs*, the most important single factor, are higher than in any other major industrial country. Generally, the higher the energy input for the conversion of ore or concentrates to metal, the greater the likelihood that production of that metal in Japan will become uncompetitive, compared with production in a country with lower energy costs.
2. The *financial condition of Japanese metal producers* has been generally weak since the 1974-75 recession. While most major producers had returned to a position of net profitability by 1980, their level of profits and capacity utilization was too low to warrant major new investments. Even when macroeconomic conditions improve and would seem to justify new investment, Japanese base metal producers are apt either to be less able to make such investments than they were in the pre-1973 years, or to want to invest in more specialized and/or higher technology products than in base metals per se. Alternatively, whatever investments they do make in base metals are apt to be in productive facilities abroad, where energy costs are lower and the competitiveness of new facilities greater than in Japan.

TABLE VII-9
DEMAND/SUPPLY CONDITIONS FOR LEAD: 1976-1981

UNIT: METRIC TON
INDEX BASE: 1976=100

	Production/Index		Imports/Index		Imports as a % of production
1976	219,053	100.0	16,021	100.0	7.3
1977	221,398	101.1	28,172	175.8	12.7
1978	228,442	104.3	36,169	225.8	15.8
1979	221,247	101.0	45,291	282.7	20.5
1980	220,934	100.9	64,388	401.9	29.1
1981	226,242	103.3	48,982	305.7	21.6

	Exports/Index		Domestic consumption/Index	
1976	7,891	100.0	229,820	100.0
1977	7,860	99.6	245,815	107.0
1978	7,434	94.2	266,542	116.0
1979	8,644	109.5	267,090	116.2
1980	4,919	62.3	278,900	121.4
1981	2,791	35.4	271,254	118.0

SOURCE: Ministry of International Trade and Industry and Ministry of Finance.

3. The *efficiency of Japanese base metal production processes* is still relatively high, thanks to an infusion of investment just prior to 1973. Nonetheless, this capital stock is maturing steadily. In time, new investments made in other countries are likely to be more competitive—again, because of lower energy costs—than the then-older Japanese plants, in which most of the post-1973 investment has been for maintenance or rationalization designed mainly to extend their useful life.

Various factors may prevent the copper, lead, zinc, and nickel industries from needing to be declared structurally depressed, under terms of existing law—at least in the short term. Still, these industries are unlikely to recover their former strength. Consequently, though some production is likely to be retained for "national security" purposes, an increasing proportion of consumption will come from imports, and domestic production facilities will either be phased out or converted to more specialized higher technology items.

E. Conclusions and Implications

After 1973, for the first time in the postwar period, the Japanese economy faced the prospect of declining competitiveness in a number of basic manufacturing industries. To the extent that economic progress involves the growth of new industries and a corresponding decline of older industries, this turn of events is inevitable, even desirable. Yet, the phenomenon of declining competitiveness necessarily requires painful adjustments for both management and labor; for this reason it also requires new approaches to structural adjustment generally.

In Japan's case, an underlying commitment to change has been accompanied by specific policies that have contributed to a relatively successful process of structural adjustment. Indeed, Japan's success in this regard can be attributed—perhaps in large part—to the strong commitment to economic growth that existed in broad measure throughout postwar Japanese society. To make the point in more specific terms, as more advanced manufacturing industries were developed, both the government and the general public recognized that resources used by older, less advanced industries were too valuable to permit them to remain frozen in lower productivity uses. On balance, then, the thrust of Japanese government policy toward declining industries has been to permit and even encourage them to contract or phase out, often with tax, financial, or other assistance provided to hasten the process and thereby make room for growing industries. Moreover, the government has followed this approach whether the causes of declining competitiveness stemmed from domestic or international forces. Thus, rather than introducing protective barriers at the first sign of declining competitiveness (leaving aside whether other countries would have tolerated such moves), the Japanese government has generally put its weight on the side of positive adjustment.

Yet, as discussed in the body of this chapter, while the government's role with regard to declining industries has been one of general support for structural adjustment, it has rarely taken the initiative. It does not, for example, issue direct orders to companies, or even write plans or goals in isolation from those that might have had to be written in any case by the companies themselves—faced, as they were, with obvious declining competitiveness. Rather, the government monitors developments, mediates among industries or among firms in an industry when conflicts arise, offers concrete inducements to facilite capacity reductions, provides worker-oriented assistance programs in addition to those offered by management, and provides special funds for a number of particularly hard-hit sectors. Moreover, positive incentives to depressed industries are usually provided only in return for an explicit, enforceable plan agreed to by most members of the industry, and typically requiring capacity reductions or other specific changes. Thus, the government has played, and continues to play, an active role in reducing the costs, or risks, inevitably associated with declining industries. This role is especially obvious with regard to those hard-hit sectors that have already been designated as "depressed," but is also evident with recently hard-hit sectors such as petrochemicals. On the other hand, the active role the government has played in reducing costs or risks has not extended to initiating the process of adjustment in individual industries or of forcing industry compliance or agreement when intra-industry disputes arise.

Indeed, the main causes for whatever structural adjustment has in fact occurred—and in our view the main causes of structural adjustment likely in the future—are market forces. Despite a widely-held view that the Japanese market is "closed," the cases of declining industries on record to date—e.g., shipbuilding, petrochemicals, petroleum refining, aluminum, and increasingly other nonferrous metals as well—show that at some point, Japanese companies, like those in other countries, are unable to sustain price/cost differentials with the rest of the world. The particular turning point when this happens is hard to predict—perhaps more so in Japan because, as an advanced industrial country that became so more recently than others in this category, Japan has fewer cases of declining industries on record and for this reason a lingering tendency to assume that adjustment can occur painlessly—or perhaps be stretched out over a longer period of time at the expense of other countries.

In shipbuilding, for example, when the cost of sustaining too much excess capacity became excessive, the industry itself, including both management and labor, was galvanized into action. In fact, once

a consensus was reached on this point, the actions taken by the industry were extremely decisive. Government policies only hastened a process of adjustment; they did not initiate or force the adjustment. In petrochemicals and petroleum refining, the petrochemical companies were simply unable to produce ethylene at a competitive price if their feedstock supply were limited to higher-priced, domestically-produced naphtha. This unalterable constraint—not government appeals for patience and further study—eventually contributed to MITI's agreement to a partial deregulation of naphtha prices. In aluminum, an ever-widening gap between higher-priced domestic aluminum and lower-priced imported aluminum has yet to bring about a government-industry consensus on an "ideal" course of action, but imports continue to increase in any event. All of these cases illustrate the basic point that, even in Japan, competition eventually forces industry adjustment.

These cases also show that—again, contrary to a widely-held view—Japanese are in fact pragmatic and flexible in their attitudes toward structural adjustment. Despite "strategic industry" or national-security arguments that are often used to try to justify subsidization of basic manufacturing industries beyond a point when they might be economically competitive, when price differentials become too great, imports increase. As in other countries, such national-security arguments will doubtless keep some manufacturing industries alive indefinitely. Nonetheless, in general, the greater the price differentials between the domestic and the imported product, the greater the pressure to import, and correspondingly to contract the size of even so-called "strategic industries." Indeed, this point is particularly likely to apply when it adversely affects advanced manufacturing industries with a high proportion of exports; the greater the importance of an uncompetitive good as an input to an otherwise highly competitive downstream export-oriented industry, the greater the pressure to acquire that input from cheaper, imported sources.

To date, of course, the cases of declining industries in Japan have been mainly in producer (or intermediate) goods industries, e.g., basic manufacturing industries and (though it is beyond the scope of this report) agriculture. In time—though for policy purposes the question of how much time this process takes may be an even more important, if separate, question—the effects of price differentials should lead to more structural adjustment, and thus to rising imports, in other sectors of the economy as well. Again, the larger the price differential, the more important the product as an input to export-oriented industries, and perhaps also the more aggressive that foreign exporting firms are in supplying a competitively-priced alternative, the more rapid this adjustment will occur.

To the extent that Japanese government policies have sought to facilitate this process, they have done so by making government assistance contingent on actual industry and worker adjustment. This link provides a positive incentive for the movement of capital and labor away from declining industries into growing industries, i.e., by providing adjustment assistance only if and as industries (including labor) agree to use this assistance to facilitate their redeployment, rather than to cushion their remaining in place indefinitely. Moreover, while MITI may have always wanted to exercise more control over industries in general, and over hard-hit sectors in particular, this goal has been achievable in various declining industries only after conditions had deteriorated to such an extent that the affected industries began actively to seek government assistance.

As described above in various case studies, the principle of positive adjustment was well understood by Japanese policy-makers. However, only in the 1970s have policy-makers been faced with actual, large-scale pressures for adjustment. To date, their only major case of successful structural adjustment through capacity reductions has been in shipbuilding—a special case indeed. As noted earlier, the success of the adjustment process in shipbuilding is largely attributable to the industry itself. Moreover, the industry faced special conditions that it could take advantage of—conditions seldom present in other declining industries. First and foremost, Japanese shipbuilding was—and still is—by and large the most efficient in the world. This meant that, whatever happened, Japanese shipbuilding would face a somewhat easier adjustment problem than most declining industries. Secondly, the problem facing the shipbuilding industry in the mid-1970s was a collapse in demand, particularly for tankers; Japanese producers, which had a large share of the world market (more than 50 percent), thus had the power to stabilize or destabilize that market. In the wake of various OECD-sponsored discussions, Japanese producers made a unilateral decision to take no more than roughly 50 percent of what was then becoming a much smaller world market. They could certainly have sought a larger market share; by limiting themselves in this way, Japanese producers indicated a willingness to stabilize the global market through an informal depression cartel, hoping thereby to minimize the economic and poltical frictions that would surely have arisen in the absence of some coordinated countermeasures.[1] Within Japan, agreement on capacity reductions was reached—albeit painfully—once it became obvious that the global industry was structurally, not cyclically, depressed. Japanese industry clearly hoped—and guessed—that it would emerge from this adjustment

[1]However, Japanese producers subsequently felt cheated when, in their view, Western European producers seemed to be trying to take advantage of Japanese self-restraint.

as still the most competitive in the world. And in hindsight, although the adjustment process in shipbuilding can easily be judged as successful, it is also now clear that the Japanese producers underestimated the rising competitiveness of shipbuilding industries in some of the NICs.

Key conditions that contributed to successful adjustment in shipbuilding do not hold for the other declining industries discussed above. In these areas, the government has been less able to mediate successfully among competing groups or to apply successfully its array of carrots and sticks. In these other cases—petrochemicals (especially ethylene production), petroleum refining, aluminum, and nonferrous metals—Japanese industries are at a competitive disadvantage vis-a-vis other producers. Since the main problem in these industries is the high energy content of their production costs, the problems they face cannot be solved by capacity reductions per se. Moreover, the world market in these industries is highly competitive, and the small share of the world market held by Japanese industry provides it no leverage for implementing a short-term informal depression cartel, even if such a move were the industry's best chance for survival. In other words, improvement in capacity utilization simply would not solve the more fundamental, structural problems of these industries. For example, capacity reductions in aluminum on the order of 20-40 percent, as suggested by MITI officials, would only ease, but would not solve, the long-term problem. To be sure, the closure of relatively inefficient plants would improve the average cost position of the industry and help maintain the viability of the remaining capacity. Yet, Japanese producers would still remain worse off, in absolute terms, than other producers with lower-priced and more abundant energy sources and raw materials—and thus at a minimum face continuing competitive pressure. In fact, in discussions with MITI, some Japanese aluminum producers made this very argument themselves, which in turn led them to seek outright subsidies on national security grounds rather than a capacity reduction plan. Such examples as these, where even MITI has had little success to date, provide more of a parallel to the U.S. and European patterns of declining industries, which are characterized by internationally uncompetitive costs, than to the successful Japanese adjustment case in shipbuilding.

Indeed, if in the future the process of structural adjustment in Japan becomes more difficult—either because of an increased reluctance to phase out more basic manufacturing industries as more of them become uncompetitive, or because new areas of diversification seem less obvious—Japanese government policies are likely to become less effective as well.

Before 1973, the protectionism that existed in Japan was largely of the "infant industry" type, meaning that it was designed to keep imported products out for the express purpose of providing new industries the leeway in which to grow.[1] Some industries that were developed shortly after World War II were phased out before 1973, but these were by and large uncontroversial examples, e.g., toys, which, in the value system of the day, were obviously no more than a way-station toward more advanced manufacturing industries, or coal, which was phased out at MITI's behest, largely because domestic supplies were clearly insufficient for Japan's prospective growth and imported oil seemed likely to be (and for many years turned out to be) cheaper than imported coal. To some extent, the successful adjustments of the pre-1973 period were due to luck, e.g., extraordinarily high growth rates and mild recessions characteristic of the world economy in general during the 1947-73 period. In this environment, it was relatively easy to phase out these industries, since demand for labor and capital was growing so rapidly that re-employment—even within the same firm or group—became possible relatively quickly. Indeed, with such high growth, phaseout simply meant no growth rather than absolute decline. Controversy over protectionism for declining industries did not arise in Japan until after 1973, when, with the after-effects of oil price increases, it gradually became evident that certain basic manufacturing industries of the sort that Japan had long promoted were going to have to be phased out, and that long-term real growth rates had permanently declined.

This is roughly where the controversy stands today. A number of Japanese industries have already begun to lose their competitiveness, and still others, such as various nonferrous metals, appear likely to lose their competitiveness within the decade or early in the 1990s. For basically political reasons, protectionist policies for declining industries, even if "temporary," may well become more the order of the day. Recent press reports and private discussions with the study team suggest that MITI is likely to expand the scope and time frame of the Depressed Industries Law. In all likelihood this will be in a form that allows the government to offer additional carrots and sticks to firms and industries that have recently experienced, or will shortly experience serious structural declines, in addition to whatever cyclical downturns occur (or continue). Such an expanded law may well permit the formation of additional depression cartels exempt from the Japanese Anti-Monopoly Law and thus much easier conditions

[1]Economists are divided on the justification for "infant industry" protection. Some, such as Paul Samuelson in his classic textbook, contend that such protection can be justified *temporarily* on economic grounds, as well as on political grounds. Other economists deny any economic justification whatsoever for "infant industry" protection, though political pressures may require them. In any case, Japan is an example *par excellence* of a country that has used large-scale "infant industry" policies successfully.

under which industries could form such cartels. In our view, U.S. policy-makers would do well to monitor this possibility closely. To be sure, genuinely temporary supports for depressed industries are not illegal under GATT. Indeed, some would say the U.S. has led the way in negotiating trade restrictions, especially in the form of bilateral "voluntary" export restraints in hard-hit sectors of American manufacturing industries, e.g., textiles, steel, and automobiles. On the other hand, the history of trade frictions between the U.S. and Japan suggests that any imposition of additional trade barriers by Japan is likely to trigger extreme criticism in the U.S. For this reason alone, the mere possibility of Japan's taking this route should be closely monitored by U.S. officials.

APPENDIX A

OUTLINE OF THE RESEARCH AND DEVELOPMENT PROJECT ON BASIC TECHNOLOGIES FOR NEW INDUSTRIES

FY81 budget was allocated to 3 subjects:

1. New Materials (6 themes): ¥1356 million
2. Biotechnology (3 themes): ¥ 675 million
3. New function elements (3 themes): ¥ 673 million

(total budget including clerical expense was ¥2714 million)

I. *List of Companies That Have Applied, By Area*

A. *Fine Ceramics*, 15 R&D-associated member companies

Toshiba Corporation (chair company)
Showa Denko, K.K.
Asahi Glass Co., Ltd.
Kobe Steel Ltd.
Kyoto Ceramic Co.
Toyota Motor
Ishikawajima-Harima Heavy Industries Co., Ltd.
Shinagawa Refractories
Inoue Japax
N G K Spark Plug Co., Ltd.
N G K Insulators Ltd.
Toyoda Machine Works Ltd.
Denki Kagaku Kogyo K.K.
Kurosaki Refractories Co.
Sumitomo Electric Industries Ltd.

B. *Macromolecule Material*, 11 R&D-associated member companies
(a) high efficiency separation membrane material
(b) conductive macromolecule material
(c) crystallinity macromolecule material

Toray Industries, Inc. (chair company)
Teijin Ltd.
Asahi Glass Co., Ltd.
Mitsubishi Chemical Industries Ltd.
Sumitomo Electric Industries Ltd.
Toyobo Co., Ltd.
Daicel Chemical Industries Ltd.
Kuraray Co., Ltd.
Mitsubishi Petrochemical Co., Ltd.
Ashai Chemical Industry Co., Ltd.
Sumitomo Chemical Co., Ltd.

C. *New Material*, 17 R&D-associated member companies
(a) high efficiency crystal control alloy
(b) composite material

(Starting fund: ¥50 million; FY1981 subsidy: ¥370 million)

Fuji Heavy Industries Ltd. (chair company)
Kobe Steel Ltd. (sub leader)
Toray Industries, Inc. (sub leader)
Ishikawajima-Harima Heavy Industries Co., Ltd.
Hitachi Metal Ltd.
Hitachi Ltd.
Mitsubishi Metal Corp.
Daido Steel Co.
Sumitomo Electric Industries Ltd.
Teijin Ltd.
Mitsubishi Chemical Industries Ltd.
Kawasaki Heavy Industries Ltd.
Toshiba Machine Co., Ltd.
Toyota Motor Co., Ltd.
Mitsubishi Electric Corporation

D. *Biotechnology*, 14 R&D-associated member companies
(a) bioreactor for industrial use
(b) technology for mass cultivation of cells
(c) gene-splicing technology

(FY1981 subsidy about ¥670 million)

Mitsubishi Chemical Industries Ltd. (chair company)

(reactor)
Daicel Chemical Industries Ltd.
Kao Soap Co., Ltd.
Mitsubishi Gas Chemical Co., Ltd.
Mitsui Petrochemical Industry Ltd.

(biomass)
Takeda Chemical Industry Ltd.
Ajinomoto Co., Inc.
Kyowa Hakko Kogyo Co., Ltd.
Asahi Chemical Industry Co., Ltd.
Toyo Jozo Co., Ltd.

APPENDIX B

SUNSHINE PROJECT ACTIVITIES PLANNED FOR FISCAL 1981
(UNIT: MILLION YEN)

	Project Name	*Budget for FY 1980*	*Budget for FY 1981*	*Points in 1981 plan*
1.	Solar energy	9,544	7,961	1. Operational testing of solar thermal power generation plant (Two 1,000kW systems)
				2. Construction of facilities to utilize photovoltaic power generation technologies
				3. Expansion of R & D on new type solar cells and low-cost solar panel production processes
				4. Development of solar systems for industrial process heat, etc. (Including solar systems for industrial process heat)
2.	Geothermal energy	8,006	9,223	1. Technology for exploration and extraction of geothermal energy
				2. Technology for 10,000kW class binary cycle geothermal power generation test plant and total flow pilot test plant utilizing hot water
				3. Technology for deep geothermal water supply systems
				4. Technology for multipurpose utilization of geothermal energy and environmental preservation
				5. Demonstration environmental protection program for development of large-scale power plant using deep geothermal reservoirs
3.	Coal conversion	8,553	13,514	1. Operation of 40 t/D low-calorific gasification plant
				2. Construction of high-calorific gasification plant with a capacity of 7,000m/D
				3. Operation of 1 t/D solvolysis liquefaction plant and design of 40 t/D plant
				4. Operation of 1 t/D solvent extractive liquefaction plant
				5. Operation of 2.4 t/D direct liquefaction plant
4.	Hydrogen energy	951	948	1. Construction of high-temperature high-pressure water electrolysis pilot plant ($20Nm^2$/hour)
				2. Expansion of research on hydrogen utilization technology

(Continued)

APPENDIX B (cont'd)

	Project Name	*Budget for FY 1980*	*Budget for FY 1981*	*Points in 1981 plan*
5.	Supporting research	551	1,233	1. Expansion of research on ocean thermal energy conversion technology 2. Development of wind energy conversion system (100kW)
6.	Others	364	112	1. Implementation of research facilities 2. Office expenses, etc.
7.	International cooperation	679	668	1. U.S.A. — Japan joint research on geothermal energy utilization technologies 2. U.S.A. — Japan joint research on coal liquefaction technologies 3. IEA countries — Japan multilateral cooperation
8.	Total Budget	28,648	33,659	

APPENDIX C

R & D ON LARGE-SCALE CONSERVATION TECHNOLOGY (MOONLIGHT PROJECT)
(UNIT: MILLION YEN)

Project Name	*R & D Period (FY)*	*Total R & D Expenditure*	*Budget for FY 1981*	*Outline of Project*	*Main R & D Activities in FY 1981*
Advanced gas turbine	1978–1984	about 21,000	5,920	Development of a gas turbine that will raise heat efficiency to a remarkable 55%-plus in a combined generating cycle with a steam turbine; R & D on ultra-high temperature resistant materials and elementary technology will enable the temperature at the turbine inlet to be raised to 1,500°C, etc.	A pilot plant (generation efficiency 50 percent) of the 100,000kW class will be designed and manufactured.
Waste heat utilization technology systems	1976–1981	about 4,000	887	R & D on elementary technologies and total systems for the utilization of waste heat, including heat recovery, heat exchange, heat transmission, heat storage, etc. with a view to conserving resources and energy in industry and promoting the effective utilization of waste heat by the community.	Pilot plants and equipment are being manufactured and practical experiments will be performed.
Magneto-hydrodynamic power generation	1976–1982 (2nd phase) 1966–1975 (1st phase)	about 12,000 1st phase: about 6,400	624	Under this system, high-temperature combustion gas is transformed directly into electrical energy, by being passed between powerful magnets at high speed. R & D is being conducted on MHD electric power generation technology which can be combined with thermal power generation in order to vastly increase thermal efficiency.	Construction of the Mark VII test facility (using ordinary magnets) has been completed and experimental runs of 200 hours at 100 kW are underway.

(Continued)

APPENDIX C (cont'd)

Project Name	*R & D Period (FY)*	*Total R & D Expenditure*	*Budget for FY 1981*	*Outline of Project*	*Main R & D Activities in FY 1981*
Advanced battery energy storage system	1980–1990	about 17,000	646	The development of highly efficient batteries to store electrochemically surplus power at off-peak periods and release it at peak periods.	Studies will be conducted into basic technology for new new-type 1 kW class batteries (Na/S, Zn/Cl_2, Zn/Br_2, redox flow), systems analysis of electrical networks using simulation mechanisms, and total systems for battery storage of energy.
Fuel cell generation technology	1981–1986	about 11,000	239	Fuel cell generation is ideal in that power stations employing it can be located in urban areas, and it is expected to make a major contribution to generational efficiency. R & D into fuel cell systems and feasibility studies on practical applications, reliability and economy are now underway.	Commenced in 1981 as a new project.

APPENDIX D

NATIONAL RESEARCH AND DEVELOPMENT PROGRAM—LARGE-SCALE PROJECT

Completed Large-scale Projects *Unit: Million yen*

Project Name	*Period (FY)*	*Total Expenditure*	*Outline of Project*
Super-high Performance Electronic Computer	1966–1971	10,124	Large scale computer system with super-high performance.
Desulfurization Process	1966–1971	2,675	(1) The efficient removal of the SO_2 contained in the gases exhausted from power plants or other industries which consume a great deal of heavy oil. (2) The direct removal of sulfur from heavy oil.
Sea Water Desalination and Byproduct Recovery	1969–1977	9,966	Economical large-scale production of fresh water and economical by-product recovery technology.
Electric Car	1971–1977	5,692	Various types of electric car to replace ordinary vehicles in urban areas.
Comprehensive Automobile Control Technology	1973–1979	7,406	Integrated control technology with a view to relieving traffic congestion, reducing automobile pollution and traffic accidents, etc.
Pattern Information Processing System	1971–1980	22,073	Computer technology for the recognition and processing of pattern information such as characters, pictures, objects and speech.
Direct Steelmaking Process Using High Temperature Reducing Gas	1973–1980	13,998	Direct steelmaking technology with a view to solving the pollution problems that accompany present-day methods and reducing the dependence on coal as a raw material. The new technology aims at a closed system which uses the heat energy from a multi-purpose high temperature gas-cooled reactor in the steelmaking process; this new reactor is scheduled for development in the near future.
Remotely Controlled Undersea Oil Drilling Rig	1970–1975	4,507	The development of remote-control oil drilling rigs for undersea use.

(Continued)

APPENDIX D (cont'd)

Ongoing National Research and Development Projects

Unit: million yen

Project Name	*R & D Period (FY)*	*Total R & D Expenditure*	*Budget for FY 1981*	*Outline of Project*	*Main R & D Activities in FY 1981*
Olefin Production from Heavy Oil as Raw Material	1975–1981	about 13,800	3,156	R & D on the technology for manufacturing high-value-added olefin (commonly known as ethylene, propylene, etc., and used as a raw material for synthetic resin, synthetic rubber, synthetic fibers etc.) using a high sulphur-content heavy oil fraction (so-called asphalt), which is difficult to desulphurize, as the raw material.	Operation of the large scale pilot plant
Jet Engines for Aircraft	1976–1981 (2nd phase) 1971–1975 (1st phase)	about 13,000 1st phase: about 6,900	1,901	R & D on a high-performance civil aircraft fan-jet engine which causes less environmental damage, i.e., less noise and less atmospheric pollution, and features high overall efficiency, high durability against frequent take-offs and landings and easy maintenance.	Engine tests and simulated high altitude anti-icing tests
High speed computer system for scientific and technological uses	—	—	30	R & D on high-speed computer system for processing and computation of scientific and technological information (processing of image information from satellites, simulation of nuclear fusion, etc.) which present computers cannot handle in realistic time.	Planning of the R & D program for the entire project. Inauguration of R & D on high speed logic and memory devices such as Josephson and GaAs FET devices, and conceptual design work on high speed parallel processing systems.
Subsea Oil Production System	1978–1984	about 15,000	3,515	R & D on subsea oil production system (in which production from small-scale oil fields is possible without any adverse	Test manufacture of some of the equipment for comprehensive marine experiments; final design and production work on

				effects on the fishing industry) which is effective for subsea oil production in deep waters (over 300m deep) and suitable for use in the sea areas surrounding Japan.	other experimental equipment. Detailed planning for experiments.
Optical Measurement and Control System	1979–1987	about 18,000	2,419	R & D on measurement control system that uses optics and makes possible the systematic measurement, integrated observation and control of mass information, including visual information arising in specific areas, such as industrial parks, large-scale plants, etc., even under adverse conditions such as those where electromagnetic induction etc., prevails.	Detailed design of functional subsystems for various functions; research on essential technology
C_1 (Monocarbon) Chemical Technology	1980–1987	about 15,000	902	R & D on technology for the stable and economic production of such basic chemical products as ethylene glycol, acetic acid and ethanol etc., with C_1 compounds such as carbon monoxide obtained from alternative carbon sources such as natural gas coal, tarsand, etc., as their basic raw materials	The inauguration of R & D on projects aimed at promoting a switch in chemical technology to basic materials other than oil resources
Manganese nodule exploitation system	—	—	50	R & D on efficient and reliable methods for exploiting, by means of hydraulic mining systems, deep-sea deposits of manganese nodules containing economically important metals (Ni, Cu, Co, Mn, etc.).	Conceptual design of the entire system and subsystems such as collectors, lifting pumps, pipe strings, handling apparatus and instrumentation; basic experiments on vertical slurry transportation and the geotechnology of deep-sea sediments.

(Continued)

APPENDIX D (cont'd)

Ongoing National Research and Development Projects (cont'd)

Unit: million yen

Project Name	*R & D Period (FY)*	*Total R & D Expenditure*	*Budget for FY 1981*	*Outline of Project*	*Main R & D Activities in FY 1981*
Resource Recovery Technology	1976–1982 (2nd phase) 1973–1975 (1st phase)	about 11,000 1st phase: about 1,300	1,501	R & D on technical systems for the disposal of solid urban waste, centered on resource recycling with a view to promoting the efficient utilization of resources and facilitating the smooth aplication of solid urban waste treatment.	Comprehensive research on the operation of materials recycling type facilities and energy recycling type facilties.
Flexible Manufacturing System Complex Provided with Laser	1977–1983	about 13,000	2,745	R & D on complex production system in which mechanical components for small batch producton of diversified products can be flexibly and rapidly produced from metallic materials in an integrated system.	Detailed Design of Manufacturing System Complex Test Plant

APPENDIX E

ACTIVITIES OF THE INFORMATION PROMOTION AGENCY

I. Promotion of development of Software Production Technology:
6-year project, FY 1976-1981.

Budget: (Million ¥)

1976	1977	1978	1979	1980	1981
500	850	1112	1522	1672	970

II. Promotion of Development of Software Maintenance Technology:
5-year project, FY 1981 initiated. Total of ¥5 billion is expected to be capitalized over 5 years. Budget for FY 1981 was ¥140 million.

III. Promotion of Development of Advanced Information Processing Technology. Within I.P.A., software technology centers (temporary name) to be established. Members to be gathered from information processing companies, computer manufacturers, computer users, research organizations and universities for an ad hoc project team. I.P.A. will organize and lead the activity of this team.

Budget for this project was ¥32 million in FY 1980 for start-up, and ¥395 million in FY 1981.

IV. Emphasis on strengthening the development of specified programs:
I.P.A. develops advanced, general-purpose programs which are difficult to develop by private companies. From FY 1981, I.P.A. will put more emphasis on packaged programs. Budget for 1981 was ¥1351 million, which includes ¥300 million for packaged program development. Comparable figures for 1980 were ¥1201 million and ¥150 million respectively.

OTHER PROJECTS/ASSOCIATIONS RECEIVING IPA FUNDS

Joint System Development Corporation (JSD)

JSD was established 1 April, 1976, to carry out software development projects.

The Joint System Development Corporation (JSD) was established as a "joint business entity" of 19 leading, and 105 other, software firms.

JSD was established by the software firms for the pooling of resources.

Three kinds of projects are currently under way, related to software engineering and productivity:

1. Program Productivity Development system (with partial IPA funding)
2. Software Engineering Project
3. Software Maintenance Engineering Facility Project

APPENDIX F

ANNOTATED BIBLIOGRAPHY

1. General Economic

Aho, Michael C., and Rosen, Howard F. *Trends in Technology Intensive Trade*. Washington, D.C.: Office of Foreign Economic Research, Bureau of International Labor Affairs, U.S. Department of Labor, 1980.

This report examines trends in international trade of technology-intensive products in an effort to determine whether the U.S. competitive position in this field has eroded. The authors find that the U.S. still maintains a strong comparative advantage in these products; they conclude, however, that this competitive edge is diminishing.

Bruce-Briggs, B. "The Dangerous Folly called Theory Z." *Fortune*, May 17, 1982, pp. 41–53.

This is a brief and clear, though sometimes digressive, critique of *Theory Z: How American Business can Meet the Japanese Challenge* (W. Ouchi, Reading, Ma.: Addison-Wesley, 1981) and other recent books and articles suggesting that American firms have much to learn from Japanese personnel and management concepts. Bruce-Briggs attributes Japan's economic success not to packageable skills in human relations, but to the dedication of its work force, which he attributes in turn to cultural factors going back thousands of years, and to an adherence to "the fundamental of commerce—give the customer what he wants and control the costs." Because the American and Japanese cultures are so different, he argues, attempts to follow Japanese-based personnel and management practices in the U.S. will not work: "To imitate the Japanese, we would need a labor force disciplined by a social hierarchy controlled by an oligarchy." Instead of "Theory Z and allied nostrums," Bruce-Briggs argues, American firms should take notions from Japan that are transferable, e.g., giving the customer what he wants, controlling costs, dedication, discipline, and hard work.

Caves, Richard E., and Uekusa, Masu. *Industrial Organization in Japan*. Washington, D.C.: The Brookings Institution, 1976.

This is an excellent reference book on Japanese industrial organization. Among the subjects addressed are: the structure of industry; patterns of competition; the role of intermarket groups; allocative and technical efficiency; imported technology and industrial progress; and government policy. *Inter alia*, the authors discuss these questions: does industrial market competition operate the same way in Japan as in Western industrialized countries? Are Western analytical tools useful when applied to Japanese markets? What are the effects, if any, of Japan's "distinctive" institutions on the operation of the economic system? They conclude that Western economic tools are useful in dealing with these questions, especially with regard to the role of bank-centered alliances. The authors are ambivalent about whether Japan's industrial policy has, on balance, helped or hindered the nation's economic development.

Economic Planning Agency. *Economic Survey of Japan 1980, 1981*. Tokyo: *The Japan Times*, 1981.

These documents provide useful current data on the Japanese economy. They focus on the impact of the second oil crisis, the basic characteristics of the economy, and the sources of economic vitality.

Fusfeld, Herbert, and Haklisch, Carmelas. *Industrial Productivity and International Technical Cooperation*. New York: New York University, Center for Science and Technology Policy, 1981.

This book provides a useful overview of possible ways to improve industrial productivity and technical cooperation among governments. It includes specific sectoral studies of telecommunications, environmental control, and electronics.

Hadley, Eleanor M. "Is the U.S./Japan Trade Imbalance a Problem? Economists Answer No, Politicians, Yes." *Journal of Northeast Asian Studies*, 1982, pp. 35–57.

Hadley describes past and present trade problems between the U.S. and Japan. She argues that the Reagan administration, like others, is focusing trade discussions on non-competitive U.S. exports (such as beef and citrus); she feels that this approach cannot rectify the current trade imbalance with Japan. Moreover, she points out that the administration wants Japan to spend more on defense. She argues that this position ignores the attitudes of Japan's neighbors and the provisions of the Japanese constitution. In her view, defense expenditure should be examined in terms of "perceived threat," not in terms of a given percent of GNP. She feels that the single most important variable affecting the bilateral trade imbalance is the absence of a long-range national economic plan in the U.S.—in contrast the to existence of such planning in Japan. She argues that the West should focus on maintaining international competitiveness in industries where wage levels are favorable; she feels that, in industries that are highly labor-intensive, this is impossible. She points out that many bilateral imbalances have persisted for decades, and concludes that the U.S.-Japan imbalance will deteriorate in the future.

Holdridge, John H. "The U.S.-Japan Relationship and Assessment." *The Journal of the American Chamber of Commerce in Japan*, March 1982, pp. 5–16.

In this assessment of U.S.-Japan relations, then U.S. Assistant Secretary of State Holdridge argues that there are more grounds for cooperation between the two countries than there are for conflict. He makes it clear, however, that U.S.-Japanese tensions are very real. Looking ahead, Holdridge argues that strains will come from a "growing disparity between U.S. expectations for Japan in the economic and defense areas and Japan's ability or willingness to meet these expectations." He feels that Japan is likely to assume greater responsibility in these areas, but argues that the pace is likely to be slower than the U.S. would like. He also indicates that Japan's adjustment to shifts in the relative power and influence of the U.S. involves a certain element of friction; thus, Japan could, at worst, lose confidence in the ability of the U.S. to guarantee Japanese security. Although the author suggests that the basic factors that sustain U.S.-Japanese relations will continue to operate, he says that he is less sanguine about their prospects than at any time in the past.

Isomura, Takafumi. *Nihongata shigyō keizai* [Japanese-Style Market Economy]. Tokyo: Nihon hyōron sha, 1982.

The author addresses the role of the government and the market in the economic development of Japan; he concludes that Japan's economic success can be credited in large part to the active role played by the government.

The Japan Economic Journal. *Industrial Review of Japan 1982*. Tokyo, 1982.

This document presents an overview of the Japanese economy. It is organized around two general themes: deflationary pressures on the economy, and the booming and depressed sectors of the economy. Both themes are addressed in a number of articles by reporters from the *Japan Economic Journal*. This volume is one of a series issued each year.

The Japan Times. *Japan's Economy and Japan-U.S. Trade*. Tokyo, 1982.

This book is a useful source of material on: the Japanese economy, Japanese foreign aid policy, Japanese defense policy, U.S.-Japan economic and trade relations, and on a number of specific sectoral issues such as automobiles, high technology, and Alaskan oil. The material is presented in question and answer form.

Johnson, Chalmers. *Japan's Public Policy Corporations*. Washington, D.C.: American Enterprise Institute, 1978.

This work is an in-depth study of these enterprises. By identifying historical government-business relations, and the influence of bureaucratic interests on the institutions of economic administration in Japan, Johnson focuses attention on the importance of public corporations in Japan as an instrument of government intervention in the economy.

Kato, Hiroshi. "Administrative Reform is Japan's Only Option." *Economic Eye*, Keizai Kōhō Center (Japan Institute for Social and Economic Affairs), March 1981, pp. 8–12.

The author argues that the sluggish performance of the Japanese economy in 1981 is attributable to the failure of the monetary authorities to counter the recession that began in the fall of 1980 by promptly lowering the official discount rate. Moreover, he feels that the growth in postal savings and the large volume of government bond issues have caused interest rates to be higher than expected; he believes that these rates are unlikely to fall in the short term. Kato also suggests that economic sluggishness has been due in part to low levels of consumer spending—which he attributes to large tax and social insurance payments. The author concludes that adminstrative reform is the only path toward greater economic vitality for Japan.

Kinoshita, Sōichi. "Sengo nihon no sozei seisaku to setsubi tōshi kōdō" ["Policies and Capital Investment Behavior in the Postwar Period"]. *Kikan Gendai Keizai*, June 1972.

This is one of the few articles on Japanese industrial policy that actually tries to make a quantitative evaluation of the effects of various instruments of industrial policy. Thus, it analyzes the relationship between tax policies and capital investment in Japan during the 1955–65 period. The author examines the impact of taxation on private capital investment, capital cost, and capital investment behavior, and evaluates the investment promotion effects of the specific tax measures.

Komiya, Ryūtarō. *Gendai nihon keizai kenkyū* [Research on the Modern Japanese Economy]. Tokyo: *Tōdai shuppan kai*, 1975.

As indicated in the title, this is an overview of the Japanese economy. The author examines capital formation in postwar Japan, and gauges the impact of personal savings, the tax system, capital accumulation, government policies, the social welfare system, and economic planning in general. Komiya argues that the most important actors in the economy were, and remain, certain ministries, industries associations, various advisory councils and committees, big business groups, and banks.

Kosai, Yasushi. *Kōdō seichō no jidai*. [The Era of High Growth]. Tokyo: Nihon Hyōron Sha, 1981.

This work takes a historical approach to the Japanese economy. Starting from the occupation era, the author describes government policies and private sector actions during the period of high growth, and analyzes their impact. He argues that, to the degree that a "Japan, Inc." exists, it has been forced to change as the economy has grown and matured. Kosai argues that the market played a more decisive role than the government in promoting Japan's overall growth.

Magaziner, Ira C., and Reich, Robert B. *Minding America's Business: The Decline and Rise of the Economy*. New York: Harcourt Brace Jovanovich Publishers, 1982.

The authors combine analyses of firm-specific strategies, U.S. macroeconomic policy, and other government policies into what they consider a "comprehensive analysis" of the successes and failures of American industry. They conclude with a prescription of how they think the U.S. can rectify its declining competitiveness—notably by making an already existing de facto U.S. industrial policy more explicit and systematic. The authors evaluate the competitive position of the U.S. by combining the concepts and tools of the business planner with those of the policy analyst. They do so by looking in turn at individual industries, e.g., television, steel, electronics, and capital goods in general; the process of investment decisions; cost management practices; pricing policies; and worker-management relations. In the prescriptive chapters, they describe various patterns of government intervention in the economy of other countries and outline the major policy alternatives they believe lie ahead for the U.S.

Moritani, Masanori. *Japanese Technology*. Tokyo: The Simul Press, 1982.

Moritani attempts to identify, from a comparative perspective, the "secrets" behind Japan's ability to produce outstanding industrial products at low cost. He points to the high degree of competition within Japan, and to many cultural carry-overs from Japan's pre-modern period that provide strong incentives to produce high quality goods. He also surveys various ways in which Japan could and should share responsibility for international cooperation in technological development. This is a chatty book, of special value to people interested in a social commentary on Japanese technology.

Mutti, John. *Taxes, Subsidies and Competitiveness Internationally*. Washington, D.C.: National Planning Association, Committee on Changing International Realities, 1982.

Mutti analyzes the variety and scope of government fiscal intervention (in the form of aggregate indicators such as tax burdens and subsidies) in seven major OECD countries: Canada, France, Germany, Italy, Japan, the U.K., and the U.S. He also analyzes fiscal policies that have direct effects on five industries: textiles, steel, automobiles, pharmaceuticals, and computers. The author concludes that investment and employment are probably discouraged to a greater extent in the U.S., through tax and subsidy policies, than in other countries.

Nanjo, Zenji; Kawashina, Tatsuhiko; and Kuroda, Toshio. *Migration and Settlement*, RR-82-5 Laxenburg, Austria: International Institute for Applied Systems Analysis, February 1982.

In this report, three Japanese authors analyze the changing migration patterns of their country, focusing on population shifts away from the metropolitan areas. A brief survey is included of the major population-related policies that have been introduced since the 1940s. The study provides an excellent bibliography and data base on Japanese demographics and migration patterns.

Ohkawa, Kazushi; Shinohara, Miyohei; and Meissner, Larry. *Patterns of Japanese Economic Development: A Quantitative Appraisal*. New Haven and London: Yale University Press, 1979.

This is an excellent quantitative analysis. It covers: patterns of Japanese economic growth and product allocation; basic production and trade developments in a number of sectors; trade and balance of payments; government expenditure and capital formation; income shares; prices; wages; population; and labor composition.

The Oriental Economist. Japan Economic Yearbook, 1980. Tokyo, 1980.

This is a very useful source book on the major characteristics of the Japanese economy. It includes data on: national income and wealth, population and living standards, trade, overseas cooperation, foreign exchange balances, a number of specific industries, and a statistical appendix of major demographic and economic trends.

Patrick, Hugh, and Rosovsky, Henry, eds. *Asia's New Giant*. Washington, D.C.: The Brookings Institution, 1976.

This work is a compendium of articles by scholars from a variety of institutions; it is perhaps the single best source on postwar Japanese economic policies and economic development. It cites almost every major work in the field, and includes a wealth of information. The papers address general characteristics of Japanese economic growth, macro and micropolicies, and the interacting effects of political, social, and cultural factors on Japan's economic growth.

Rix, Alan. *Japan's Economic Aid*. New York: St. Martin's Press, 1980.

This book analyzes the structure and politics of foreign aid allocation in Japan. Its main thesis is that bureaucratic politics were and are the main determinants of Japan's aid and economic cooperation. Rix presents an in-depth analysis of the rigidities of bureaucratic policymaking in Japan, and the structure and style of the domestic aid administration. He argues that the internal dynamics of the aid process were essentially disorganized, and that defense motivations dominated the allocation of aid.

Shimomura, Osamu, ed. *Nihon keizai nani o nasu bekika?* [The Japanese Economy: What Should it Do?] Tokyo: Shiseidō, 1966.

This general work reviews problems facing the Japanese economy, and discusses how they came to pass and what the future holds. It is a useful compendium of views from different perspectives. However, since the book was published when the Japanese economy was still in its high growth phase, many of the arguments and analyses it presents seem outdated.

Shimura, Kaichi. "The Rocky Road to Interest Rate Liberalization." *Economic Eye*, Keizai Kōhō Center (Japan Institute for Social and Economic Affairs), March 1982, pp. 23–26.

The author argues that complete deregulation of Japanese interest rates will remain premature until the national debt is reduced and the financial sector reorganized. In his view, administrative reform has been sluggish, and government efforts to reduce expenditures and voluminous bond issues have been insufficient. He feels that interest rates are unlikely to reflect market conditions; pressures for liberalization are being felt, however, and financial institutions are being forced to continue introducing competitive instruments in response to the diversification of financial assets. Shimura concludes that although liberalization will probably occur, it will not remedy all economic ills.

Shishido, Toshio. *Nihon keizai no seichōryoku* [The Growth Potential of the Japanese Economy]. Tokyo: Diamond sha, 1977.

This general work by a former government official examines Japan's postwar economic growth. In discussing the economic and social implications of high growth and the future direction of the Japanese economy, Shishido argues that investment was the primary engine of Japan's economic expansion.

Statistics Bureau, Prime Minister's Office. *1982 Japan*. Tokyo, 1982.

This is a general reference guide in English on the basic characteristics of Japanese industry, population, and society.

Takahashi, Kamekichi. *Nihon keizai yakushin no konpon yōin* [Basic Factors for the Advancement of the Japanese Economy]. Tokyo: *Nihon Keizai Shimbun*, 1975.

This author takes issue with "standard" interpretations of Japan's economic success. Thus, he emphasizes the following sources of Japanese dynamism: resource allocation and scientific technological changes; readiness to absorb and digest these changes; the legacy of the prewar days; and the dissolution of certain structural and sociological inhibitions to economic growth. Takahashi argues that foreign scholars have ignored the idea that most of the factors that supported economic growth in the postwar period existed in the prewar period as well. He admits that his study of the Japanese economy

was inspired by foreign scholars, and places his analysis of the Japanese economy in the context of Western literature. In contrast to the usual argument that Japan's economic growth was a function of either government intervention or a very vigorous private sector, Takahashi argues that it was attributable to a "new system" that was, in effect, an effort by the Meiji leaders to catch up with and outstrip the advanced nations of the world. He concludes that cooperation between business and government, but not government policies per se, was responsible for Japan's phenomenal success.

U.S. Congress, Joint Economic Committee. *U.S.-Japanese Economic Relations*. Hearings before the Subcommittee on International Trade, Finance, and Security of the Joint Economic Committee, 97th Congress, June 9 and 13, 1981. Washington, D.C.: U.S. Government Printing Office, 1981.

This is a compilation of statements by government and business spokesmen regarding economic and military relations between the U.S. and Japan. The major characteristics of U.S.-Japanese trade, Japanese economic policies and prospects for future trade are summarized, and a series of proposals are offered to improve relations between these two key trading partners. This hearing concentrated on trade issues related to several U.S. industries: semiconductors, automobiles and parts, and agricultural and beef beef products. A good overview of relevant data, rules, and regulations, as of mid-1981 is included. As with all hearings of this type, much of the testimony is special interest pleading, but the coverage is quite broad. Although the material concentrates excessively on the past and upon certain technical barriers to imports to Japan, it also includes several innovative policy recommendations.

II. Trade and Industrial Policy

Abbott, Kenneth W., and Totman, Conrad D. "Black Ships and Balance Sheets: The Japanese Market and U.S.-Japan Relations." *Northwestern Journal of International Law and Business*, Vol. 3, 1981.

The authors address the widespread Western belief that Japan unfairly limits imports. They identify several different levels of barriers to market penetration, and conclude that, in general, the Japanese have acquiesced in the face of U.S. pressures to open their domestic market to foreign goods. The authors argue that the Japanese have been forthcoming with regard to "first-level barriers" (tariffs and quotas); despite this progress, however, they point out that full liberalization has of course not been achieved. "Second-level barriers" to entry (Japanese government policies and practices)—including procurement practices, standards, and testing—have also been liberalized, albeit more slowly. Third-level barriers (cultural patterns and social attitudes) are, more often than not, the unintended product of such private institutions as the Japanese distribution system. The authors argue that the core of third level trade barriers consists mainly of unfamiliar cultural phenomena, the clearest example being language. They also argue that deep cultural and historic factors inhibit direct foreign investment in Japan.

Agency for Industrial Science and Technology (AIST). *Kenkyū kaihatsu jōsei seidō*. [System of Subsidizing R&D]. Ministry of International Trade and Industry, Tokyo, September 1980.

This book reviews government subsidization of high technology products. It describes how technologies are identified, the tax measures used to encourage R&D, the system of loans for the development of domestic technologies, and the organizations that promote industrial research.

Allen, George, *Japan's Place in Trade Strategy: Larger Role in Pacific Region*. London: Atlantic Trade Study, 1968.

This study focuses on the advantages and disadvantages for Japan of a regional free trade organization. The author sketches Japan's international trade patterns—particularly in the Pacific Basin—and argues that there are many reasons to maintain American involvement in the region. Although Japan cannot, in his view, take the lead in promoting free trade in the area, it should continue to give active support to regional economic cooperation, for both political and economic reasons.

Diebold, William, Jr. *Industrial Policy as an International Issue*. New York: McGraw Hill Company, 1980.

A central thesis of this book is that a country's failure to respond to structural changes occurring internationally will seriously damage the world economy and international cooperation. Diebold takes a step-by-step approach in trying to define industrial policy by the way many countries approach problems of structural change, rather than from his own *a priori* idea of a desirable definition. This allows him to discuss with considerable precision the complexities of dealing with the industrial policies of different nations in the context of international negotiations. He presents a general overview of industrial policies in OECD countries, including the use of both macroeconomic and sector-specific policies and the degree to which the implementation of these policies is welcomed or resisted in various countries. Diebold goes on to argue that if the existing procedures of multilateral trade negotiations are increasingly weakened or, worse yet, ignored, the

industrial policies of various nations will soon erode the framework in which trade has been conducted since 1945. This book provides a useful overview of industrial policy and the problems that arise in international negotiations as a result of the differing views of industrial policy taken by various nations.

Echigo, Kazunori. "Tokutei fukyō sangyō antei ringi sochihō no kihonteki seikaku" ["The Basic Nature of the Depressed Industries Law"]. *Kigyō Hō Kenkyū*, May 1978, pp. 2–6.

Echigo questions the policy effects of the Depressed Industries Law. He asks what in fact is "excess capacity" as specified under this law, and argues that only the corporate manager can answer that question satisfactorily. He suggests that the means of liquidating excess capacity under the law is inefficient and argues that industrial adjustment policy should give more consideration to the creative potential and independence of individual firms. Thus, Echigo concludes that cutting capacity should be the responsibility of corporations; if they are unable to do so, then he feels that they must accept the consequences.

Franko, Lawrence G. "Industrial Policies in Western Europe: Solution or Problem?" *The World Economy*, Vol. 11, No. 1, January 1979, pp. 31–51.

Franko argues that the idea of having an explicit industrial policy (or the notion that government should do more for industry than just providing a general legal and macroeconomic framework) has gained prominence since 1945—particularly in response to the perceived effectiveness of French and Japanese policies through the 1960s. In the 1970s, industrial policy began to take on an increasingly protectionist tinge, as Europeans were either unaware of the need for, or resistant to, industrial restructuring. Franko argues that a market solution would have produced an even more protectionist backlash in the EEC than the specific policies that emerged. Moreover, he argues that, to the extent that direct subsidies were the preferred form of protection, they were the least detrimental response to import competition. His point is that direct subsidies cause fewer distortions than other policies, and do not create an illusion of costlessness. Franko concludes with several recommendations; among them are greater efforts to build consensus, more government expenditures and credit allocations for R&D, and avoidance of permanent protection or subsidization.

General Accounting Office. *Industrial Policy: Japan's Flexible Approach*. Report to the Chairman, Joint Economic Committee, U.S. Congress, Washington, D.C.: U.S. Government Printing Office, June 1982.

This report summarizes the major characteristics of Japan's industrial policy. The GAO team argues that Japan's industrial policies, and the specific instruments used to implement them, have changed over time in response to domestic and international economic changes. The authors argue that "Japan undertook restructuring of its economy by encouraging and facilitating investment in industries considered basic to industrialized economies." They also address such specific questions as whether the government continues to control Japanese industrial development.

Giga, Soichiro. "Kōzō fukyō taisaku no shinkyokumen" ["A New Phase of Measures for a Structural Recession"]. *Keizai*, July 1978, pp. 57–63.

The author uses the Depressed Industries Law to discuss what he considers to be a new stage of industrial policy—one aimed at industrial restructuring. He argues that, since Japan has entered a new phase of industrial restructuring, the law should focus increasingly on mergers rather than on decreasing industrial capacity. Although the Depressed Industries Law aims at eliminating excess capacity by creating cartels for specified industries, it has, in Giga's view, positive effects for large companies. He questions the degree to which the Fair Trade Commission is able to adopt an independent position from that of MITI, and summarizes several problems raised by the Depressed Industries Law.

Ingo, Walter, and Jones, Kent A. "The Battle Over Protectionism: How Industry Adjusts to Competitive Shocks." *The Journal of Business Strategy*, Vol. II, No. 2, Fall 1981, pp. 37–47.

This article focuses on the causes and consequences of protectionism. The authors point out that more and more governments are reluctant to follow free trade principles because the political pain of structural adjustment appears too great. Yet such adjustment is necessary, the authors argue, if the competitive health of an economy is to be maintained. Ideally, in their view, government intervention should be limited to cases where the market is not functioning properly. The article also describes the process of implementing protectionist policies and the major factors that contribute to the vulnerability of an industry to structural change; special attention is focused on the steel and consumer electronics industries.

Kodama, Fumio. *A Framework of Retrospective Analysis of Industrial Policy*. Institute for Policy Science Research Report #78-2, Saitama University, Graduate School of Policy Science, July 1978.

In this paper, Kodama tries to gauge the effects of government policy on the development of the

Japanese automobile industry. It is one of the few Japanese works that attempts a quantitative evaluation of this kind. The author examines several specific government policies: import restrictions by means of the foreign currency quota system; tariffs; non-liberalization of foreign capital and the consumer credit system; tax incentives; and direct loans. The author concludes that government policies were quite helpful to the automobile industry.

Magaziner, Ira C., and Hout, Thomas M. *Japanese Industrial Policy*. Berkeley, CA: Policy Papers and International Affairs, No. 15, Institute of International Studies, University of California, 1980.

This paper argues that Japanese companies enjoy growth and profitability because they are low cost and high-quality producers, not because of "unique" aspects of Japanese industrial or business practices. The authors analyze Japan's industrial policy in the context of the basic competitive and economic forces which operate for all firms within the international business system. They also examine the context in which industrial policy is made in Japan; finally, they survey several key economic sectors and the strategies adopted by firms in these sectors.

Mansfield, Edward. "Tax Policy and Innovation." *Science*, Vol. 215, March 12, 1982, pp. 1365–1371.

This short article provides an excellent summary of what is known about the impact of tax policy on innovation in the United States. In Mansfield's view, basic economic analysis and rudimentary statistical studies permit useful statements to be made about the tax policy changes, but the lack of detailed work precludes dependable quantitative assessments of the impact of tax changes on the rate of innovation. His principal and rather negative conclusion is that very little is known about the impact of tax policy on innovation—even in the U.S. where the issue has been addressed more intensely than elsewhere.

Ministry of International Trade and Industry. *Hachijū nendai no tsūsan seisaku bijon* [Vision of Trade and Industrial Policy for the 1980s]. Industrial Structure Council. Tokyo, April 1980.

This study is the most recent "vision" published by MITI; it reviews the overall prospects and problems facing the Japanese economy. An official government document, the report presents an overview of conventional wisdom pertaining to the direction of the economy, as well as the areas that supposedly need specific attention from the private sector and government.

Mizuno, Takeshi. "Sangyō kōzō seisaku e no fushin" ["Doubts on Industrial Structure Policy After the Passage of the Depressed Industries Law"]. *Kigyō Hō Kenkyū*, May 1978, pp. 7–11.

The author criticizes the Depressed Industries Law. In doing so, he relies heavily upon material from the Fair Trade Commission, other Japanese economic organizations, and leading academicians.

Nakamura, Takahide. "Nihon ni okeru sangyō seisaku no tokushoku to hyōka" ["An Evaluation of the Peculiarities of Japan's Industrial Policy"]. *Shukan Tōyō Keizai*, May 1974, pp. 58–64.

The author examines industrial policy during the 1950–1970 period, arguing that industrial policy has been focused too narrowly on economic growth, especially in the heavy and chemical industries. He points out that, during this period, strong control was exercised over foreign currency and over industrial investment. The author argues that controlling the allotment of foreign currency was a better way to promote the heavy and chemical industrials than tariff policy. He also feels that government policies such as low interest loans from the Japan Development Bank, special depreciation allowances, and tax exemption for export-oriented goods had a "pump-priming" effect on capital investment.

Nihon Keizai Shimbun. "Kōzō fukyōhō no daiga." [Replacing the Law for Structurally Depressed Industries]. February 9, 1982.

According to this article, MITI has decided to create a new law tentatively called "Temporary Measures to Revitalize Specific Industries" aimed at rebuilding hard-hit basic materials industries such as aluminum and petrochemicals. This law would allegedly replace one that will expire in June 1983. The following points are said to be under discussion:

1) A reduction in the burden on high energy material costs, a reduction in the petroleum tax on domestic naphtha, and the introduction of an electricity rate system
2) Exemption from the Anti-Monopoly Law to allow greater industry cooperation in reducing capacity.
3) Providing favorable financing by consolidation efforts and the creation of a special credit fund.

MITI would coordinate these various plans with the Ministry of Finance and the Fair Trade Commission.

OECD. *The Case for Positive Adjustment Policies* Paris, June 1979.

This volume is a collection of documents on this subject that were discussed at a meeting of OECD committees in 1978.

Okumura, Hiroshi. "Tokutei fukyō sangyō antei ringi sochi hō no ginkō shōsha kyūsai hōteki seikaku" ["The Depressed Industries Law Can be Considered a Relief Act for Banks and Trading Companies"]. *Kigyō Hō Kenkyū*, May 1978, pp. 22–26.

The author explains the role played by banks in the postwar period, focusing on the trust funds system, the accumulation of bad debts, and the collection of bad debts. He also examines the benefits that banks and trading companies can receive through the Depressed Industries Law.

Overmer, W., et al. *Government Procurement Policies and Industrial Innovation*. Delft: The Netherlands Organization for Applied Scientific Research, 1978.

This report examines the effects of government procurement policies on innovation in industry, drawing on experience in the U.S., Great Britain, Canada, Sweden, France, and Japan. Some of its major conclusions are: (1) procurement policy should be seen as an integral part of innovation policy; (2) public demand should be articulated in ways that encourage effective industry response; (3) experience stemming from military procurement should be applied to other parts of the public sector; (4) since the effectiveness of public procurement is highly dependent on the way the government is organized, a lack of in-house government capability is a major limitation on the use of procurement for innovation.

Ramseyer, Mark J. "Comments on Letting Obsolete Firms Die: Trade Adjustment Assistance in the United States and Japan." *Harvard International Law Journal*, Vol. 22, No. 3, Fall 1981, pp. 595–619.

This excellent work compares U.S. and Japanese trade adjustment assistance programs. Arguing that Japanese assistance measures aimed at workers and communities have been more effective in facilitating adjustment than those targeted at industry, Ramsmeyer concludes that Japanese measures are more effective than their American counterparts. Thus, he argues that U.S. adjustment assistance programs have served primarily as a supplementary unemployment program for workers and an income maintenance program for firms. In Ramseyer's view, U.S. experience suggests that Congress should make various improvements in the 1974 Trade Act; it could for example shift much responsibility for administering adjustment assistance programs from state governments to the federal government. He feels that the Japanese experience suggests that even more fundamental measures are in order, such as the creation of a new government department that would organize and collect economic data, and a program that would encourage workers to move into more productive areas. Ramsmeyer feels that although the limitations of the Japanese model should not be minimized, it does more to shift labor and capital away from depressed industries into growth areas than does the U.S. system.

Reich, Robert B. "Making Industrial Policy." *Foreign Affairs*, Spring 1982, pp. 852–882.

This article draws heavily on a recent book by the same author entitled *Minding America's Business* (see p. 205 above). In his view, since the U.S. has entered a slow growth period and foreign trade has further depressed many American industries, careful government intervention to provide industry with various incentives to adjust to these pressures is needed more than ever. Reich argues along the following lines. The problem is not that domestic industries in the U.S. are declining per se; this is natural. The problem is that prosperous new industries have not emerged. Instead, many industrialized countries (including the U.S.) that are experiencing declines are severely hurt by fiscal and monetary policies designed to curb inflation. Protectionist tendencies tend to prosper in such an environment. In the U.S., protectionist moves have resulted in many temporary measures to help declining industries; yet these measures are not linked with mandatory industry adjustments. They tend to be stop-gap measures, which have the effect of either keeping declining industries afloat or providing enough capital to diversify out of these declining businesses—while leaving workers and depressed communities behind. Citing positive examples of government intervention and assistance in West Germany and Japan, Reich suggests that the U.S. should try various kinds of cooperative arrangements between business, government, and labor in an effort to facilitate adjustment.

Ueno, Yūya. "Waga kuni sangyō seisaku no hassō to hyōka" ["The Ideas Behind and an Evaluation of Japanese Industrial Policy"]. *Kikan Gendai Keizai*, Vol. 20, December 1975, pp. 6–49.

The author surveys various forms of government intervention in the Japanese economy and analyzes how they have evolved over time. He argues that Japanese industrial policies are based on MITI's own economic planning. Ueno also discusses the theory behind industrial policy, the formation of economic planning policies, the promotion of strategie industries, and the goal of fostering "mass production systems."

III. Sector and Industry Studies

BA Asia, Ltd. Consulting Group. *The Japanese Semiconductor Industry, 1980*. Hong Kong, 1980.

This is an extremely useful systematic analysis of the Japanese semiconductor industry. It examines demand and supply conditions as well as the performance of the ten major semiconductor producers.

Fujii, John. "Fighting for Market Share." *Journal of the American Chamber of Commerce in Japan*, March 1982, pp. 29–36.

This article presents an overview of the performance, measured in market shares, of American computer companies in Japan; it includes IBM, Burroughs, Honeywell, NCR, Sperry-Univac, Digital Equipment, and Control Data Corporation. Interestingly enough, each company contends that it is doing well. They agree that the key to success in Japan lies in being competitive.

Ike, Brian. "The Japanese Textile Industry: Structural Adjustment and Government Policy." *Asian Survey*, May 1980, Vol. 20, No. 5, pp. 532–552.

This article shows how changes in international trade have affected the Japanese textile industry. The author begins with the theoretical aspects of adjustment assistance and then discusses the specific attempts by the Japanese government to facilitate the adjustment process. He concludes with an assessment of the possibilities for finding multilateral solutions to adjustment problems. The fact that the Japanese textile industry remains highly fragmented is a clear indication, in Ike's view, that the industry has been overprotected. Indeed, he argues that government measures have hindered its structural adjustment. Ike suggests that, despite supposedly "unique" Japanese business-government relations, various lobbying groups play much the same role in Japan as in any other country; thus, in a period of slow growth, political pressures for protection mount in Japan. Moreover, despite the need for multilateral solutions to industrial adjustment problems, Ike concludes that closer international cooperation remains remote.

Industrial Structure Council. "Sangyō kōzō shingikai: kagaku kōgyō bukai." [The Industrial Structure Council Chemical Industry Subcommittee]. Tokyo, December 2, 1981.

This is a progress report on current conditions in the Japanese chemical industry. It provides useful demand and supply data, and forecasts through the year 1990. Since this document was written by a prestigious group, its forecasts tend to represent a consensus of government and industry.

Japan Federation of Shipbuilding and Engineering Union. *The Workers in the Shipbuilding and Engineering Industries*. Tokyo, July 1981.

This document is one of the few in both English and Japanese that deals with working conditions in the Japanese shipbuilding and engineering industries.

Japan Federation of Workers and Engineering Workers Union. *Labor Unions Adapt to Structural Change in the Shipbuilding Industry*. Tokyo, 1980.

This document, in English and Japanese, is a very readable discussion of the adaptation of unions to the structural changes that have occurred in the Japanese shipbuilding industry in the aftermath of the collapse of the world tanker market. It contains useful data on the basic adjustment measures adopted by the industry and the unions.

The Japan Petroleum Association. *Sekiyu kagaku no genjyō*. [Conditions in the Petroleum Industry]. Tokyo, 1981.

This useful document reviews current conditions in the petroleum and petrochemical industries of Japan. It includes an overview of petrochemical complexes, demand/supply data, the market structure of the industry, a user breakdown, and demand by sub-industries.

Juster, Kenneth I. "Foreign Policy Making During the Oil Crisis." *The Japan Interpreter*, Vol. 111, Winter 1977, pp. 293–312.

This article examines Japanese bureaucratic politics and foreign policy during the oil crisis. The author presents a blow-by-blow account of Japanese bureaucratic responses to the oil crisis, including various maneuvers by Japanese oil companies, MITI, the Prime Minister, the Foreign Ministry, and the Liberal-Democratic Party. He argues that, contrary to its usual postwar pattern, Japanese foreign policy during the oil crisis did not follow the American lead. Juster finds that no unified view of Japan's national interest was discernible in the wake of the oil shock. He analyzes the decision making process in Japan, and argues that its locus shifts according to the degree of politicization of a given issue.

Kobayashi, Koji. *C&C to sofutouea* [C&C and Software]. Tokyo: The Simul Press, 1982.

This book by the chairman of Nippon Electric Company is a sequel to an earlier book published in 1980, entitled *C&C*. The author stresses the importance of the human element in computer and communications systems, and points to areas that he feels are important for the internationalization of C&C. He also discusses such vanguard technologies as robotics, space technology, office automation, voice input/output devices, optoelectronics and microelectronics. Finally, Kobayashi outlines the relationship between C&C and software, C&C and the world, and C&C and other businesses.

Lamb, John. "1982, a Critical Year for Britain." *New Scientist*, January 28, 1982, pp. 221–224.

This article describes past and prospective efforts by the British government and British firms to work together "as never before" to rush Britons into high technology fields such as computers, word processors, and fiber optics. A brief overview of innovations in office automation (such as word processors) and electronic mail (which includes messaging, storing, and forwarding) is included. Problems associated with some of these new areas, such as a shortage of skilled people who can operate these systems, are also described.

Masuda, Tatsuo. "Nihon no sekiyu kagaku kōgyō to sekai no sekiyu kagaku kōgyō no yukue." ["The Future of Japan's Petro-Chemical Industry and the World's Petrochemical Industry"]. *Tsūsan Jiyanaru*, December 1981, pp. 990–96.

The author reviews the condition of Japan's petrochemical industry and the efforts being made by the Subcommittee on Petrochemicals of the Industrial Structure Council to counter its declining competitiveness. Masuda also summarizes recent developments in the world petrochemical industry and various lessons that Japanese producers could learn from Western companies. He argues that there is too much competition in Japan, and suggests that Japan should obtain raw materials at lower prices.

Ministry of International Trade and Industry. *Shōwa 50 nendai no enerugi* [Energy, 1975/1984]. Tokyo, 1975.

This is a useful background document summarizing Japanese government short, medium, and long term energy forecasts. It includes a government assessment of the changing international environment for energy, new directions in Japan's energy policy, and a fairly extensive statistical appendix.

———. *21 Seiki e no enerugi senryaku*. [Energy Strategy in the 21st Century]. Tokyo, October 1979.

This work takes a fairly lengthy look at various energy-related issues, including: demand and supply conditions, government efforts to promote energy conservation and diversification, and measures that the Japanese government and industry have adopted to secure funds for energy-related expenditures. It includes projections for nuclear power, coal, and other energy sources.

———. *Enerugi, 1981* [Energy 1981]. Tokyo, August 1981.

This book surveys and explicates various energy-related issues in a very chatty manner.

———. *80 nendai enerugi no gyūkyū tenbō* [Survey of Demand and Supply of Energy in the 1980s]. Tokyo, December 1981.

This overview of recent thinking about energy policy in Japan is a useful source. It includes guidelines for the introduction of alternative energy processes in factories where energy consumption is high, summarizes trends of energy consumption in major Japanese industries, and surveys Japanese energy supply and demand conditions.

———. "Kiso sōzai sangyō no tenbō to kadai." [The Outlook and Problems of the Basic Materials Industry]. Tokyo, 1981.

This book outlines conditions facing the Japanese basic materials industry and discusses factors that have led to its decline. Thus, the effects of energy costs are evaluated, demand/supply conditions are outlined, competition from other countries is described, the legislative framework is discussed, and future trends are analyzed. MITI argues that the problems facing the basic materials industries should be treated as national economic problems. Concrete suggestions include: a reduction in energy costs, an extension of the tax-exempt status of imported naphtha, and more active use of a joint petrochemical material importing company.

National Research Council, Computer Technology/Resources Panel of Computer Science and Engineering Board. *The Computer Industry in Japan and its Meaning for the United States*. A study commissioned by various government agencies coordinated and overseen by the Bureau of Intelligence and Research, U.S. Department of State. Washington, D.C.: U.S. Government Printing Office, 1972.

This study is an interesting, if dated, summary of the prospects for the Japanese computer industry as of the early 1970s.

National Research Council. *Outlook for Science and Technology*. San Francisco: W.H. Freeman and Company, 1982.

This report is a compilation of articles by American scholars on major areas of science and technology, world demography, human diseases, nutrition, the science of cognition, ecology, chemical synthesis of new materials, developments in mathematics, industrial research, and prospects for new technologies. This volume is a very useful reference guide for the layman.

Nihon Keizai Shimbun. Fukugō sentan sangyō [Complex Leading-Edge Industries]. Tokyo, 1980.

This book is a useful compilation of articles on

Japanese high tech industries that originally appeared in the *Nihon Keizai Shimbun*. It argues that the future growth industries for Japan are the so-called compound or hyphenated industries. The authors argue that, if Japan were to develop these industries vigorously, no other country could match the products that would result. Furthermore, they believe that moving into these industries would help to solve other problems facing Japan. Thus, they argue that increased technological innovation and application of technology processes will not lead to unemployment because the negative effects of electronics on the production process can be absorbed by shifting workers within and among companies. The authors also point out that the traditional distinction between public and private activities in the economy is less clear now than in the past, and that some areas traditionally controlled by the government are being absorbed by the private sector.

Nihon Keizai Shimbun. Shin sōzai kakumei. [New Materials Revolution]. Tokyo, 1981.

This book is a compilation of articles that first appeared in the *Nikkei Sangyō Shimbun*. It argues that if industry and government were to work together to generate new materials (in areas such as biotechnology), the result would be a stronger Japanese bargaining position in obtaining natural resources. The book summarizes research efforts in this field, and concludes that innovation in the materials sectors would enhance Japan's future prosperity and security.

Nye, Joseph S. "Energy and U.S.-Japan Relations." *Appendix to the Report of the Japan-U.S. Economic Relations Group*. The U.S.-Japan Economic Relations Group, April, 1981, pp. 61–114.

This report is a very useful overview of energy issues. It deals with future demand and supply conditions in energy, the role of energy in U.S.-Japan relations, and the evolution of Japanese and U.S. energy policies. The author also makes policy recommendations regarding nuclear energy, coal, and oil.

Ozawa, Terutomo. "Government Control Over Technology Acquisition and Firms' Entry into New Sectors: The Experience of Japan's Synthetic Fiber Industry." *Cambridge Journal of Economics* 4: 133–146, 1980.

This paper attempts to explain the rapidity with which Japan developed its synthetic fiber industry in the early 1950s. It focuses on how Japanese government control over foreign technology acquisition was instituted under a system called the "staggered entry" formula. Ozawa points out that, in the prewar and wartime period, Japanese made great strides in perfecting the manufacture of various fibers. From 1946 to 1949, the Japanese manmade fiber industry formally decided to pool technological capabilities and disseminate available technologies among member firms. In 1949, the Ministry of Commerce and Industry (now MITI) developed a program for developing and promoting the synthetic fiber industry. This was the first "staggered entry formula." It specified that one company should be selected as a first entrant for each of the fibers covered, and, as the market developed, other firms should be assisted to enter the industry in tandem. Ozawa concludes that this strategy was effective in the short run because Japanese producers were dependent on the acquisition of foreign licenses and because foreign patent holders preferred exclusive licensing arrangements. The purpose of staggered entry was to promote plants of efficient scale while avoiding excess competition. Ozawa concludes, however, that over the long run, this staggered entry formula in fact created rather than avoided overcapacity and excess competition.

Peltu, Malcolm. "Micro-Electronics and Unemployment." *New Scientist*, January 28, 1982, pp. 226–228.

This article discusses British government efforts to promote an "information revolution" and the possible employment effects of this revolution. The government is criticized for inconsistency in that it claims to be committed to the technological revolution, but nevertheless has closed many industry training boards on the grounds that the private sector should take responsibility for manpower training. The author argues that the government has a responsibility to help society reduce the lag between the time when some jobs are eliminated because of high technology and the creation of new jobs by the introduction of that same technology.

Prindl, Andreas R. *Japanese Finance: A Guide to Banking in Japan*. New York: John Wiley & Sons, Ltd., 1981.

This short volume provides a concise description of Japanese money, banking, and credit markets. In addition, Prindl offers operational guidelines for financial officers of multinational corporations and banks who plan to operate in the Japanese market.

Radnor, Michael, et al. *The U.S. Consumer Electronics Industry and Foreign Competition*. Evanston, Il.: Northwestern University, Center for Interdisciplinary Study of Science and Technology, Report No. EDA 80-067, 1980.

This paper is part of a two-phase study of the impact of imports on the U.S. color television and

CB radio industries. The authors discuss U.S. government responses to foreign competition, review trends in these industries, and then compare Japanese and U.S. policies toward these industries. The purpose of the study is twofold, first to analyze the reasons for the problems faced by U.S. manufacturers of consumer electronics products, and second, to recommend industry and government strategies to deal with these problems. The major recommendations are: (1) improve the general climate in the industry; (2) strengthen trade and technology policies; (3) make consumer electronics a priority sector; (4) enhance key capital and human resources; (5) improve operating processes and postures; (6) identify and pursue future opportunities; and (7) promote international collaboration.

Shelp, Ronald Kent. *Beyond Industrialization*. New York: Praeger Publishers, 1981.

The author, an executive of American International Group, Inc., addresses the role of service industries in the U.S. economy, and argues that the global service economy is an area of great dynamism and future growth potential. He argues that many of the traditional means of measuring the role of services in domestic and international markets fail to reflect the tremendous growth that has already occurred. In his view, the process of negotiating the role of service industries in international commerce has only just begun. Shelp feels that service issues should be integrated into continuing international commercial discussions.

Stobaugh, Robert B. "The Oil Companies in the Crises." *Daedalus*, Fall 1975, pp. 179–203.

This article is an excellent analysis of the responses of the Arabian American Oil Company (Aramco) to the oil crisis. Stobaugh describes various pressures that oil companies faced in their efforts to allocate oil "fairly"—pressures that emanated not only from their own distribution networks and customers, but also from various governments. He points out that, of all the industrialized nations, Japan fared the best in terms of oil supplies. In examining why various nations fared differently in terms of oil allocation, Stobaugh suggests that the answer lies in a combination of "random events, imperfections in data, and varying degrees of measurement of shortage." He concludes that the companies did a fairly efficient job of allocation.

Ueno, Hiroya. "Materials Industry in Recession." *Economic Eye*, Keizai Kōhō Center (Japan Institute for Social and Economic Affairs), March 1982, pp. 13–17.

The author points out that the materials industry is in a state of chronic recession caused by sluggish demand, growing pressure from competitive imports, and overcapacity. The hard-hit sectors in this category include: oil and raw materials, paper and pulp companies, petrochemical producers, and fertilizer manufacturers. The deflationary effects of higher oil prices were reinforced, in Ueno's view, by an economic policy of restraining aggregate demand in order to stabilize prices; this hurt the materials industries and certain other industrial sectors. What is needed, he argues, is a program of public investment and consumer spending aimed at stimulating domestic demand; he feels that an appreciation of the yen would also help. The author concludes that, while Japan does not have the power to influence the world price of oil, it can minimize losses by readjusting energy costs in specific sectors.

U.S. Department of Commerce, International Trade Administration. *Report on the U.S. Semiconductor Industry*. Washington, D.C.: U.S. Government Printing Office, September 1979.

This report is an overview of domestic and international developments influencing the emergence and growth of the U.S. semiconductor industry. Although initial government endorsement of research and product procurement for defense and space made possible the modern silicon industry, the authors show that the role of industry and government are now reversed. They argue that the U.S. semiconductor industry stands at a crossroads: the short term future of the U.S. semiconductor industry appears favorable, but the long term is far less clear. Thus, the authors expect Japan to increase its export efforts and gain a larger share of the U.S. and European markets.

IV. Other

Doi, Teruo. *The Intellectual Property Law of Japan*. Rockville, Md.: Sijthoff and Noordhoff, 1980.

This book presents a useful analysis of the Japanese intellectual property law. It addresses *inter alia* the patent system, unpatented know-how, trade secrets, unfair competition, copyright, regulation of licensing agreements under the Anti-Monopoly Law, and trademarks.

Fukui, Haruhiro. *Party in Power: The Japanese Liberal Democrats and Policy Making*. Berkeley and Los Angeles: University of California Press, 1970.

In this study, Fukui examines three case studies of interaction in policy making. They are: compensation for former landlords, revision of the constitution, and relations with China.

The Japan Institute of International Affairs. *White Papers of Japan 1980 to 1981*. Tokyo, 1982.

A compilation of papers on Japanese foreign policy, defense, economics, trade, and other areas, this is very useful reference material.

Ministry of International Trade and Industry. "Kijyōhō no kaisetsu." [An Explanation of the Law on Extraordinary Measures for the Promotion of Specific Machinery and Information Industries]. Tokyo, 1980

This paper provides a very useful description of the difference between laws, cabinet orders, ministerial orders, and regulations. It also describes the various legal mechanisms applied to the aircraft and machinery industries under the Machinery and Information Law.

Pempel, T.J., ed., *Policy Making in Contemporary Japan*. Ithaca and London: Cornell University Press, 1977.

A compendium of material on policymaking in contemporary Japan, this is perhaps the most comprehensive book of its kind in English. It includes a review of the literature on this subject, and presents several case studies. The author argues that, contrary to conventional wisdom, policy making in Japan is extremely heterogeneous. Thus, in his view, although the government is sometimes capable of major innovations, policy making is often quite rigid.

Steslicke, William E. *Doctors in Politics: The Political Life of the Japan Medical Association*. New York: Praeger 1973.

By focusing on the medical profession, this excellent study analyses the influence of pressure group politics on policy making in Japan. It is one of the few in-depth analyses of lobbying in Japan.

Tsurumi, Yoshi. "Japan." *Daedalus*, Fall 1975, pp. 113–129.

This article presents a useful in-depth analysis of Japanese responses, both bureaucratic and political, to the oil shock. Tsurumi argues that MITI initially responded to the increases in oil prices with "hesitation and bewilderment." In his view, although MITI first attempted to weaken the authority of the Fair Trade Commission, by the end of 1974 both MITI and the FTC had emerged as "renewed power centers in Japanese domestic policies." Tsurumi contends that the oil crisis jolted Japan into assuming a more independent foreign policy. The article also presents a historic overview of the oil refining industry in Japan and competition between Japanese and American firms.

About the Authors

JIMMY W. WHEELER, MERIT E. JANOW, and THOMAS PEPPER are members of the professional staff of Hudson Institute, a policy research organization with headquarters in Croton-on-Hudson, New York.

Mr. Wheeler is an economist specializing in the application of economic analysis to public policy and corporate planning issues. He was project director of an earlier Hudson study of industrial structure issues, also conducted for the Department of State, and co-editor (with Irving Leveson) of *Western Economies in Transition: Structural Change and Adjustment Policies in Industrial Countries* (1980), which grew out of the study.

Ms. Janow is a policy analyst specializing in political economy and Asian studies. She has contributed to previous Hudson studies of industrial structure shifts in the Asia-Pacific region and to Hudson's Corporate Environment Program.

Mr. Pepper is a policy analyst specializing in international politics and economics and Director of Hudson's Corporate Environment Program. He was Director of the Institute's Asia-Pacific Office in Tokyo for four years, and co-author (with Herman Kahn) of *The Japanese Challenge: The Success and Failure of Economic Success* (1979) and *Will She Be Right? The Future of Australia* (1980).

Midori Yamamoto is an economist and research associate in Hudson's Asia-Pacific Office.