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International Competitiveness

*Interaction of the Public
and the Private Sectors*

Edited by
Irfan ul Haque

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International Competitiveness

Interaction of the Public and the Private Sectors

Collected papers from an EDI Policy Seminar
held in Seoul, Republic of Korea
April 18–21, 1990

Edited by
Irfan ul Haque

The World Bank
Washington, D. C.

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PREFACE

A senior policy seminar on "International Competitiveness: Public Sector-Private Sector Interface" was held in Seoul, Republic of Korea, April 18-21, 1990. This seminar was organized jointly by the Economic Development Institute of the World Bank and the Korea Development Institute. Policy seminars provide a forum for an informal exchange of ideas and experiences among policymakers from different countries, leading experts in development, and staff from the World Bank and collaborating institutions with respect to major issues of development policy. This seminar was unique in that leaders from the private sector in the participating countries were also invited.

This volume includes the seminar report and background papers prepared by the resource persons for presentation at the seminar. The seminar report (chapter 1) summarizes the issues raised during the three days of discussions which might be of interest to a wider audience. The purpose of the report is to capture the essence of the discussion and to bring out the main areas of agreement or disagreement that emerged among those participating.

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INTERNATIONAL COMPETITIVENESS: PUBLIC SECTOR/PRIVATE SECTOR INTERFACE

REPORT ON THE SEMINAR

Irfan ul Haque

Background

Rapid and sustained growth in international trade has been an outstanding feature of the post-World War period. This expansion was broadly based; it included trade among developed countries, between developed and developing countries, and among developing countries themselves. Manufactured exports rose much faster than primary product exports, and today account for nearly three-quarters of world trade in visibles. International trade therefore is no longer concentrated on an exchange of primary products for manufactured products, with developing countries the principal suppliers of the first group of products and the developed countries the second. Indeed, countries appear to trade increasingly in broadly similar products.

Over the last two decades, a number of developing countries have emerged as highly successful exporters of manufactured products, with an increasing range and sophistication of products exported. This has, on the one hand, created considerable tension in the international trading environment as most developed countries have witnessed an erosion of their market shares, and, on the other, set an important example for other developing countries to emulate. This perhaps best explains why for every country today—developed, developing, or socialist—international competitiveness has become so critically important. Since a country's economic success and influence depend to a large extent on its ability to expand export earnings, the competition in world trade has intensified over the years. This keen pursuit for expanding exports, without an equally strong desire to import, has come to be called "new mercantilism."

Developing countries aspire to create a strong industrial base and to expand their manufactured exports. However, notwithstanding some outstanding successes, the actual record of most of them in this respect has been, if not dismal, quite disappointing. A symptom as well as a cause of this failure has been the inability of these countries to create an internationally competitive industry. Structural adjustment programs, which were at the center of the development policy debate during the 1980s, aim at creating a viable, competitive, productive, economic base. However, questions have been raised as to the adequacy, indeed effectiveness, of the programs in realizing this aim in the adjusting countries. They have been criticized for placing too much emphasis on "getting the prices right" to the neglect of other things that governments ought to be doing. It is generally recognized that exchange rate adjustment and import liberalization are important in improving incentives for the tradable sectors, and exports of many countries have shown strong recovery following their introduction. But this recovery, it is argued, cannot be sustained unless some other steps are taken to support export activity, and more generally, to

improve a country's international competitiveness, especially where it concerns industrial products. What these other steps are, and whether governments should be responsible for them, is currently an area of considerable debate not only in developing countries, but also in many developed countries (notably the United States). Thus the issue of international competitiveness is intimately linked with the issue of the respective roles of public and private sectors.

While in most developing countries public and private sectors do not operate as adversaries, there is nevertheless considerable tension between the two. A great deal of attention has been given in recent years to better defining the respective roles of the two sectors and establishing practices and institutions to harmonize their interface. Nevertheless, governments often find that their policies and reforms to develop internationally viable industry are frustrated through lack of private sector support, while the private sector tends to view government actions and incentives either as inadequate or as misconceived. There thus appears to be a need to improve mutual understanding of public and private sectors on the goals and constraints each side faces and to foster positive synergy between the two sectors in accomplishing structural adaptation and transformation of their economies.

The Senior Policy Seminar on "International Competitiveness: Public Sector/Private Sector Interface" was conceived to help in this process. The seminar was jointly organized by the Economic Development Institute of the World Bank and the Korean Development Institute and was held in Seoul, Republic of Korea, April 18-21, 1990. It was aimed at the industrially more advanced developing countries. Senior policymakers from the public sector and leaders of the private sector in nine developing countries from Asia, Latin America, and Europe attended the seminar.

The following section provides a survey of the recent debate on international competitiveness. It is followed by an overview of the principal issues and themes addressed at the seminar. The final section sums up the broad conclusions that could be drawn from the discussions. The seminar calendar and the list of participants and resource persons are given in the Annex.

International Competitiveness: Survey of a Debate

This brief survey of the recent debate on international competitiveness is intended to provide the backdrop to the discussions that took place at the seminar. The purpose here is to outline the major questions that have been raised in recent time rather than to provide a comprehensive and in-depth review. The debate, which has centered around the applicability and relevance of the traditional international trade theory and its policy implications to today's circumstances, influenced the choice of subjects addressed during the seminar. The increased tensions in the international trading environment and the rapid technological progress reflected in new products, new processes, and increased factor productivity have been the principal forces behind the reassessment of received wisdom.

Comparative Advantage Doctrine

The traditional explanation for international trade and specialization—or international competitiveness—among countries rests on the doctrine of comparative costs, originally enunciated by David Ricardo, but subsequently developed by several neoclassical economists, notably, Heckscher and Ohlin. According to this doctrine, the pattern of trade and specialization depends on the relative costs of production, not absolute costs, which in turn are determined by a country's factor endowments. Specialization on the basis of comparative cost is inherently efficient and is synonymous with the comparative advantage of a country. Engaging in international trade therefore is of mutual benefit to all countries. Each country can find on the basis of its factor endowments at least one product in which it can specialize and trade to its advantage. Furthermore, international trade in products can be a substitute

for the movement of factors of production in that it tends to equalize factor rewards across national frontiers. This implies that under free trade, the terms of trade would never be "unfair," there could not be economic exploitation of one country by another, nor could there be immiserization of a country arising out of international trade.

The doctrine of comparative advantage has been one of the most powerful influences on economic policymaking and international relations in recent history. Despite its pervasiveness in real life, protection or the use of commercial policy in defense of domestic interests is generally considered harmful to economic well-being, and has not been accorded respectability in the economics profession. Protection of infant industry is conceded, albeit reluctantly and only under special circumstances. While GATT recognizes the case for "special and differential treatment" of developing countries, they are nevertheless urged to reduce protection and liberalize their markets. In fact, an increasing number in recent years have heeded this advice.

The reasons for the evident influence of the comparative costs theory are both theoretical and empirical. Theoretically, free trade outcomes are shown to be generally superior to the results of government interference, a conclusion that has an intuitive as well as common sense appeal. As noted above, free trade encourages more intensive use of the factor of production in relative abundance in a country, which leads to a more efficient allocation of resources. It also makes sense for labor-abundant countries to export labor-intensive products, and for capital-abundant countries to export capital-intensive products.

At the empirical level, there is much evidence that confirms specialization in international trade based on factor endowments. There is also considerable evidence that protection has not done much to create efficient industry. Indeed, on the contrary, the infant industry that was protected from international competition more often than not failed to become self-supporting. The extent and frequency of market failure—that is the main justification for trade intervention—are considered to have been exaggerated. In fact, protection is held to have encouraged rent-seeking behavior on the part of investors and civil servants and to have distorted investment decisions, eroded productive structures, and generally contributed to economic and political instability.¹

Problem of Explaining NIEs Success

Notwithstanding the weight of the theory and evidence, the most successful cases of industrialization in the postwar period—notably, Japan and Korea, but also other newly industrialized economies (NIEs)—do not seem to conform to the traditional model of specialization, and certainly did not follow the policies it prescribes. The emphasis in earlier industrialization was on import substitution, which was fostered by all manner of government intervention, covering commercial policy, fiscal incentives, credit allocation, etc. Japan is said to have "succeeded by doing everything wrong according to standard theory."² During the early phases of industrialization, it consciously promoted industry in which it did not appear to have comparative advantage, as is evident from the following observations of an ex-Vice Minister of the Japanese Ministry of International Trade and Industry (MITI) quoted in an OECD report:

The Ministry of International Trade and Industry decided to establish in Japan industries which required intensive employment of capital and technology, industries that in consideration of comparative cost of production should be most inappropriate for Japan, industries such as steel, oil refining, petrochemicals, including electronic computers. From a short-term, static viewpoint, encouragement of such industries would seem to conflict with economic rationalism. But, from a long-range point of view, these are precisely the industries

1. Anne O. Krueger, "The Political Economy of the Rent-Seeking Society," *American Economic Review*, 1974

2. Alan S. Blinder, "There are Capitalists, Then There are the Japanese," *Business Week*, October 8, 1990.

where income elasticity of demand is high, technological progress is rapid, and labor productivity rises fast. It was clear that without these industries it would be difficult to employ a population of 100 million and raise their standard of living to that of Europe and America with light industries alone; whether right or wrong, Japan had to have these heavy and chemical industries.³

The same is more or less true of other NIEs. They all relied heavily on protection, and government typically played a key role in targeting and fostering industry. However, the success of such intervention varied enormously across countries and over time. It can be argued that these countries' performance would have been even better if they had avoided interference in trade, and there is no dearth of examples of misguided or failed investments. However, being a counter-factual, this is not a provable proposition.

Another way of explaining their success is to argue that while relying on protection, these countries ensured that their trade regimes were neutral between import-substituting and export activities, i.e., protection of importables was not at the expense of incentives for exportables.⁴ This still enabled them to specialize on the basis of their comparative advantage. However, there are some conceptual and empirical problems with the distinction drawn in the literature between import-substitution and export-promotion strategies. Conceptually, it is rational for a country to go through a period of import-substitution as the relatively scarce factor—capital—becomes more abundant through investment. As noted above, the empirical evidence also points to a heavy reliance on import-substitution by countries during the earlier phases of industrialization. Nevertheless, the countries that neglected exports and relied exclusively on import-substitution, and expected thereby to solve their balance of trade problem (for example, India), were disappointed and found that the strategy became sooner or later unsustainable.

There are others who view the Japanese and Korean experiences very much as an exception to the general rule. They concede the power and influence of government in the successful industrialization experience of these countries, but they argue the same results would not obtain in other countries (e.g., in Sub-Saharan Africa) because of the "softness" of state.⁵ Such countries have weak political institutions, low administrative capacity, and the risk of "government failure" is high. In these circumstances, it is considered far better to adopt a *laissez-faire*, hands-off approach in industrial policy. However, this seems to be somewhat of a forced conclusion since countries differ as to the softness of state, even if it could be defined in some precise way. This means that the appropriate government policy has to be defined in the context of individual countries. In any case, there are few examples in history when governments did not—for better or for worse—actively back domestic economic interests.

Difficulty in explaining the success of the NIEs in terms of traditional economic theory, the poor performance of the erstwhile industrial leaders (notably the United States), and continuing advocacy and popular appeal of commercial policy to protect and foster domestic industry have stimulated theoretical and empirical research on the subject. The most significant recent theoretical development has been the birth of the so-called "strategic trade theory," which is basically concerned with the optimal use of commercial policy and other forms of taxes and subsidies to achieve a country's strategic ends.⁶ It does not depart in any fundamental sense from the traditional theory as regards the basis of specialization, but rather attempts within the same framework to deal with situations characterized by

3. OECD, *The Industrial Policy of Japan*, Paris 1972.

4. World Bank, *World Development Report 1987*, Oxford University Press

5. Tyler Biggs and Brian Levy, "Strategic Interventions and the Political Economy of Industrial Policy in Developing Country" in Dwight Perkins and Michael Roemer eds. *Economic Systems Reform in Developing Countries*, Harvard (forthcoming)

6. A good review of this theory is given in Paul R. Krugman, *Strategic Trade Policy and the New International Economics*, MIT Press, 1986.

monopolistic competition, increasing returns to scale, learning-by-doing, and technological progress.

Competitiveness: Pragmatic Approaches

A more fruitful line of enquiry, from the viewpoint of practical policy formulation, has been to identify the sources of comparative advantage and international competitiveness in a changing, dynamic world, where technology is advancing, population is growing, and new productive capacity is being created. A serious criticism of the comparative cost doctrine has been that it is inherently static— i.e., it can unambiguously define conditions for specialization only for given factor endowments, notwithstanding several attempts at “dynamizing” the traditional model. As one well-known Japanese economist pointed out: “The problem of classical thinking undeniably lies in the fact that it is essentially ‘static’ and does not take into account the possibility of a dynamic change in the comparative advantage or disadvantage of industries over a coming 10- or 20-year period.”⁷ There is now an increasing realization that comparative advantage has to be created and must respond to the changing world environment. Success in international trade lies in anticipating trade opportunities and being prepared to exploit them. This requires responsiveness of production structure to consumer wants as well as the ability to influence or indeed create them. It also involves commitment to a longer-term vision of the economy that remains adaptive without becoming capricious. How this can be done has been the subject of a number of recent studies.

The first question relates to defining “international competitiveness” in such a setting. Competitiveness in the case of manufactured products is rather hard to define, because its two basic elements—price and quality of product—are in practice not easily compared. Price comparisons are virtually meaningless without regard to quality, and quality is difficult to specify in the face of product differentiation. Competitiveness cannot simply be viewed as a country’s ability to export or generate trade surpluses, since these can be brought about at least temporarily by means of artificially lowering the exchange rate and/or compressing domestic expenditures, as has been done in recent years by many developing countries that have tried to adjust to diminished resource availability. Nor does it arise out of abundant cheap labor or natural resources, for this would not explain the success of Germany and Switzerland (high-cost labor) or of Japan and Korea (rather limited natural resources). It also does not seem to depend on the level of productivity, for despite its many problems, the United States still leads the world in this respect.⁸

In short, no simple definition of competitiveness would suffice. It is in fact a multidimensional concept that embraces the ability to export, efficient use of factors of production and natural resources, and increasing productivity that ensures rising living standards of a nation. It depends on basically three sets of factors all taken together, viz. (i) the macroeconomic environment; (ii) the ability to absorb, use, and develop technology to reduce production costs, improve product quality, and innovate new products; and (iii) marketing strategy and arrangements covering such diverse factors as packaging, sales networks, and aftersales service. These factors are intimately inter-related. For example technological progress is often embodied in new plant and equipment, which is dependent on the rate of investment and economic growth, a domain of macro policy. Economic success therefore depends on a country’s ability to break into the virtuous circle of investment-economic growth-competitiveness.

7. Shinohara, Miyohei *Industrial Growth, Trade, and Dynamic Patterns in the Japanese Economy*, University of Tokyo Press, 1982, p. 24.

8. The MIT Commission on Industrial Productivity, *Made in America: Regaining the Productivity Edge*, MIT Press, 1989, p. 26.

Competitiveness and Technology

Productivity growth, particularly in some developed countries, has been a major concern in recent years since it is a key determinant of both the increase in living standards and competitiveness. It in turn depends on the efficiency of resource use and growth and absorption of new technology. However, it is only a partial measure of competitiveness and while past behavior of labor or total productivity can point to problems of industry, it does not by itself throw much light on future directions for investment and specialization. Given these limitations of the concept of productivity, one recent study chose to adopt a broader measure of economic health, and called it "productive performance," which also takes into account such factors as quality, timeliness of service, flexibility, speed of innovation, etc.⁹ This is a pragmatic and effective approach in identifying things that work and those that are inimical to competitiveness on the basis of an analysis of individual industries. But it does have the problem that performance in this sense can be measured only in terms of results, and it may not be a sufficient basis for relating outcomes to the identified explanatory factors.

Some other researchers have focused on identifying conditions, systems, and incentives that are particularly favorable to development, acquisition, and adoption of technological progress. It is primarily in this respect that Japan, and other successful exporters, have been unambiguously superior over those that have lagged behind. The trend has been to take a holistic view of competitiveness by incorporating in the analysis a diverse set of economic and non-economic factors, such as history, culture, values, and institutions. In a recent study, Professor Michael Porter lists four broad attributes in a nation that collectively define "the playing field" for industries to operate in.¹⁰ These are: (i) availability of factors, including skilled labor and infrastructure; (ii) nature and level of domestic demand; (iii) availability of internationally competitive supplier industries; and (iv) conditions governing the creation, organization, and management of firms and those governing domestic competition. These together comprise what he calls "the diamond of national advantage" in which all corners interact and reinforce each other. An environment that encourages accumulation of specialized assets and skills, and stimulates innovation and investment, is also conducive to creating competitive advantage. Yet another view takes issue with the preoccupation of governments in some countries with income distribution issues to the neglect of development concerns.¹¹ Again taking Japan as an example, it is argued that if matters like job security, worker health, etc. were left as a firm's responsibility, government would then be free to devote itself to creating appropriate production conditions.

Questions have been raised whether there is a particular management system or mode of organization that is particularly conducive or favorable to technological development. Professor Porter's view basically is that there is no system that is universally appropriate, and each nation must find its own in the light of its history, culture, and values. Nevertheless, technological change does dictate changes in modes of production and organization—sometimes radically—and inadaptability of one can frustrate the exploitation of the potential of the other. It is argued that high growth periods (such as the 1950s and 1960s) were characterized by a "dynamic coherence" between the socio-institutional framework and the requirements of technological change, while a mismatch between the two spheres has retarded growth in the last two decades.¹² According to this view, the countries begin to lose out in international competitiveness because they are wedded to a technology paradigm that has ceased to be relevant in new conditions. Their difficulties stem, as it were, from their previous success, since they are fully committed to the previous paradigm

9. Ibid.

10. Michael E. Porter, "The Competitive Advantage of Nations," *Harvard Business Review*, April 1990.

11. Bruce R. Scott and George C. Lodge, eds. *U.S. Competitiveness in the World Economy*, Harvard Business School Press, 1989, chaps. 1 & 2.

12. Carlota Perez, "Technical Change, Competitive Restructuring, and Institutional Reform in Developing Countries," World Bank, SPR Discussion Paper No. 4, December 1989.

by means of past investment and institutions that are difficult to change or destroy. The birth of a new paradigm—as has happened with the recent advances in technology—redefines the conditions for competitiveness, and success depends on the adaptability of national institutions. It is not just a question of establishing new industries and products alongside the old. However, the problem with this viewpoint is that while its stress on the harmony between technology and institutions is useful, it does not explain the success of NIEs in manufactures, where they replaced the traditional sources.

Summing Up

Although the debate on international competitiveness has been wide ranging and several issues remain unresolved, a few broad conclusions can still be hazarded.

First, although several deficiencies of the traditional model have been noted, no one has yet succeeded in providing a coherent and fully satisfactory alternative. Perhaps it is neither possible nor necessary. However, existing factor endowments (especially in the case of natural resource-based products) do usually explain adequately the existing pattern of specialization in trade, but they are a poor guide to comparative advantage in a world of economic expansion and rapid technological progress. International competitiveness requires creating comparative advantage where it does not exist, and it requires action on several fronts. There is an emerging consensus on the importance of macroeconomic policy and the imperative of developing and internalizing technology for achieving competitiveness, but there remain several keenly contested issues. The seminar discussions reported below reflect the points of convergence as well as divergence.

Second, theoretical arguments aside, protection remains very much a fact of life, with virtually all countries resorting to it to achieve a variety of national objectives. It is not quite enough to dismiss this as a misguided policy. Commercial policy and other trade interventions radically change domestic relative prices and signals to investors. In the hands of adept policy- and decision-makers, this powerful tool can yield impressive results, but it also has the potential for serious harm if it just creates vested interests. While a few countries have been spectacular successes, many others have been dismal failures. But protection cannot be held to be the determinant of both the success and the failure; there are clearly other factors that influence the outcome.

It is also probably correct to say that in today's world, protection has become much more difficult to apply, and it is more easily frustrated by domestic consumers and foreign suppliers. With much freer movement of capital and information flows and greatly reduced transport costs, countries have witnessed a rapid rise in parallel markets. In any case, most proponents of trade liberalization are not arguing for completely free trade—at least not immediately—but for more uniformity and transparency in protection, greater reliance on tariffs rather than quantitative controls, and, most importantly, removal of biases against exports.¹³

Finally, implicit in the debate on competitiveness is the role and responsibility of the government. The primary responsibility for ensuring a stable macroeconomic environment rests with government though there are differences of viewpoints on how this might be achieved, particularly with regard to the respective roles of exchange rate and trade policy. On the other hand, government's influence and role in technology development and marketing—the two other determinants of competitiveness—have tended to vary enormously among countries and over time, providing very diverse models of public/private sector interaction. The debate on the state's proper role in technology particularly has intensified in recent years as developed and developing countries alike seek to explore and exploit the potential of recent technological breakthroughs in materials, production processes, information processing, communications, and genetic engineering. These developments are

13. Oli Havrylyshyn, "Trade Policy and Productivity Gains in Developing Countries: A Survey of the Literature," *World Bank Research Observer*, 1990.

critically important for those developing countries that have already a substantial industrial base and have become important suppliers in the world market. But they also have far-reaching implications—through synthetic substitutes and new production processes (notably, robotics)—for the pattern and pace of economic development in many other developing countries.

Seminar Format, Main Themes, and Discussion

The seminar was composed of three modules: (i) identification of principal issues in international competitiveness; (ii) review of different models of public and private sector interface; and (iii) conclusions with respect to the management of public and private sector partnership. The main themes and issues that were addressed in these modules are described below.

Principal Issues

The seminar opened with an overview of the key conceptual issues relating to international competitiveness and its main elements. Rapid advances in technology and trends in trade policy were the areas of main concern in this session, and the discussion focused on the implications of the changing international economic environment for the future of productive structures of developing countries. The concern here was twofold: the kind of adjustments needed and the reform process of adapting economies to those changes.

Although by no means precise, the definition suggested by the U.S. President's Commission on Industrial Competitiveness was accepted as adequate for the purpose of the seminar. International competitiveness, according to this definition, is the ability of a country to "produce goods and services that meet the test of international markets, while simultaneously maintaining and expanding the real income of its citizens"¹⁴. Some participants underscored the last part of the definition—i.e., the necessity of maintaining and expanding real incomes as countries attempt to stabilize and adjust their economies. Exports certainly need to be stimulated, but the "competitiveness" achieved by means of devaluations and public expenditure cuts—which are generally associated with reduced real incomes—poses serious political problems for the countries concerned. However, there was complete consensus on the necessity and desirability of achieving macroeconomic stability.

Past decades have witnessed a rapid expansion in world trade, but some countries have emerged as particularly successful exporters. A distinction can be drawn between national and firm level competitiveness, a distinction that has become sharper with the expanding role of multinational corporations, consequent to the increasing mobility across national boundaries of factors of production, including knowledge, technology, and skills. But the nations, concerned about the welfare of their people, still tend to equate national and enterprise competitiveness. This has given rise to a tension between "techno-globalism" and "techno-nationalism"—i.e., between widening global production networks to optimize the use of new technology and guarding technology against its export to other countries. Governments try to prevent sharing of technical knowledge with a view to maintaining competitive advantage, while the multinational enterprises seek out the most advantageous production arrangements. In such a situation, national and enterprise level interests do not necessarily coalesce.

These conflicting crosscurrents have led to new forms of public-private sector relationships and system frictions in the world trading environment. It was argued at the seminar that with different models of the public-private sector relationship in an increasingly interdependent world, competition among enterprises is often competition among systems. The debate has centered around the Japanese growth model, in which the

14. Commission on Industrial Competitiveness Report, President of the United States Commission on Industrial Competitiveness, Washington, D.C. 1985.

government played a major role in targeting the so-called strategic sectors and technologies. While one side argues that the government's role in Japan has diminished over time, the others (notably the United States) continue to express concern over the intimate nature of the government-business relationship in that country.

The growth of networking by global corporations was seen to have significant implications for the developing countries' access to technology. Although at this stage it is difficult to measure its importance relative to other channels of technology transfer, rise in networking could well widen the technology gap between the so-called Triad (U.S., Japan, and E.C.) and other countries. This could happen because the smaller economies, outside the three giants, would not have access either to private sector alliances, such as joint ventures or technical agreements, or to government-sponsored research consortia. The resulting concentration of technological knowledge in a few countries might well cause a new brain drain, especially out of East Europe.

Thus, the intensely competitive, technology-driven interaction of market, firms, and governments raises the prospect of a growing divergence between the haves and the have-nots. The international system seems to be moving from one based on rules to one based on power, in which developing country interests may not receive due weight. The mixture of market-based behavior and rules with strong manifestations of a managed trade regime is confusing to business and adds uncertainty to the world economic outlook. With the growing importance of high-technology in industry and the emerging shortage of capital (largely as a result of demands from Eastern Europe), economic activity is likely to concentrate in the industrial countries. Competitive bidding to attract investment and technology is liable to leave developing countries generally at a disadvantage vis-à-vis the industrial countries.

A question was raised concerning the adequacy of growth in the world economy for bringing about structural adjustments. It was agreed that in a stagnant or slowly growing world economy, adjustment becomes more difficult, and the success of one exporter is likely to be at the expense of some other. In other words, trade in this environment is a "zero-sum game." There was considerable discussion of how the current international economic environment differed from the era of the so-called "golden age of growth" of the 1950s and 1960s. Some participants discussed how to provide for a new golden age, while others were pessimistic about the prospects for a revival of rapid expansion. Domestic competition versus international competition, and the problems and challenge of economic liberalization, preoccupied several participants. One viewpoint was that in a slowly growing world economy, trade liberalization could cause balance of payments crises and interrupt investment and growth; at least for the large developing countries, domestic competition was considered more relevant than international competition. Some others felt that despite the difficulties, an outward-oriented strategy was the only correct route to international competitiveness.

Moving from this somewhat pessimistic global perspective to the national economy, there was wide agreement that the appropriate role of the public sector changes over time and varies with the relative competence of the public and private sectors. The major responsibility of the public sector, however, remains in providing a stable macroeconomic environment. One speaker stressed that the three essential requirements for successful implementation of government policy were policy consistency, popular acceptance, and private sector support. Several participants stressed that popular support was particularly crucial to the recovery of growth in an era of mass democracy, and the success of management was contingent on arriving at a broad consensus on the essentials of reform. How to prevent populist policies, clientalism, and general tolerance for inflation from aborting growth are issues that politicians and policymakers must face squarely. While the Korean economic success was widely applauded, there was a general feeling of concern regarding economic and political concentration, and inequitable sharing of the fruits of recent development. However, it was also pointed out that with democratization underway, the Korean government was concerning itself with the questions of equity and social justice, while increasingly leaving to the private sector the matter of efficiency in resource use.

Different Models of Public-Private Sector Interface

In this part of the seminar, different country experiences were reviewed and discussed. This was done by means of separate sessions on individual countries as well as groupings of countries that can be viewed as archetypical of different forms of state intervention. Latin America and India were taken as one grouping and the socialist countries of Eastern Europe as another, while the successful experiences of Korea and Japan provided yet other models of state nurturing and support of industrialization and the private sector. It is to be noted that none of these cases represented *laissez-faire*; indeed each provided a different model of active government. The discussion in this module was aimed at developing broad consensus and understanding on the relevance of these diverse, positive and negative, experiences for other countries.

The history of government intervention in Latin America was traced, which showed a landscape of varying intensity of intervention over time and across countries, with differing degrees of economic distortions. It was argued that strong, variable, and distortionary state intervention had been associated with reduced long-run economic growth and increased output fluctuations. Rational economic decision making is impossible in an environment where a private investor must devote a good part of his time to figuring out the government's next move and how to beat it. The issue, however, was not government intervention as such, but rather the nature and context of that intervention. What might be viewed as intervention in Korea would be regarded as "Manchestarian liberalism" in Latin America, according to one speaker.

It was also simplistic to explain what was called by one participant "the existential crisis" of Latin America in terms of import-substitution versus the export-oriented model of industrialization. At least some Latin American countries had started on a phase of export-orientation, and greater concern with international competitiveness, just before the crisis of the 1980s hit them. Today, the region appears to be under two different tensions: modernization, restructuring, and industrialization, on the one hand, and the imperatives of fostering mass democracy, on the other—a situation somewhat analogous to that of Italy and Spain during the inter-war period. In noting the weaknesses of the Latin American productive structure, it was pointed out that those countries had paid "black market" prices for acquiring technology.

Government intervention in industrialization in India was more conscious, deliberate, and pervasive than in Latin America. It was stated that development of capital goods, heavy industry, on one side, and small-scale cottage industry, on the other, was given special encouragement. This way the demands for industrialization and the need for employment creation could be reconciled. Heavy protection and concentration on import substitution provided the main stimulus for the Indian industrialization. Despite much criticism from the Bretton Woods institutions and others of this strategy, India chose to stay the course. The results, as viewed by one speaker, were not altogether bad: India escaped the problem of heavy debt and macroeconomic instability, while managing to put up a reasonable industrial and export performance. Several participants took issue with this viewpoint. It was pointed out that India had paid a heavy cost by ignoring international competitiveness, and that its performance would have been much better if its industry had adapted itself to the rigors of the international market. The evident ability of Indian exports to grow was largely explained by the barter trading arrangements with the Eastern European countries, arrangements that might not be sustained after the countries convert to market economies. The neglect of the medium-scale industry was considered as another mistake. In any case, given the very large size of the Indian economy, the Indian model could not have an appeal for other countries.

The socialist countries of Europe provide an altogether different set of issues and problems. Although the failure of these economies to some extent could be attributed to the "inward-looking" policies of import substitution, it was not seen as an adequate explanation since many, like the Latin American countries, had attempted in the 1970s to switch to

“outward-looking policies.” This policy shift also provided the justification for heavy external borrowing; paying off the debts would pose no problem after the countries had become internationally competitive. However, the main cause of the breakdown of those economies was the inefficiency of the command system itself, which was characterized by informational weaknesses as well as inappropriate incentives. Earlier attempts at reconciling the market with central planning had been generally unsuccessful. It was noted that the transition from central planning and control to a system guided and regulated by market signals is bound to be difficult; the process of democratization complicates it further. One observer put it as a dual revolution: from dictatorship to democracy and from central plan to the market. However, there was among the seminar participants little support for the so-called “big bang” approach that argues for sharply accelerating the transition process, particularly because establishment of institutions and appropriate legal systems would take time. Contrasting with the experience of post-war Western Europe, one speaker said that it was not a case of adding gasoline to an otherwise functioning engine, but rather one of creating the engine itself. The question was what degree and form of state intervention would permit the productive structures of these countries to become internationally competitive. The question of how to structure the interface between the public and private sectors would have to be answered by each country. A concern was also expressed about the risk of political backlash in countries that were trying particularly hard to accelerate the transition to the market economy.

The government's role in Korea has evolved over time. The strong drive for modernization in Korea was motivated by a desire to overcome the scars of colonial occupation, war, hunger, and acute shortage of natural resources. Expanding exports had to be a principal goal. The government played a leading role in fostering economic transformation and growth, and the quality of civil servants was a critical factor in the country's economic success. It was pointed out that in Korea the best students became civil servants, while governments in other countries tended to attract only mediocrity. This was an aspect that Korea shared with Japan. For successful governance, public perception of the bureaucrat was considered extremely important. A feature of the Korean human resource development experience was the system of financial burden sharing with the beneficiary. Another factor in the Korean success was the access businessmen enjoyed to the highest levels of government, though this only benefited the very large enterprises. However, the accomplishments of Korea now face a threat from the recent slackening of income and export growth and the growing concern with economic inequities. And this is happening as the country makes a transition to democracy. Some observers wondered how Korea was able to choose the “winners.” The question was seen to be one of getting to the “production possibility frontier,” which might happen through the creation of an appropriate environment for internal competition that leads to productive efficiency. Korea's past mistakes were also noted (e.g., the emphasis on heavy industry during the late 1970s), though some of those industries did turn out to be profitable investments (e.g., steel and capital goods).

Japan also represents a case where the public-private sector interface evolved over time. But international competitiveness remains a paramount concern of the Japanese people and policymakers. Discussion focused on the conventional view of Japan as the originator of industrial policy, practitioner of industrial targeting, and a country with a strong bureaucracy—in short, a complex of characteristics that has come to be called “Japan Inc.” Protection of industry was a principal instrument of government policy in the early phase of post-war industrialization, but Japan “graduated” at a good time. Though the power and influence of MITI (Ministry of International Trade and Industry) has been considered strong, it would be simplistic to characterize the Japanese system as “Japan Inc.” There have been many instances when the MITI view or analysis proved to be wrong and the private sector chose not to heed its advice. Nevertheless, cooperation among firms and between the government and private firms is a distinguishing feature of Japan, one that has been fostered by the government itself. The Japanese competitiveness was more likely the result of intense domestic competition among firms and the Japanese management system that emphasizes

relations with respect to labor, suppliers, and banks. A good part of training, education, and investment in social infrastructure in Japan was enterprise based. Also micro-level cooperation between public and private sectors, particularly in technology development, was considered to be strategically more important for competitiveness. In contrast to India, the Japanese government had been involved in promoting medium-scale industry, which was helped by the practice of subcontracting. One view was that Japanese industry benefited from the relatively inefficient distribution network, since it provided through its close links with domestic suppliers a form of protection to domestic industry. Nevertheless, it remained difficult to determine why some government interventions succeed, while others do not. Questions were also raised concerning the extent of independence of corporate decisionmakers and how really private the big private industry was in Japan when it was difficult to identify the real owners: in other words, could one really separate the public and private sectors in Japan?

Management of Public and Private Sector Partnership

The first two modules of the seminar provided the participants with ideas on the respective roles and responsibilities of the public and private sectors in gaining international competitiveness. The problem was seen to be one of managing the partnership between the two sectors rather than one of resolving fundamental conflicts between two adversaries. In this final part of the seminar, the participants first discussed the government's role in supporting education, science and technology as well as the role of macroeconomic and industrial policy. Participants then addressed the question of the enabling environment, including the private sector's own contribution to the structural transformation of the economy.

Education, Science, and Technology

The opening speaker at this session stated that international competitiveness was less and less dependent on low production costs stemming from low wages. The direct labor content of most products is decreasing rapidly as they are produced with more automated technologies. Indeed, technological advances influence the structure of production, the pattern of international trade, and the growth of income. While some aspects of competitiveness relate to what takes place within an enterprise (e.g., efficiency in production, quality control, responsiveness to consumers, etc.), others have to do with the external policy. The latter include the general economic environment and provision of infrastructure, which are basically the government's responsibility. Education, science, and technology are areas where the actions of both government and enterprise matter: government has a critical role to play in human resource development as well as in science and technology, but enterprises themselves can and do make an important contribution.

In order to exploit the technological advances, it was pointed out, the nations needed to build up their technological capability—i.e., the ability to scan, assess, select, use, assimilate, improve and develop technology that is appropriate to changing circumstances. Technological capability is by its nature embodied in people, not machinery. This requires a well-developed educational system that lays the necessary foundations at all levels. In this regard, some countries have been more successful than others, and they are also the ones that have excelled in international competition. Education attainment among the countries represented at the seminar varied widely. For example, in India, almost three-quarters of the population aged 25 and above had had no schooling at all; in Korea, 9 percent of the population in the same age group had had some post-secondary-school education.

The participants were asked to consider four key elements of technology policy and technological support infrastructure needed for competitiveness: acquisition of foreign technology, use and diffusion of technology, improvement and development of technology, and investment in human capital. Japan and Korea had demonstrated themselves to be

particularly successful in acquiring and adapting foreign technology. Other countries too have tried and succeeded to varying degrees. But acquisition of foreign technology can never be a substitute for domestic effort. In the rapidly growing East Asian NIEs, special institutions and mechanisms have been developed to promote the diffusion and use of technology, many involving special public/private sector cooperation. Creation of the necessary supporting environment and institutional infrastructure is critically important in improving a country's technological capability.

Domestic diffusion of technology can be facilitated by means of subcontracting. With respect to technology development, it was pointed out that the cumulative impact of small incremental changes that are usually undertaken on the shop floor could be much greater than the initial introduction of a major new technology. Thus, notwithstanding the government's important role in R&D, the major determinant of technological progress was what takes place within the enterprise itself. It was noted that the distinguishing feature of the successful competitors like Japan and Korea was the high share of R&D expenditure incurred at the enterprise level. While adequacy of infrastructure is critical to technology development, the importance of involving users in the design of programs was also stressed. Finally, with regard to human capital: this not only requires a well-developed education system that lays the necessary foundation at all levels, but also on-the-job training to upgrade the skills of the employed.

In principle, these ideas could be implemented in any country, but the institutional context is crucial in stimulating R&D and technology absorption. Institutional capability varies widely among countries. One observer stressed that for building up technological capability, the importance of primary education must not be forgotten; setting up elite institutions alone would not particularly help. The case of India was mentioned, where high quality Ph.Ds were being produced, only to be exported to the United States and other developed countries. There was also some question whether technical training institutions emerge as part of the development process, or are a precondition. Finally, there is the question of affordability, and making choices that make the most of available resources.

Macroeconomic and Industrial Policy

The importance of a suitable macroeconomic environment was stressed throughout the seminar. In this session a speaker provided the participants with an overview of the government's role in Colombia, Mexico, Korea, Taiwan, the Philippines, and Thailand. The Latin American countries were seen as following "growth activist" policies and using various forms of income transfers. While temporarily successful, such policies proved ultimately self-defeating, and in the process vested political interests were created that made a change of course difficult and slow. Korea and Taiwan were seen as having generally avoided a strategy of forcing growth beyond "natural" levels, though this was probably less so for Korea, which followed quite interventionist policies in the 1970s. Both managed to keep public sector deficits low and followed relatively restrictive monetary policy, with the resultant low inflation. Thus, the two got consistently good results in "good" times and "bad." Thailand and the Philippines, on the other hand, had between them similar resource endowments, but their responses to external shocks were markedly different. There had been a clear steady-as-you-go aspect to Thailand's policy orientation over time, but in the Philippines there was substantially more policy oscillation and an uncertain trend.

It was argued that a government's capacity to manage and control does not necessarily rise with economic development and increased complexity of the economy; indeed, as modernization proceeds, the need for decentralization becomes more pressing. Basically, it is the flexibility of the government—i.e., its ability to respond to changed circumstances—that is important, not its absolute size. Based on experience, it was possible to visualize a three-stage process of policy reform in developing countries. The first stage essentially involved achieving a reasonable degree of macroeconomic stability, where monetary expansion had been controlled, and the domestic cost and international price of the currency (i.e., interest

and exchange rates) had been brought to a realistic level. In the next stage, the government can begin to set domestic incentives right, by means of greater reliance on direct taxes, a reduction or elimination of quantitative controls, and a reduction in import duties. It is only in the final stage, however, that the government is in a position to generate the revenues needed to expand expenditures on such critical sectors as education, science, and technology. Also important is domestic balanced growth between agriculture and rural industry and the service sectors.

Another speaker presented a sharply contrasting viewpoint that supported more interventionist government policy along the lines of the Japanese model of industrialization. Government policy affects industry in many different ways, through macroeconomic policy, anti-trust laws, provision of infrastructure, and commercial policy. In this broad sense, there is no country that does not influence its industrial development. The question of competitiveness turns on whether all these influences or policies are in some way coordinated so that industry develops according to a "strategic view" of the world economy. In this sense, the successful countries like Japan and Korea, and many others, do have an industrial policy. According to this view, countries have to be careful in deciding about the opening up of their economies, because international competition at an early stage of industrial development may be too disruptive. Given the intimate relation between investment and absorption of new technology, it is important to protect countries from external shocks that interrupt the process of development and growth. The participants' general reaction was that governments had tended to be much more interfering than was good for the countries' development. One private sector participant said that before liberalization in Turkey "it would take two years to get a 'no' answer from the government," and no investor could afford that kind of delay.

The Enabling Environment and Related Issues

The final session of the seminar heard views on the concept of the enabling environment for gaining competitiveness: how it could be created and the respective responsibilities of the public and private sectors. In this session, the previously expressed concerns on the nature and pace of technological change, developments in the world economy, the macroeconomic situation of different countries, and problems and challenges of mass democracy came under review.

The challenge for the NIEs in the 1990s was seen by one speaker to lie in defining their development policies in the face of powerful regional blocs, increasing competition in world markets, and what was called a new techno-industrial paradigm, comprising new "generic technologies" (microelectronics, new materials, biotechnology, renewable energy) and a management model based on integration and flexibility as against mass production. It was argued that the new techno-industrial paradigm redefined the conditions for competition and for the dynamic comparative advantage. To counter the threat to the traditional industries, NIEs had but one choice to make: reappraisal of their competitive strength. A distinction was drawn between a country's inherited factor endowments and those that are created. A key problem for the developing countries, particularly the NIEs, is to evolve toward technically more advanced forms of industrial processing while gaining access to high technology despite the reluctance of industrial countries to share that knowledge. In general, the reassessment of competitive advantage in developing countries would require concentration on industries where the "threshold" for R&D and investment was relatively low.

At least for Latin American NIEs, the environment that enables investors and producers to identify and develop new production possibilities still had to be created. This was inevitably a learning-by-doing process, requiring development of what were called "shared concepts" and "joint strategies." The first involve creating minimum consensus in public and private sectors concerning the shape of the economic future; the second, working out compatible and viable strategies for industrial restructuring and growth. "Outward-looking"

strategy was stressed. This was not so much a process of opening up the economy, but rather a strategy for creating comparative advantage in the light of global trends. A strong case was made for close strategic cooperation among government, corporations, labor unions, and political parties in three domains: the search for new production possibilities; the implementation of the new industrial strategy, oriented toward competitiveness and industrial restructuring; and R&D projects.

Concerns were expressed about the changing world economic environment and the pressures on developing countries from different sides. The world trading system appeared to be moving away from the ideal of free trade. Reciprocity was becoming more important with the emergence of trading blocs. Some participants repeated the need for achieving macroeconomic stability but also emphasized the need for modifying regulations to enhance domestic competition and encourage private investment. One observer said that the experience had shown that government paternalism was not very effective, and government must redefine its partnership with the private sector as development proceeds. The open economy is no longer a choice, but a necessity: the issue is how to create it. This necessitates institutional change and education, which take time.

As far as the Eastern European countries were concerned, the creation of an enabling environment for "post-socialist" countries would involve recreation of a civil society (one that is not "swallowed up by an omnipresent and omnipotent state"), separation of the business sector from the state, and creation of greater ability to absorb innovation. However, in the industrial sector at least, the starting point involves no real private sector. This is a paradoxical situation: the task of creating the enabling environment for a private sector that does not yet exist falls to the state. The state is in fact to preside over its own withering away in this sense. Most of the institutions in the market economies had evolved over a long period of time. In Eastern Europe and China, they must be created in what is, in historical terms, a very short time. The provision of the enabling environment becomes thus a major task for the state. The need to push education, building on favorable human capital endowments, and to establish new forms of economic cooperation with international economic institutions and foreign investors was also stressed.

The participants were agreed that the economic system needed to be flexible, one that could evolve with changing conditions. During the early postwar years, the choice lay basically between two diametrically opposed systems, or "models of development," whose results are now self-evident. Consequently, there is today a much greater consensus as to what needs to be done. Indeed, the seminar itself arose out of this emerging consensus.

Conclusions*

The discussion at the seminar was wide-ranging and rich. This section attempts to capture the recurring themes at the seminar as well as to pull together important issues and ideas from different sessions and present a coherent set of conclusions. While there was a fair measure of consensus among the participants on most issues, several others were raised that were not conclusively resolved given the pressure of time. These issues are also reported here.

General Observations

In recent years, as interdependence in the world economy has increased, nations have become more self-conscious, and also more aware of the experience of other countries. In this process, there has been something of a global search for a "model" for development to cope with the new circumstances presented by a more open and more competitive international economy. Whereas in the first few decades of the post-war period, the dominant discourse pivoted around the systemic choice between capitalism and communism, these terms were

* This section is based on the summing up given at the seminar by the rapporteur, Colin Bradford.

absent from the seminar. More subtle choices are now involved in a more complex economic and in some sense less politicized environment.

It seemed fitting to hold a meeting on the subject of international competitiveness and public sector-private sector interactions in Korea, which is widely regarded as one of the most successful, if not the most successful, developing country in the contemporary world. The similarity between Japan and Korea with respect to dynamism and the nature of public-private sector relations lead many to wonder whether these two countries represent a model of competitiveness and rapid growth for the rest of the world.

The global search for relevant national experiences to draw upon, if not replicate, reveals that countries are pursuing multiple national goals that are often difficult to balance. The need to improve income distribution and equity among different social groups and the need to strengthen democratic process and practice seem to weigh equally with the priority of enhancing international competitiveness and economic growth. The developing country experiences discussed at the seminar seemed to fall short on one dimension or another in meeting these three goals. For example, whereas no one would question Korea's achievements in international competitiveness, Koreans themselves are pressing for improvements in participation and what one Korean participant called "fairness." In the socialist economies, equity considerations have been given attention, and, more recently, reforms of political structures have also been undertaken. But there are major weaknesses in international competitiveness. In the case of Latin America and India, long democratic traditions are combined with continuing problems with equity and competitiveness. While each region seems to have done well in relation to one or sometimes two of the goals, all three—equity, efficiency, and democracy—have not been achieved together in all the cases considered. This lack of success—even frustration—was one of the themes that recurred most often at the seminar.

Points of Agreement

The enormous challenge facing societies in the 1990s to achieve these fundamental aspirations leads to the question that seemed to preoccupy the participants: what general principles and practical lessons drawn from the experiences discussed at the seminar could be useful in designing national approaches to development in the 1990s? Several general propositions emerged from the two and a half days of the seminar discussions.

- (i) There is no single model for framing public sector-private sector interactions that ensures maximum effectiveness in realizing even the singular goal of international competitiveness. However, the seminar participants were agreed (a) that the private sector had an important and legitimate role to play in economic development in all economies; (b) that the public-private sector interactions are better articulated within a market-coordinated economy than one of central control and direction; and (c) that public-private sector relations evolve and vary over time rather than being subject to a once and for all definition as is usually the case in systemic definitions. Korea provides a clear example of such an evolution, where the government's role in industrialization and economic development changed from an active promoter during the early industrialization in the 1960s to interventionism during the 1970s, and, more recently, to a relatively neutral role, as expected of more mature, industrialized countries. The corollary of this proposition is that in public-private sector relations flexibility, rather than precise definition, is what matters.

There was a pervasive concern among the participants with democracy and the process of democratization under way in most developing countries. This could be viewed as an effective way of holding government accountable to the public. Participants felt that as economies mature there is a general trend toward greater accountability and decentralization in decision making; the government's role in

the economy becomes more indirect. Within this general trend, there is a wide range of choices and combinations possible. One such range of choices concerns the concept of "openness" and "outward orientation," which figured prominently in the seminar discussion. It was argued that the two must not be taken as synonymous. In any case, "openness" was something relative; it was possible for an economy to be open in one respect (e.g., in technology, science, culture) and not so open in some other (e.g., financial and capital markets). Indeed, according to one viewpoint, there was "no unique optimum form or degree of openness" that holds true for all countries at all times; serious irreversible losses could result if the wrong kind of openness were attempted or the timing and sequence were incorrect.

Nevertheless, there was general agreement that government should not constrain the private sector through interventions, but the question of what type of relationship should exist between the public and private sectors was left unanswered. After all, in many countries, government regulation, controls, and commercial policy were devised primarily to nurture a domestic, private sector, entrepreneurial class. Indeed, what was referred to as the "bankruptcy" of Latin American economies could not solely be attributed to the failure of government, but it was the failure of the entire economic system, of which the private sector was very much a part. It was noted as somewhat ironical that the responsibility for restructuring and liberalizing the economic system, and setting up appropriate institutions to ensure the rights of all in the new system, remains with the government. This is most clearly the case in the socialist countries in transition, but also in others, notably Latin America, where the government must act to achieve economic stability, growth, equity, and international competitiveness.

- (ii) Political leadership and credibility in government are extremely important. Several participants emphasized the importance of the quality and professionalism of government bureaucrats in the process of achieving international competitiveness. The vision of modernization presented by the political leadership and the perception by the people of the professional capacity of the government to carry out that vision are crucial and must not be lost in a more politicized environment. Once again the question of reconciling this with democracy came up, and one observer simply concluded that democracy could not afford to be "a government of fools."

One private sector participant pointed out the importance of the "chemistry" between the public and private sectors and the need to define the interface as a positive sum game. The task of the government is to engage the private sector, to involve it in a continuous partnership, improving open channels of communication and feedback. This chemistry is increasingly important as economies become more knowledge and information intensive in their activities. Another related view was that public-private sector relations were central to the formulation and execution of national strategy, without which a modern economy could not operate in a globally competitive world.

- (iii) The socialist countries were seen to present a special and separate set of issues. The ongoing economic transition in the socialist countries of Eastern Europe and other regions of the world is of a systemic nature, not one of a simple shift in the public-private sector mix as in industrial or other developing economies. In socialist economies, markets have to be created where they simply do not exist. Deregulation, privatization, and reducing the role of the state are insufficient to create competitive conditions. Thus, in the case of socialist countries, the choice of public-private sector interface will come later, after the systemic transitions have been consummated.

- (iv) There was complete consensus among the participants on the importance of macroeconomic stability as a precondition for economic dynamism. Indeed, this proposition was so widely accepted that the macroeconomic fundamentals were not directly addressed at the seminar, although the importance of the issue was frequently stressed. The Latin American experience with hyper-inflation and wide fluctuations in economic performance was cited as an example of the high costs of macroeconomic instability.
- (v) Several participants warned of the risk of too narrow a definition of competitiveness. First, several participants underscored that competitiveness could not simply be measured in terms of costs production, nor should the improvements in the balances of trade consequent to devaluations be taken to signify real improvements in competitiveness. Innovation, product quality, and marketing were considered fundamental factors. Although the challenge of new technological developments was widely acknowledged, several participants emphasized the continuing relevance of factor endowments in determining production costs and trade patterns despite the increase in high technology production that is basically footloose. For example, for a resource-rich country like Indonesia, labor-intensive exports remain the most important items in non-commodity exports. The consensus among the participants was that factor endowments were not dead as a determinant of trade; they had just become less important.

A second strand of this argument could be picked up from the importance attached to national competitiveness as a reflection of society's total policy and sectoral mix. One observer warned of excessive focus on industrialization and tradable goods in discussing international competitiveness; the agricultural and service sectors were equally important. The overall competitiveness and efficiency of an economy was the objective, not generating a trade surplus or increasing the share of manufactured goods in total exports. The relative neglect of agriculture and rural development has frequently followed from this narrower definition of competitiveness.

Yet another strand of the argument is the view that national competitiveness is not simply an economic or market-driven phenomenon. Passive efficiency (that is, getting prices right and expecting competitiveness to follow automatically) is not the experience of countries, such as Korea, that have done well in the world economy. Laws, customs, language, business habits, and other features of the national context play a major role in determining competitiveness and trade. A large, society-wide vision is required.

- (vi) The importance of knowledge, technology, and innovation as applied at the microeconomic level of the firm was defined as the new frontier of the public-private sector interface. All agreed that an overall national framework, strategy, project, or vision was necessary, but the seminar attributed greater weight to the application of technology to enhance productivity growth. The importance of non-price characteristics of goods in determining sales growth, such as product quality, delivery time, after sales service, responsiveness to customers, product design, and marketing has already been noted. These dimensions were held to be more dependent on technological and organizational innovation than on cost-reducing efficiency measures.

There are no easy formulas to guide actions in the field of technology development and application. In fact, the discussion revealed the potential for pitfalls. Knowledge-based innovation that results in wholesale actions such as initiating a major shift in national resources toward education at all levels, or launching a government sponsored effort to collect and disseminate scientific and technological information, or developing a national basic research effort to become a knowledge

creator or appropriate technology producer was thought to lead to dead-ends. Nevertheless, some avenues for more promising positive action were brought forward. Recent research findings and lessons from practice demonstrated that general education increases the trainability of workers, that primary education can be extremely important for productivity growth, and that elite science and technology education in high schools does not work, but highly focused science and engineering post-graduate centers in specific fields have been successful in Korea and Taiwan. Government sponsoring of research and development had generally not been effective, and government grant funds to support private sector R&D activities had been more effective and more transparent than fiscal incentives. What is often needed is a financial institution dedicated to supporting private sector innovation.

Access to scientific and technological information was not as critical to success as having people who know how to utilize the information to generate incremental value added. Highly specialized knowledge dissemination centers were the most effective. Examples were given of Productivity Centers in Taiwan and the Industrial Liaison System in Canada where technical personnel are deployed to diagnose the engineering, marketing, or organizational expertise needed by individual firms and to feed the required information back to the firms to meet their specific needs.

It was felt that knowledge-based innovation was a good example of the importance of flexibility, particularly in the more advanced developing countries, in defining the modalities of public-private sector interface according to the specific circumstances facing particular firms and sectors in given national contexts. It seemed that government would have a significant role in a field in which externalities were important but the more responsive to private sector conditions it could be, the more effective it would be.

- (vii) The external international context for national competitiveness and openness is changing. It was felt that the decade of the 1990s is likely to be characterized by highly restricted flows of private finance to developing countries, including extremely wary foreign direct investment. It was pointed out that the historic pattern of technology transfer accompanying, if not embodied, in foreign direct investment had been broken and replaced by a new form of competitive bidding in which multinational firms and governments bargain for exchanges in assets such as technology, markets, labor force, finance, and policy influence. This creates new dynamics of techno-nationalism as opposed to pure open markets as a national policy posture and of potential, if not actual, dualism in the world economy between the technology haves and the technology have-nots. The international economy was moving away from a system based on rules to a system based on power, which in turn seems to be creating confusion in the international trading system where free trade norms are getting mixed up with mercantilist behavior.

The highly constrained outlook for financial flows to developing countries in the next decade and the changing norms and behaviors in world trade lead to the possibility that the global economic context for developing countries will be more restrictive than in the past. Neither trade nor finance can serve as the handmaiden, much less the stimulus, to economic growth for developing countries. The importance of creating an appropriate environment for domestic competition was frequently stressed. The global economic context places a premium on getting domestic economic growth going by creating competitive conditions internally that may result in increased trade growth rather than orienting strategy around competitiveness in international trade as the vehicle for promoting internal economic growth, as appears to have been the case in successful countries in the past. This emphasis is reinforced by the new importance of knowledge-based

innovation in growth and of a competitive context for productivity improvement at the level of the firm.

To conclude, the tensions discussed in this seminar between internal and external dimensions of development, private sector-public sector relations, democracy and discipline, and equity and competitiveness cannot be escaped or resolved in a definitive manner. Rather the role of national leadership and of politics is to continuously mediate these tensions by defining a vision of the national society in the future that mobilizes economic dynamism from all segments of society. The role of politics is to provide the means for national choices and to channel economic energies that facilitate the society's capacity to become what it uniquely can be rather than adopting foreign models of successful development that may not be appropriate. Nonetheless, selectively distilling guidance from the experience of other countries, as this seminar attempted to do, can help forge more effective approaches to development involving both the public and private sectors in the future.

Unresolved Issues

Given the short duration of the seminar, there were bound to be some questions or issues that were left open-ended or could not be given the attention they deserved in other contexts. The most important and conspicuous unsettled question was the role of the private sector itself. Although the seminar was directly concerned with the public sector-private sector interface, the private sector's role in the discussion tended to be left as a residual. The tendency was to define first what the public sector should do, leaving the rest to the private sector. One analogy used was to let the government prepare the playing field, but leave the game to the players. The extensive recent literature and ideas on the comparative strengths of the two sectors (e.g., the so-called Nordic Development Paradigm) did not get aired at the seminar. However, the importance of the private sector in technology development and innovation was widely acknowledged.

The second area where the discussion remained inconclusive relates to the role of trade policy. References to opening up of economies have already been noted in this report, and the general view was that liberalization should be pursued with caution. However, as a policy for promoting industrial development, participants remained generally cautious and uncertain as to its effectiveness. With regard to the global trading environment, concern was voiced on the emergence of the trading blocs, but scant attention was given to exploring ways of improving the situation. Thus, for example, there were few, if any, references to the ongoing Uruguay Round of multilateral trade negotiations.

The environment, and its implications for the costs of production and pattern of industrialization in the developing countries, was another field where questions were raised but not discussed. The issue was particularly relevant to the industrial transformation and competitiveness of the socialist countries in transition, but its significance was noted in other contexts as well (e.g., the competitiveness of the Japanese automobile industry). It seems a fair conclusion that the participants considered environment to be an important and complex issue that could not be discussed within the short time available.

Finally, several references were made to the possibilities for cooperation among the developing countries in matters of trade, technology, and investment, but no concrete ideas emerged as to how it could be fostered. Perhaps the general conclusion was that such cooperation had some benefits, but it could not be a substitute for actions by individual countries to achieve international competitiveness.

2

LESSONS FROM THE TRIAD

Sylvia Ostry

Introduction

The struggle over competitiveness within the Triad of the United States, Europe, and Japan is generating serious international friction, and there are no multilateral rules to contain these new pressures. This paper sketches the main developments in the Triad that have generated this friction, explores the policy implications of these developments, and addresses some of the key issues for the newly industrialized economies (NIEs). Before tackling these subjects, it is useful to ask what competitiveness is. Although competitiveness is the new "buzz-word" of trade talks, it is a concept without a precise definition among economists. International trade theory and policy are in transition. The postwar consensus paradigm of liberal trade has splintered, and no new model has yet replaced it.

Be that as it may, the debate among economists about the definition and measurement of competitiveness need not deter us. A pragmatic approach to this concept, and a number of indicators of both domestic and international performance, have been suggested by the U.S. President's Commission on Industrial Competitiveness. The challenge is for a country to "produce goods and services that meet the test of international markets, while simultaneously maintaining and expanding the real income of its citizens." This national concept should be distinguished from competitiveness at the enterprise level, although, the two are interrelated. At the firm level, competitiveness relates to the attainment and maintenance of market share. A mercantilist view, quite erroneous and misleading, generalizes this micro position to a macro measure of competitiveness captured by a positive trade balance.

There are other important distinctions between micro or enterprise competitiveness and macro or national competitiveness. Of particular significance is the rapid evolution of global enterprises. The changing strategy and structure of the multinational corporation, which has been termed globalization, has created a wedge between national and enterprise competitiveness that is likely to become more significant as the pace of globalization accelerates in the 1990s. The main determinants of national or locational competitiveness (such as factor endowments, government macro and micro policy, and technological infrastructure) do also affect the home base operations of the global enterprise. But of greater importance in the competitiveness of the global enterprise are firm-specific factors, of which R&D capacity is of increasing importance, and by background factors in the host countries of its global operations. It is important to remember that there are, as yet, no truly global or denationalized enterprises. There are rather multinationals (Japanese, American, Swiss, and so forth) in a process of global adaptation. Governments still equate national and enterprise competitiveness, and this has produced a tension between *technoglobalism* and

technonationalism (new awkward terms likely to reverberate in the 1990s). Finally, on the question of definition, there is growing interest among economists in developing quantitative indicators of national competitiveness. More empirical work in this area will lead to a convergence in definition and methodology that would be a welcome development in facilitating more constructive policy discussion. Let me now turn to the developments in the Triad that stem from the increasing concern over competitiveness.

The Struggle for Competitiveness

Several background factors in the OECD have made competitiveness the focus of the 1990s. One important factor was the strong emphasis on structural adjustment. Efficiency, market forces, and adaptability, from the early 1980s onward (the Reagan-Thatcher revolution), created a climate of opinion for policy fundamentally inimical to the defensive, market-impeding industrial policies for ailing industries of the 1970s. The emphasis has shifted markedly to the struggle for dominance in high-technology sectors. The term innovation policy, current in the industrialized countries, is itself an invention of the 1980s. It has replaced the term *industrial policy* with its unfavorable 1970s connotation. *Innovation policy* is not precisely defined. It is a policy set focused on the promotion and adaptation of new technology.

Another factor that helps explain the high profile of competitiveness is in the international arena. The rapid expansion of world trade has meant that growth has become much more trade intensive. At the same time the nature of trade has changed: an increasing proportion of trade among industrialized countries is in technologically sophisticated manufactured products produced by large firms operating in imperfectly competitive markets. In the twenty years between 1966 and 1986, high-technology goods climbed from 14 percent to 22 percent of world exports of manufactured products. Over the same period, important new players entered the global arena: Japan, of course, and the Asian NIEs. The combined share of Japan and the NIEs in high-technology manufacturing trade rose from just over 13 percent in 1966 to 31 percent in 1986.

The center of the debate over competitiveness and innovation policy concerns the Japanese growth model and the targeting of so-called strategic sectors and technologies. Early in the 1980s the conflict with Japan centered on asymmetry of import access to the Japanese market. While that is still an issue, the targeting debate has widened the conflict to a concern about policies designed to create competitive advantage. The persistent question is: Does the Japanese growth model rest on creating competitive advantage through targeting?

In the very nature of things, the debate about Japanese targeting will remain unsettled. It would require "evidence"—clearly impossible to present—about what the Japanese economy would have been in the absence of what was a unique and complex form of industrial policy. But another reason for continuing dissent on the evaluation of Japanese targeting is that there have been significant changes in policy and players in Japan over the past decade and, indeed, a process of evolution is still under way. Case studies of specific high-technology sectors document a pervasively interventionist policy mix in the 1950s and 1960s, largely orchestrated by the Ministry of International Trade and Industry (MITI). There were a number of important features of the strategy designed to influence the industrial pattern of investment. These included the close cooperation between government and industry; the enunciation of long-term goals (the MITI "visions") that influenced firms' decisions on investment, marketing, skill training, and R&D; the use of organized market structure rather than markets as in the United States, as a policy tool for technology diffusion, risk-sharing, and limiting market access; and coordination of macro and micro policies to achieve a unique "climate-style" policy designed to affect broad forces such as savings, overall risk, and profits.

Beginning in the mid-1970s, there were a number of changes in the policy mix, such as trade liberalization; financial market deregulation, and the yen-shock of the mid-1980s. In

addition, the growing financial strength and global span of Japanese corporations have made them less willing to accept guidance from government bureaucrats. While all these changes are certainly altering the implementation of Japan's innovation policy, the policy remains unique, especially in its singular blend of cooperation, competition, and shared information and objectives. At the heart of the Japanese paradigm is the close and continuous interaction between government and business.

Clearly, the changes of the past decades have not quelled the ongoing debate about Japanese targeting. On the contrary, the debate has heated up. But perhaps the most important development of the 1980s was the reaction of policymakers in the other two blocs of the Triad to Japan's innovation policy model. The U.S. government's response has been largely ad hoc. There is no sign of an overall, planned change in strategy. Indeed, the debate about U.S. innovation policy remains divisive and unsettled. The U.S. government's responses include significant developments in competition policy, changes in the role of the Department of Defense (DOD) and new developments in trade and investment policy. All point to a growing concern with strategic sectors or strategic technologies (not clearly defined in either economic or security terms). All reflect a reaction to the Japanese paradigm.

In competition policy, the first significant change of the 1980s was the passage in 1984 of the National Cooperative Research Act (NCRA), designed to encourage cooperative research among firms and thereby encourage sharing of cost and risk along the lines of the Japanese model by providing some limited exemption from antitrust legislation. Further changes in antitrust are likely to follow as pressure from sectors of U.S. industry mounts. Recently, the administration agreed to support legislation easing antitrust restrictions on joint production activity. In part, the concern with competition policy—a market structure policy instrument—lies in the growing interest in the impact of the Japanese keiretsu on investment, technology diffusion, and market access.

So far the most important venture to come out of NCRA has been Sematech, a government-industry cooperative research initiative in semiconductor technology. The impetus and funding for Sematech comes from the Department of Defense, reflecting its changing role as the size, and even the direction, of spillover between military and civilian technologies have changed. This new orientation of Defense has important international implications in restricting the international transfer of strategic technologies that could hamper U.S. multinationals as they develop more global alliances to support R&D. Sematech has excluded American-based foreign subsidiaries, provoking serious complaints from Siemens U.S., for example.

The merging of military and civilian technologies opens the door to a very broad definition of national security. The Exxon-Florio amendment to the Omnibus Trade and Competitiveness Act of 1988 gives the president power to block mergers, acquisitions, or takeovers of U.S. corporations by foreign interests when such actions "are deemed a threat to national security." Some critics fear this could create significant barriers to foreign takeovers especially under circumstances of heightened investment flows into the United States. .

On the trade front, the two most significant developments of the 1980s were the U.S.-Japanese semiconductor arrangements of July 1986, the first to specify a results-oriented, market-share target for a sector described by the industry and DOD as strategic, and the U.S.-Japan Structural Impediments Initiative (SII) negotiations launched in mid-1989. The latter covers a wide range of subjects including macro and micro policy, corporate culture, and consumer tastes. By tying such a melange to the bilateral trade balance, SII risks inflaming congressional animosity if significant results do not emerge in a timely fashion. Given the problems inherent in the approach, the likeliest outcome is to increase pressure for more results-oriented managed trade arrangements.

Compared with the ad hoc and controversial U.S. response to the Japanese paradigm, the European reaction has been more strategic and coherent. In the Single European Act of 1985, the Commission's mandate to coordinate trade, competition, and technology policies was fully clarified and legitimized via the European Technology Community. It has now

been endorsed at the highest levels of European industry, most explicitly in the information technology field.

On the trade front, a new development since the mid-1980s has been the E.C.'s more frequent and novel use of antidumping as a device to control imports from Japan and the Pacific Rim, especially in information technology products. Antidumping regulation seemingly has been used as an industrial policy instrument for protecting strategic sectors. Although targeted mainly at Japan, the policy has led to disputes with the United States because of new unilateral definitions of rules of origin for specific products.

In the technology area, the newest of the Commission's government-industry information projects is Jessi, a much bigger version of Sematech. Jessi is targeted at a broad range of microelectronics. Explicitly, it is aimed at offsetting Japanese dominance in this "strategic" sector. In its effort to keep Japanese subsidiaries out of Jessi, the Commission was forced to exclude U.S. subsidiaries as well. However, a recent joint agreement between IBM and Siemens for the development of a new generation of semiconductors provides a means for IBM's participation in Jessi. A clause in the agreement prevents either company from cooperating with any Japanese firm in memory chip development. Will Siemens now be permitted to join Sematech?

Finally, the agreement between IBM and Siemens and the more recent accord between Daimler-Benz and Mitsubishi are symptomatic of a highly significant trend in accelerating world interdependence—corporate networking. This trend has been christened technoglobalism because a major factor propelling new forms of technical cooperation (joint ventures, technical agreements, research consortia like Sematech or Jessi, university-industry cooperation) has been the need to tap into technical advances quickly and effectively throughout the world in order to maintain competitiveness. Technical is becoming an essential component of corporate strategy for market access. Government policies to stem the flow of technology at the border—technonationalism—run counter to this powerful trend. The contradiction is apparent, but the resolution of the conflict is certainly not! An attempt to nationalize technology in the face of this networking trend is unlikely to succeed and could be very deleterious by fostering duplication of effort and thus lowering the private rate of return to technological change. It also could reduce accessibility to scientific knowledge and diminish the potential benefits to world growth. Having sketched out the main features of the problem, I will now turn to the question of policy options.

Policy Options

Before solutions can be proposed, it is necessary to understand the root cause and not simply the symptoms of a problem. In an increasingly interdependent world, competition among enterprises in sophisticated products and services is also competition among systems. The low tolerance for system divergence in today's world is the wellspring of the new sources of international friction over competitiveness because it touches the exposed nerve of sovereignty. This is best illustrated by the SII, the fractious discussions between the United States and Japan. This so-called "trade" dispute really concerns fundamental differences in domestic policy. These policy differences are themselves a product of distinctive histories, cultures, and institutions.

There are basically only two policy options for dealing with system-friction. One is presented by the so-called Japan-bashers. Essentially it asserts that the Japanese are so different that the only way of dealing with them is by managed trade targeted on market share, or results-oriented negotiation. The other is to institute a process of policy convergence—that is, to negotiate harmonization of government domestic policy. This would ensure that the global corporation competing in the international economy would be governed by the same set of domestic rules in different countries. Clearly, one would have to specify which domestic policies are most relevant or fall into the trap that "everything" must be harmonized, which would be impossible and lead again to frustration and managed trade. Key policies are not difficult to specify. They would include trade policies, technology

policies, competition policies, and capital market regulation. All of these policies affect the corporation's ability to compete in global markets, and all exhibit significant differences within the Triad. Since the GATT at present is not equipped to deal with such complex issues, the only multilateral forum for launching the process of policy convergence is the OECD. The exclusion of the NIEs from the process presents a serious problem to which I will shortly return.

Even with policy convergence, systemic differences would remain. The grand ideological debate between the Capitalist West and the Communist East sometimes created the illusion that there is only one model of a market economy. In fact, there are three dominant models, and the differences among them become increasingly significant as the struggle for competitiveness heats up. The U.S. paradigm of a pluralist market economy is strongly consumer and short-term oriented. Its great strength is dynamism and flexibility. Producer interest groups generate an ad hoc, "implicit" industrial policy response from government. The continental European models are variants of the social market economy and involve more extensive government interaction with the "social partner". Policy is more planned and more strategic. The Japanese *corporatist market economy* is unique in its long-term view, producer orientation, strategic use of cooperation and competition, and the close and continuing interface with business. These different models are historic and cultural in origin, and efforts to force the pace of system convergence beyond the designated policy areas will be strongly resisted and will generate serious dissonance.

A key difference in the three models is the interface between business and government. The U.S. model is unique in several respects. I have described it as *pluralist activism*. There are many business organizations, and no one "voice" speaks for the private sector. The activism generates a major input into the policy process, and the competitive activism virtually precludes strategic orientation and interaction with government. Indeed, the U.S. system of governance is characterized by an extraordinary diffusion of power.

In sharp contrast to the U.S. model is the highly focused Japanese model. The Keidanren, in effect, is the "voice" of manufacturing business, although perhaps it reflects traditional sectors more than new industrial sectors. The organization of the business sector facilitates the close and continuing interaction with government, especially MITI. A similar close interaction exists between the financial sector and the Ministry of Finance.

In the case of Europe, it is more difficult to generalize. With the possible exception of the United Kingdom, the continental model is far less decentralized than the U.S. model. An interesting and important development, catalyzed by Europe 1992, is the growing influence of the European Roundtable and the links it has established with the Commission. A MITI-like relationship may be emerging with respect to the 1992 internal market policies as well as trade and innovation policy.

These differences in public sector/private sector interface give rise to differences in the process of policymaking, and this process affects policy outcomes. Even if improved policy convergence is achieved, I suspect that these differences will continue to generate friction. It is of interest to note that both the chairman of the U.S. House Subcommittee on International Economic Policy and Trade and an official of the Commerce Department have recently argued that the world economy would be threatened if Japan becomes the model for the NIEs. The implied threat is clear, but the response is not. Presumably, the mode of government-business interface in any country is largely determined by historic and cultural factors.

Let me now turn to my final topic, the key issues of relevance to the NIEs that have been raised by developments in the Triad.

Lessons from the Triad for the NIEs

The three issues I have selected are technology access, international diffusion of technology and changes in comparative advantage, and the OECD policy convergence

initiative. No doubt there are many other lessons from the Triad for the newly industrialized economies.

On the question of access to technology, a new and important development, as previously noted, is the growth of networking by global corporations. It is difficult at this stage to estimate, in quantitative terms, how significant networking will be compared with other sources of technology transfer, public or private. But if it becomes a major channel of technology diffusion, then it could widen the technology gap between the Triad and other countries. Smaller countries outside the three regional blocs would not have access to private sector alliances, such as joint ventures or technical agreements, or to government-sponsored research consortia. The fourth type of network that is growing—new forms of large-scale, enterprise-funded, university-industry cooperation—is predominantly American. Like all aspects of the American innovation system, it is much more accessible to foreigners than the European or Japanese systems. The other side of this coin could well be a new brain drain, especially out of Eastern Europe.

The issue of technology access is fundamental to securing and maintaining competitiveness. While domestic policy, especially with respect to infrastructure in education and basic research, is a key element in all countries, this is unlikely to be sufficient in an increasingly interdependent world environment. There should be a special policy initiative to explore international cooperation in both basic and applied research that would include a far broader range of countries than the Triad of the OECD.

Another and more traditional mode of technology transfer is foreign direct investment (FDI). Again, the policy of the NIEs on FDI should be explicitly evaluated in this context. This reevaluation of policy with respect to FDI is important for several other reasons. One beneficial effect of FDI as a source of technology could be to reduce the brain drain. More importantly, there has been a marked change in the international environment: we are now facing a world of capital shortage because there will be increasing competition for FDI between the former Soviet bloc countries and the LDCs. Such competition, if it takes the form of subsidies and other distortions, will result in lower world growth. The discussion of investment in the Uruguay Round—the Trade Related Investment Measures (TRIMS) negotiations—has not taken any of these more fundamental factors into account. A new initiative in the GATT, perhaps to follow on the Uruguay Round, would be in the interests of the NIEs.

The second issue concerns the impact of rapid technological change on comparative (or competitive) advantage. There is a view in some quarters that micro-electronic-based process innovation, which permits the substitution of physical capital for human capital, will allow the advanced industrialized countries to recapture many of the traditional or mature industries in which they lost advantage to the LDCs and especially to the NIEs. What, then, is the future of industrial processing in the LDCs?

So far, the main effect of new process technologies has been along traditional lines: reduction of labor and other input costs and quality improvement. There is no theoretical reason why this improved efficiency, if the technology is available, should radically alter the present intercountry division of labor. Once again, technology access is crucial. Moreover, as economists keep insisting, it is always a question of relative and not absolute advantage that is relevant.

What is useful in this area are actual empirical studies. A recent publication of the OECD profiled case studies of the Swiss watch industry, the textile industry, and the clothing industry. Only in the case of the watch industry, in which process technology was combined with a new product (the Swatch) and new marketing techniques, was there a clear "recuperation" of comparative advantage. The Swatch became an international winner.

In both textiles and clothing the story is different. Technological progress in textile production was quickly diffused internationally by the export of textile machinery so no competitive advantage was captured by the OECD countries. In the clothing industry, where the scope for process innovation is far narrower, the importance of product innovation and distribution determined competitive advantage.

What is the future of mature industries in the LDCs? The answer will depend on the specific sector. And the answer will not solely depend on the technological factor, that is, on process innovation.

Finally, let me return to the broader issue of the future of a rules-based multilateral trading system. The friction in the Triad and the continuing pressure to manage trade requires, as I have argued, a special initiative outside the GATT. This is not to diminish the importance of the Uruguay Round. A successful conclusion of the Round would result in a significant extension and reinforcement of the GATT and ideally should be followed by continuing negotiations for greater market liberalization in both traditional and new sectors as well as ongoing systemic reform. This is more in the basic interest of NIEs because the alternative to a rules-based system is one based on power, which only the Triad truly possesses.

Nonetheless, the countries excluded from the OECD have a strong and legitimate interest in the policy convergence issue. The OECD has attempted, over the past several years, to establish a better dialogue with some of the NIEs. This process should be pursued with greater vigor now, and the topic of competitiveness should be placed at the top of the dialogue agenda. The issue of policy convergence is a global issue. The NIEs themselves will have to consider whether they are prepared to engage in the process of harmonization through negotiation.

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3

INTERNATIONAL COMPETITIVENESS AND THE CREATION OF AN ENABLING ENVIRONMENT

João Paulo dos Reis Velloso

In her paper, Sylvia Ostry asks "What is the future of industrial processing in the LDCs?" That is the big question. "There is a view in some quarters," Ostry states, "that microelectronic-based process innovation, which permits the substitution of physical capital for human capital, will allow advanced industrialized countries to recapture many of the traditional or mature industries in which they lost advantage to the LDCs and especially to the NIEs."

To be sure, the challenge is broader and more complex. The NIEs in the 1990s are in a new world of powerful regional blocs, with a new techno-industrial paradigm, and increasingly global competition in all markets. In that world the main international concern of the OECD countries, and particularly of the United States and the European Community, will be with "strategic industries," as epitomized in the information and communications technology revolution. Support for "sunset industries" has waned. The trade policy of the regional blocs increasingly will be based on reciprocity, not free trade or traditional protectionism. This is particularly the case with the United States and European Community which seek markets in Japan and the NIEs, especially in high technology industries. At the same time, the actual behavior of the regional blocs implies an asymmetry: emphasis on competition in their internal policy and export policy and increasing use of countervailing duties and antidumping measures in their import policy.

The modern techno-industrial paradigm has two dimensions: the new "generic technologies" (microelectronics, new materials, biotechnology, renewable energies) and the new management model (based on integration and flexibility). Both dimensions threaten the comparative advantages of the NIEs in traditional industries and in the "core" industries of the previous industrial paradigm (electronic and mechanical equipment, steel, petrochemicals). The new paradigm also implies the reduced importance of labor costs and of traditional materials, with new forms of work place administration. Indeed it redefines the conditions for competitiveness and for dynamic comparative advantages.

As a result of this broad challenge, the only strategic alternative open to the NIEs is to reappraise their competitive advantage and to strive for new forms of international competitiveness. And that, in turn, means having access to the new generic technologies and to the new management model.

Ernst and O'Connor point out certain features of the new techno-industrial paradigm that may constitute reasonably high barriers to latecomers of industrialization, especially the Latin American NIEs. These unfavorable features are related mainly to the complexity of the new technologies, their science intensity, their systematic nature, and the shortening of product life cycles. In many high-technology industries, economies of scale are still important (in spite of the progress in flexible manufacturing). The result of these factors may be the creation of "quite formidable thresholds for Research and Development outlays and

for investment in production facilities and in worldwide marketing networks." This is the case particularly in the light of two recent trends: the transition toward computer-based or programmable automation and the establishment of captive worldwide information networks. The latter allow multinational corporations to link production facilities around the world "as if they were divisions within one factory."

But that is not the whole story. A positive outcome is that the new technologies open up "windows of opportunity" and a wide range of possibilities that are not limited to developed competitors. I will mention two of them. First, in all fields there are several technology suppliers. Second, many applications exist in which thresholds for both R&D and investment are not high (for example, the minimum investment needed by firms to enter the mini-computer market has declined over time). The incursions already made by the Asian NIEs in several high-technology lines of products show that new actors can enter the game.

These favorable aspects and instances notwithstanding, Ernst and O'Connor think that the most likely scenario for the decade is one of intensifying technological protectionism, especially because of the inclination for "high-tech mercantilism" by OECD countries, particularly the United States. This tendency means treating science and technology primarily as weapons in international competition. It manifests itself in actions like the tightening of intellectual property rights and in initiatives like the treaty on integrated circuits proposed in 1988 (which meant a departure from the patent system in the sense that its objective was not to obtain a temporary monopoly, in exchange for opening the information to society, but rather to establish to secrecy and block the free flow of technological information).

Newcomers face a twofold challenge: becoming competitive in the new world and overcoming the difficulties of gaining access to high technologies. This implies a need for diversification of technology sources and for new approaches to technology acquisition (besides licensing, new equipment, and "reverse engineering").

Shared Concepts: "Outward-looking Strategy" and "International Competitiveness"

For most Latin American NIEs, the beginning of the 1980s should have been a time when they made a change of course from a strategy based on investment incentives, capacity licensing, and procurement policies in favor of national producers to a strategy more concerned with acquiring international competitiveness and entering the new industrial paradigm. But the 1982 external debt crisis postponed that shift in strategy. As a result of the import saving barriers then erected and of "market reservations" created later by certain countries (for sectors like information technology), many Latin American NIEs are still in the process of transition to more competitive structures and policies. They are stuck, however, with a heterogeneous industrial base: competitive, export-oriented sectors on the one hand and, on the other, internally oriented sectors shielded from competition and characterized by overdiversified, unspecialized productive structures bound to high, mandated, domestic component levels.

To complicate matters, several Latin American NIEs succumbed to bouts of barbarous inflation in the late 1980s. For those nations, the time has come to complete a cycle of economic reforms, essential to eliminating inflation and resuming sustained growth. Paramount in this cycle is the reform of the state. In the economic field, it is necessary to severely reduce the area of operation of the state-owned enterprises (the so-called "Estado-empresário"), to privatize all companies outside of that circumscribed area, and to deregulate many sectors. All of this amounts to a new concept of a "state of strategic actions," responsible mainly for the development strategy and for an active industrial and technological policy, instead of the omnipresent and inefficient state of today.

In addition to the challenges Latin America faces on the economic front, it also faces a political challenge at least as important as the economic one. Namely, how to make a mass

democracy work while being able to control inflation, attain sustained growth, (consistent with income redistribution and with servicing the external debt), and compete in the new world of global markets.

To compete, it will become increasingly important for Latin American NIEs (and for NIEs in general) to build an enabling environment through the joint efforts of the public and private sectors. This environment has to be built through a learning-by-doing process based on shared concepts and joint strategies. The purpose of shared concepts is to create a minimum consensus, in the government and in the private sector, on ideas about the future. In this respect, let us consider the meaning of "outward looking strategy" and of "international competitiveness".

Conventional wisdom defines an "outward looking strategy" as one where an economy has a high degree of openness (liberalization of imports, high import and export coefficients). A strategically more relevant concept can be suggested. Its first element is a systematic attempt to follow the world's trends and developments that affect the country's future comparative advantages or that could bring about a change in its strategy. Its second element is the capacity to act accordingly—that is, to make decisive shifts in priorities and in the economic strategy.

The second shared concept, "international competitiveness," is neither a panacea nor a simple idea. It is a complex and multidimensional concept, with economic, social, and political implications. The first economic implication is obvious. Following Sylvia Ostry's pragmatic approach, competitiveness can be viewed as the capacity to sustain and increase the country's participation in international markets, by being able to meet the standards of efficiency of the rest of the world as to the utilization of factors of production and the quality of the product.

The second economic implication is also rather obvious: competitiveness means a continuous confrontation between production systems, institutions, and social organizations in which business enterprises figure prominently but are nonetheless only one component of a network that links them with the educational system, the technological infrastructure, management/labor relations, the public and private sectors, and the financial system. It is a confrontation of societies. As a consequence, nations are still very important in a world of global competitors.

The third economic implication is not so obvious. Aside from conditions of a general nature, including the business environment, competitiveness is closely related to three things: first, the operations capability of the firm and its factors of production (production technologies, quality of the product, production costs, production equipment, technology acquisition, research and development); second, the relative prices of factors of production and of inputs; and third, the system of economic incentives.

Conventional wisdom warns against the dangers of subsidizing competitiveness (the third factor). But a word of caution has to be said about the second factor, too. Of course, it is natural to take advantage of the low cost of labor and of natural resources if the factor endowments so allow. But perhaps Latin American countries have become too used to real maxidevaluations and to artificial controls on wages to generate the surplus they need to service the interest on their debt. And perhaps exporters have become too dependent on a more favorable rate of exchange, to the neglect of their concern with efficiency. That is why Fernando Fajnzylber considers productivity and conditions internal to the company as the genuine source of competitiveness.

Aside from these economic implications, there is a social implication of competitiveness: an increase in competitiveness has to be followed by a parallel increase in the standards of living of the workers. And, in a broader sense, it should be followed by the gradual formation of an internal mass consumption market, through the expansion of employment and of real wages (in accordance with productivity gains). This phenomenon would be of the same nature as the virtuous cycle of sustained growth that most European countries were able to maintain, in the 1950s and the 1960s.

Competitiveness also has a political implication. It cannot be pursued in a vacuum. It has to be consistent with employment expansion and growth. As a consequence, it has to be associated with industrial restructuring. Dismantling trade barriers too fast and outside the context of a well-defined industrial policy will lead to unemployment and underutilization of capacity.

Sources of Competitive Advantage and Recent Developments in Competition

Shared concepts are the first building bloc for the creation of an enabling environment. Joint strategies are the second one. Before tackling the latter, I want to comment on the sources of competitive advantage and on recent developments in competition in developed economies.

Michael E. Porter has recently published a book on the sources of competitive advantage of nations. Certain types of explanations, he claims, are less relevant in the world of high technology and global competition. Explanations such as cheap and abundant labor and bountiful natural resources, favorable exchange rates (see the Japanese performance under an appreciated yen), and export incentives may enter the picture, but they are not the crucial answers.

For Porter, "national prosperity is created, not inherited. A nation's competitiveness depends on the capacity of its industry to innovate and upgrade". This capacity is specific: to innovate and upgrade certain industries through specific factors (not general factors and not industry in general). In that game, the conditions of internal competition and of internal demand are essential reinforcing elements. Companies in the selected industries benefit greatly from having strong domestic rivals and demanding customers. In the last analysis, as its "created" component becomes more important, competitive advantage at the national level depends increasingly on productivity. As Porter states, "The principal goal of a nation is to produce a high and rising standard of living for its citizens. The ability to do so depends on the productivity with which a nation's labor and capital are employed."

The recent report of the MIT Commission on Industrial Productivity, after appraising the relevant factors external and internal to the industrial sector, concludes that "American industry indeed shows worrisome signs of weakness. In many important sectors of the economy, US firms are losing ground to their competitors abroad." The commission discerns six interrelated patterns of behavior that best characterize the problem: outdated strategies (for example, too much reliance on mass production systems), short time horizons, technological weakness in development and production, neglect of human resources, failures of cooperation, and government and industry at cross purposes.

These conclusions should be considered in the context of recent developments in the field of competition in developed economies. In consumer markets—consumer electronics, automobiles, the garment industry—as incomes rise, the mass production market that gave American companies the edge until the 1960s starts becoming a series of niche markets or segmented markets. At the least, it becomes divided into a mass market at the low end and various segmented markets at the medium and high levels. In these consumer markets the countries that tend to perform the best are the ones that have shown the greatest adherence to the new industrial and management paradigm: Japan, Germany, Italy. They are better equipped than others to meet the needs of higher value and segmented markets.¹

The situation is not very different in the markets for components and intermediate products. For technical reasons, certain standard products can be considered "commodities," even in high-tech areas (for example, commodity chips, such as memory chips and micro processors). Other products are of specific purpose for certain types of users (for example, the

1. The segmentation of markets is not so pronounced in developing economies or even in the NIEs, where, in spite of the influence of modern communications, mass markets will tend to predominate for some time, although a smaller segment for middle and high incomes may exist.

application specific integrated circuits on ASICs). It makes a big difference, in terms of thresholds (minimum size of investment for R&D and for production), whether to produce a commodity component (or commodity intermediate product), where economies of scale are very important, or a component (intermediate product) of special use, where design and software capability may be more important.

In a worldwide market, emphasizing high rates of return will probably be a loser's strategy. The winners accept low rates of return and care mainly about market share. The MIT Commission's report points out that, in the field of consumer electronics, the sequence of American retreats has followed a stylized pattern. The American firms set high goals for return on investment. Foreign firms, by aggressive pricing, force down the return on investment while building market share. Then American firms retreat from that segment. And so on. The lesson is important: in open markets, "those willing to work for the least (on a quality-adjusted basis) set the standards for every one else."

These developments have obvious relevance for newcomers. Because of them, the NIEs' decisions on which lines of products to pursue will depend on things like the size of the companies involved; their willingness to accept low rates of return (and low prices) to gain market share; their capacity to absorb information and communications technologies; their design and R&D capabilities; their capacity to invest in other countries; and the advantages of using the established marketing networks compared with the alternative of creating their own brand name.

Joint Strategies for Strengthening Competitiveness

Simon Ramo has more than fifty years of experience in the area of new technologies. He claims that when the Japanese bid for world superiority in any technological arena, they arrange full cooperation among private companies, the government, banks, and labor. In the United States, the relationships of these entities are essentially adversarial. Ramo concludes, "In an increasingly technological society, we will need substantially more imaginative cooperation between the private and the public sector. Such cooperation has never been the American way, and that will have to change."

The case is even stronger for the NIEs to have close strategic cooperation among government, the private sector, labor unions, and the polity—especially the National Congress and the modern mass parties.

At the international level, there are several units capable of effective economic policy (and not just one—the national economy). These units are "partially dependent variables," linked but not controlled by each other. Regions are becoming increasingly important decisionmakers. Another unit is the autonomous world flows of money, credit, and investment. A third unit is global (or transnational) corporations. But in a world of confrontation of types of societies and of "high-tech-neomercantilism," the nation is still the leading actor, and increasingly so in the case of the NIEs.

At the national level, the state is still in charge of the overall development strategy. But it can no longer make unilateral decisions about industrial and technology policy, trade policy, and priorities for national competitiveness. The private sector has become too big and too important to accept that. Besides, as Gustav Ranis has pointed out complex economies have to have decentralized solutions.

At present, the government and the private sector must cooperate in four ways: (1) to devise and implement the country's main lines of new comparative advantages; (2) to synchronize competition policies and industrial restructuring; (3) to define specific strategies for penetrating the markets of developed countries (and other countries) with new product lines; and (4) to find ways to functionally integrate medium-sized and small companies into the process of industrial transformation. Each of these few fields of cooperation will be discussed in turn.

As to the first field, now that their previous comparative advantages are being threatened, the Latin America NIEs must make a commitment to advanced manufacturing

technologies (AMT) in order to find new dynamic comparative advantages and to reaffirm the existing ones. That means an option for strategies of "following closely" the more advanced nations (if possible) and of "creative imitation" in technology policies.

As a practical illustration of this approach, consider the likely areas of new dynamic comparative advantages for Brazil and the types of factors which account for them:

- (a) Upgrading of traditional sectors: textile, shoes, food industries, on the basis of "created" factors (like design and updating of technology) and of factor endowments (labor and raw materials costs).
- (b) Upgrading of "core" industries: steel, petrochemicals, wood pulp, nonferrous metals, on the basis of "created" factors (use of information technology, existence of modern plants of economic size), and factor endowments (cost of raw materials).
- (c) Development of niche markets, on the basis of "created" factors, particularly for products with long life cycles: airplane industry (small aircraft), unserialized capital goods, specialized electronic components ("noncommodities"), certain software applications, deep-water oil protection and exploration, etc. For most of these niche markets, the specific factor of advantage is the low cost of engineering, software, and design.

With reference to the second field, it will be necessary to synchronize the drive to compete with the drive to restructure the industrial sector. On the one hand, an integrated competition policy—internal competition and striving for external markets—deserves priority. A higher degree of import competition will gradually be added, as certain levels of competitiveness are reached and as safeguards (countervailing duties and antidumping mechanisms) are built. Internal competition will be concerned particularly with removing entry and exit barriers, wherever technically advisable, in order to create a competitive spirit.

On the other hand, industrial restructuring becomes mandatory, to foster sectors with high potential for the development of new comparative advantages or for the creation of the mass consumption market. As to the first group—new comparative advantages—one must reverse the criterion for investment decisions. In the previous stage, concerned mainly with building the country's industrial base, the guideline was to gradually raise the domestic component. That, taken to excesses, generated plenty of high-cost industries. Now the basic question is (for example, in capital goods): What is needed, in this line of product, to become really competitive? The answer to this question will identify the inefficiencies to be eliminated and the improvements in technology and management to be made. A delicate balance has to be achieved. Close cooperation is the only way to reconcile and synchronize, as much as possible, the two necessary efforts.

The third field of cooperation relates to decisions about how to maintain and strengthen the presence of the Latin American NIEs in the markets of the OECD countries. Each nation's new capabilities must be carefully weighed against the new realities of competition in those countries. The point of departure for this commitment to competition is guaranteeing the country's continuing access to the new generic technologies. As Ernst and O'Connor state: "Firms must actively search for the relevant technologies, ferret out the best sources and negotiate the best possible terms of acquisition. Governments must support them in these efforts, making available information which might reduce search costs, fostering contacts between domestic firms and foreign technology suppliers, and creating a policy environment in which technology flows freely."

Among the instruments to ensure access to the needed key technologies are "strategic partnerships" between NIE firms and OECD firms. But for this to become feasible, NIE companies must have some leverage or special asset—be it efficient manufacturing capacity, a complementary technology, or the importance of their markets. A necessary counterpart the NIEs will have to provide is their internal design, engineering, and production capabilities.

On what essential tasks should the NIEs concentrate their effort in higher technologies? They should give first priority to specific technologies necessary to make their core industries and traditional industries internationally competitive.

But it is possible, and necessary, to develop certain lines of advantage in the higher technologies themselves. The Asian NIEs and, to a smaller extent, Brazil have made successful incursions into the markets of developed countries through several strategies: subcontracting of software-intensive technologies. Singapore was successful in the selective imitation of standard low-end products without brand names and the South Koreans used the OEM strategy—sale through the original equipment manufacturer—in the production of TV sets, VCRs, and PCs. Some Korean firms are now trying to “graduate” from this OEM strategy by using their own brands (for example in subcompact cars). Brazil has found niche markets in small airplanes and in various types of capital goods.

Technical constraints and market conditions lead to the conclusion that when selecting a specific strategy, a country has two basic options. In the various markets—consumer goods, capital goods, components and intermediate products—there is the option of manufacturing product lines, or stages of products, that are “commodities” (for mass consumption markets). These are standardized, of general use, produced on a large scale, and capital intensive with generally large investment thresholds. Or there is the option of product lines, or stages of products, that are “non-commodities” (for segmented markets or niches). These are nonstandardized, of specific purpose, and design intensive, engineering intensive, or software intensive. Investment thresholds tend to be much smaller.

The Korean conglomerates (the chaebols) tend to select alternatives closer to the idea of a “commodity.” Taiwan and Singapore prefer other alternatives, particularly Taiwan with its predominance of small and medium-sized companies. Argentina, Brazil, and Mexico have a heterogeneous industrial structure in terms of size of companies. In their case, it is not a question of opting for one alternative to the exclusion of the other. A mixture is possible, depending on the size of the companies involved and their specific capabilities.

However, since these NIEs tend to show an advantage in terms of low-cost engineering and technical services, and since they don’t generally have conglomerates like the Korean chaebol or the Japanese keiretsu, it may be a promising avenue for them to give preference to certain types of “noncommodities.” For example, a recent study about the Brazilian electronics industry makes the point that producers of circuits should concentrate on ASICs, instead of on integrated circuits of general use. However, Latin American NIEs must move towards greater specialization and away from their fragmented production structures in the sector and excessive diversification.

They could also benefit from the successful application of modern technologies to their “core” industries and traditional industries. They could then supply those applications to other countries. Italy has been doing very well in this respect. This leads me to the last field of cooperation: finding a relevant role for small and medium-sized firms in the world of competitive advantage. Several approaches have to be tried.

The first is the creation of subcontracting “networks,” particularly in the form of a cluster of small and medium-sized firms around large, innovative companies. Throughout the world there has been an increasing emphasis on subcontracting links as an instrument to give small and medium-sized companies access to better technology and management methods, and to fortify the country’s competitiveness. Subcontracting involves a long-term, comprehensive, and implicit contract that includes the supply of technical guidance, working capital, and even leasing of equipment from the leader firms, as well as strong incentives and pressures for the subcontractors to innovate. Japan and Italy have shown the way to integrate leader companies and much smaller subcontractors in priority sectors. In developing countries with a large sector of informal firms (the “submerged economy”), big companies capable of technological leadership in their sectors have an important role to play.

A second answer is that small and medium-sized companies can use information technology, and other advanced manufacturing technologies if they follow the Japanese and Italian examples. The idea is to emphasize technologies of social organization of production

(TSOP), instead of technologies of flexible automation (TFA). A study of the Economic Commission for Europe (United Nations) explains: "The greatest potential for computerized manufacturing technology is in traditional job-shops with small and medium size batch production." In the US, nearly 75 percent of items manufactured are made in batches of fifty or less.

The essence of this approach is flexibility and integration. Continuous advances in productivity are obtained through new techniques such as "Total Quality Control," "Kanban" ("Just in Time"), "zero waste," and through information methods such as CAD/CAM. The idea is to integrate, and sometimes to computerize all stages (from design at one end to marketing at the other) without waste of materials, labor, or time. A recent development is the integration of productivity (doing the right thing, the right way, at the right time) and quality management (doing it right the first time; that is prevention). This is the so-called PQM method.

Third, as Simon Ramo claims, medium-sized companies can be much more creative technologically than can large, institutionalized companies. In the case of the NIEs, medium-size and large companies (which are of medium size by international standards) must be very active in absorbing and adapting technology. That is perhaps their number one challenge in a world of regional blocs and restrictions in the dissemination of higher technologies.

Finally, medium-sized companies must become international, if they want to grow continuously. That means they must invest abroad in order to be close to markets, especially in a unified Europe.

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4

PUBLIC SECTOR/PRIVATE SECTOR INTERFACE

Seung Soo Han

The question of whether the "iron-fist" of the state should determine the workings of an economy or whether the "invisible hand" of the market should rule supreme in order to enhance the efficiency of an economy has occupied the minds of generations of economists. The wake of Keynesian economics in this century, which articulated the necessity of government intervention to compensate for structural market failures, shows that the issue has persisted into the modern era.

With the emergence of independent Third World nations in the post-world War II period public intervention in the private sector has again become an important economic and political issue. In less-developed countries market failures are common and economic growth in the presence of already advanced economies has made the ability of an LDC to compete internationally a critical issue. Economic theories originally developed to explain economic forces of the Western world have now been applied to evaluate the role of the public sector in improving the economic status of less developed countries.

However, the performance of government intervention in enhancing international competitiveness during the era of developmentalism of the 1950s-1970s has been poor. Consequently, conventional wisdom now equates international competitiveness with noninterventionist economic policy. Governments everywhere are now being advised to abandon interventionist policies.

But is "nonintervention" the ideal policy stance for all economies at all levels of development? In fact, the role of the public sector changes over time and varies with the competence of the public and private sectors. The point I am trying to make through this rather long introduction is that we need to regard the roles of the public and private sector in a dynamic and interactive sense. It is not feasible to ask whether or not government intervention is desirable without considering the particular characteristics and circumstances of the economy involved. The questions that need to be asked are: how and to what extent should the spheres of public and private sectors interact? Under what circumstances and for how long should a particular pattern of public sector/private sector interface be allowed to take place? And what mechanisms best facilitate the appropriate public sector/private sector interaction?.

Determinants of International Competitiveness and Public Sector/Private Sector Interaction

The scope and the nature of government intervention in an international context are specified by the determinants of international competition. In the first instance, international competition depends heavily on the stability of the macroeconomic

environment. Macroeconomic tools such as exchange rates and interest rates are important factors in determining the price aspects of international competitiveness. For example, price stability and equilibrium exchange rates are generally regarded as essential macroeconomic conditions for strong international competitiveness. Other macroeconomic factors such as the government's budget and political stability (including industrial relations) also affect the competitiveness of an economy in the international market. The government is primarily held responsible for ensuring these macroeconomic conditions. It is also generally agreed that the role of the government is crucial in technology development, education, manpower development, and the adequate supply of social infrastructure.

On the other hand, the more direct factors affecting international competitiveness are microeconomic in character. International competitiveness is not only determined by the cost of production but also by the quality of products, marketing, and management. These factors are determined at the level of the firm and its plants, where actual management decisions are made and production processes take place. This implies that the private sector is primarily responsible for ensuring the smooth workings of the microeconomy.

Thus, the public sector dominates the macroeconomy and the private sector dominates the microeconomy. The government determines the macroeconomic policies under which firms conduct microeconomic activity. But it must be recognized that the public sector can affect the "domain" of the private sector and vice versa. The government can exert great influence on the microeconomy, either indirectly through macropolicy or directly through sector-specific industrial policy. At the same time, microeconomic decisions by firms combine to determine the nature of the macroeconomy since firms can often affect macropolicy by exercising political negotiating power.

Economic Restructuring and Public/Private Sector Interface

Both international and domestic economic conditions change over time and therefore all the variables affecting a nation's international competitiveness change over time. This necessitates the pattern of public/private sector interaction to change over time.

For example, when markets and the private sector are poorly developed, as in the early stage of economic development, government is often the only well organized institution able to coordinate complex economic activities and provide information and physical resources. Under such circumstances it becomes necessary for the government to play a prominent role.

As the economy matures, that is, as the capital labor and financial markets become more institutionalized and systematized, economic activity—which formerly could only be executed by the government—can now be taken over by the private sector (which can more efficiently respond to incremental economic changes). In such a situation, government intervention could be market distorting rather than market conforming and thus impede growth and harm international competitiveness. Empirical evidence shows that the targeting of particular industries and the implementation of sector-specific policies, in instances where an economy has achieved high levels of industrialization, has often proven harmful.

The changing economic environment and the prominence of the private vis-a-vis the public sector, brings us to the issue of liberalization in strengthening international competitiveness during the transitional period of economic development. Liberalization consists of two main aspects. First, it is concerned with reducing the protection of domestic industries from foreign competition. Second, it is concerned with reducing domestic market regulations that cause structural distortions in the economy.

Although deregulation is intended to reduce the costs inherent in a distorted economy, liberalization does not mean completely abolishing all government intervention. The government should claim responsibility for fostering an environment in which private sector initiative can prosper. Furthermore, in some cases sectoral intervention may be necessary to deal with declining industries, especially if the decline in the industry is precipitated prematurely by unexpected short-term international factors.

The Process of Implementing Government Intervention

Once the scope and nature of the role of the public sector in relation to the private sector and international competitiveness are specified, we need to concentrate on the task of sorting out the technicalities in implementing these government policies.

To maximize the effect of government policies, it is not only necessary to clarify government commitments, but it is also necessary to get a general consensus on the details of the decision making process. The government disciplines private firms with respect to performance and regulates their market power. In doing so, it is advisable to set up various committees whose members are made up of government technocrats and private sector experts to elicit more active participation from the private sector in the implementation process. This would elevate the concept of public/private interaction to one of public/private cooperation.

Consistency of government policy and the confidence of the private sector in government policy are two other essential requirements for the successful implementation of government policy. Even though temporary inconsistency in government policy may contribute to the strengthening of international competitiveness in a particular sector, marked swings in government decisions should be avoided.

Government Role Under New Trading Environment

The international environment has changed substantially over the years. Technological developments in transportation and telecommunications have facilitated greater mobility of resources. Political barriers have broken down, and international trade and business have flourished. World economies have become so interdependent that no nation can help but respond to changes in other parts of the world. For example, the rate of inflation of one particular nation affects the interest rates of other countries. The most serious example of this today has been the effect of rising interest rates in the developed world on Third World debt. Changes in the stock exchange of one of the major centers has an instant ripple effect around the globe. Such interdependence necessitates policy coordination on a global scale.

In the field of international trade, for example, the General Agreement on Trade and Tariffs (GATT) provides a forum for facilitating such coordination. However, perhaps because nation-states feel threatened by the increasing exposure of their domestic economies to changes in other parts of the world, the world has tended towards greater protectionism in recent times and the GATT system itself has come under criticism. The main objective of the Uruguay Round is to reverse this trend while strengthening the multilateral trading system based on GATT principles.

The government's role in enhancing competitiveness should be aligned with an international code of conduct in the trade of goods and services embodied in the new trading regime that will emerge as a result of the Uruguay Round negotiations. Since a liberal economic regime should not be marred by various non-tariff protectionism, export subsidies or bilateral agreements such as voluntary export restraints (VERs), governments should play a more sectorally neutral role and avoid the policy of industrial targeting.

However, any international code of conduct which would form the basis for international cooperation should be flexible and must be able to accommodate changes in the international political economy. It must also be able to accommodate the interests and conditions of all participating nations as much as possible.

In conclusion, it is clear that the role of government in international competitiveness depends on the characteristics of the economy in question as well as the international circumstances in which it finds itself. Similarly, as the world's economies become more mutually interactive and interdependent, international economic agreements as well as individual governments' economic policies must be responsive to the international climate and to the circumstances facing individual economies.

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INTERNATIONAL COMPETITIVENESS AND INDUSTRIAL POLICY

Ajit Singh

What Is Industrial Policy?

Government policy can affect industry in many different ways: through macroeconomic policies that affect interest rates and the level of inflation through exchange rates, and the level and the rate of growth of economic activity; through antitrust laws, industrial subsidies, tariff policies, and taxation policies; and through infrastructural expenditures on education, health, roads, harbors, etc. These are only a few of the many obvious channels of government influence on industry. In this broad sense every country, including the United States, pursues policies that affect industry in one form or another. However, most people would agree that the United States does not have an industrial policy, while Japan and other countries do.

It seems to me that what is at issue here is whether these government policies affecting industry are coordinated or viewed as a coherent whole or, more importantly, whether the country has a strategic view of its industrial development in relation to the world economy. In this more restricted sense, countries such as Japan, South Korea and many others do have an industrial policy. Japan's strategic view is expressed by former vice-minister Ojimi, who described the role of the Ministry of International Trade and Industry (MITI) in funding Japan's industrial development during the 1950s and 1960s—the period of that country's most spectacular industrialization drive as follows:

The MITI decided to establish in Japan industries which require intensive employment of capital and technology, industries that in consideration of comparative cost of production should be the most inappropriate for Japan, industries such as steel, oil-refining, petrochemicals, automobiles, aircraft, industrial machinery of all sorts, and electronics, including electronic computers. From a short-run, static viewpoint, encouragement of such industries would seem to conflict with economic rationalism. But, from a long-range viewpoint, these are precisely the industries where income elasticity of demand is high, technological progress is rapid, and labour productivity rises fast. It was clear that without these industries it would be difficult to employ a population of 100 million and raise their standard of living to that of Europe and America with light industries alone; whether right or wrong, Japan had to have these heavy and chemical industries. According to Napoleon and Clausewitz, the secret of a successful strategy is the concentration of fighting power on the main battle grounds; fortunately, owing to good luck and wisdom spawned by necessity, Japan has been able to concentrate its scant capital in strategic industries.

At the end of the Second World War the bulk of Japan's exports consisted of textiles and light manufactured goods (labor intensive products). Although such an economic structure may have conformed to the theory of comparative advantage (Japan being a labor surplus economy at the time), MITI believed it was not viable in the long run, especially if Japan

wished to raise the standard of living of its people to European and North American levels. The Japanese government used a wide variety of instruments to deliberately bring about a change in the structure of the country's comparative advantage. The most important of these policies was concerned with the selective allocation of bank finance to particular industries and firms, import controls and protection, control over foreign exchange, and importation of foreign technology.

Although in the 1950s and early 1960s such a program could be justified to an extent by the infant industry argument this policy has continued in an attenuated form ever since. More recent thinking about Japan's long-term industrial structure envisages a shift toward the so-called knowledge intensive industries. Two leading academic observers, Professor Caves of Harvard University and Professor Ukeusa, have outlined the operations of Japan's industrial policy in the following terms:

Each sector of the Japanese economy has a cliental relation to a ministry or agency of the government. The ministry, in addition to its various statutory means of dealing with the economic sector, holds a general implied administrative responsibility and authority that goes well beyond what is customary in the United States and other Western Countries. While the Ministry of International Trade and Industry (MITI) plays the most prominent role, its operations are not distinctive. The industrial bureaus of MITI proliferate sectoral targets and plans; they confer, they tinker, they exhort. This is the economics by admonition to a degree inconceivable in Washington or London. Business makes few major decisions without consulting the appropriate governmental authority; the same is true in reverse.

Nonprice Factors and Investment

The competitiveness of an economy is not just a function of its wages and prices (relative to other countries), but it is also greatly influenced by nonprice factors (for example, delivery dates, quality, design, and performance of the country's products). In this connection it is again worth reflecting on the postwar experience of Japan.

Japan started with an Asian level of wages in the early 1950s. Since then Japan's real wages have risen at a much faster pace than have wages in the United States or the United Kingdom; yet Japanese products have been able to capture increasing shares of the world market, including the markets in the United Kingdom and the United States. Between 1956 and 1976, the U.S. unit labor costs, relative to that of other countries, fell by almost 50 percent. This coincided with a fall in the U.S. share of the industrial countries' exports of manufacturers from about 25 percent in 1956 to about 17 percent in 1976. Over the same period, Japanese industry more than doubled its share of the industrial countries' exports despite a 36 percent increase in its unit labor costs. Similarly, West Germany's market share rose by nearly a quarter during these two decades notwithstanding a more than 60 percent increase in its unit labor costs (Kaldor 1978).

Certainly, wage costs matter in competition—but competitive dynamics, technology, product quality, and other nonprice factors matter far more in the long run. At the aggregate level there is reason to believe that these nonprice factors are intimately connected with the rate of investment and the rate of growth of an economy. Economies that have a high rate of investment and which grow quickly are thereby able to achieve faster technical progress, more product innovation, and improvements in other important nonprice spheres of competition. In addition, the take-home pay of workers in a faster-growing economy generally will grow quickly. Other things being equal, this is likely to lead to better relations between workers and managers, with consequent benefits to productivity and performance.

Technical Progress and Economic Growth Abroad

Suppose a country is initially in equilibrium in its balance of payments, has full employment and low inflation, and the standard of living of its people is increasing at a

satisfactory rate. Now assume that there is faster technical change or faster economic growth in some other country or countries. In a competitive world economy this situation could either be helpful or harmful to the original country.

Long ago, Dudley Seevs made a useful distinction between "complementary" and "competitive" aspects of world economic expansion for any particular country or region. Economic growth elsewhere is "complementary" to the extent that it raises demand for the country's exports. Economic growth becomes "competitive" insofar as it leads to the development of alternative sources of supply. So, from the viewpoint of a country or a region, the development of the world economy may be characterized by a changing balance between "complementary" and "competitive." For example, the centrally planned economies of Eastern Europe and the Soviet Union industrialized very fast from 1960 to 1980. Their share of world industrial production increased from 17 percent to about 27 percent over these two decades. It would be difficult to maintain that this industrialization harmed, or was achieved at the expense, of the West European countries. On the contrary, most observers would agree that, if anything, West European industrial development was helped by industrial demand from Eastern Europe. On the other hand, it is certainly arguable that the industrialization of Japan during the same period has been competitive with the expansion of industry in older industrial countries like the United Kingdom and the United States.

Long-Run Industrial Disequilibrium

International competition may be helpful to a country in all the ways that the standard economic theory argues under its normal assumptions. However, this competition also may be harmful, a possibility not normally recognized in the standard theory except in the most recent literature. Foreign competition may harm a country's growth and industrial development through three possible channels: the level of demand, the structure of demand, and, most importantly, investment. The last channel, the level and direction of investment in an economy, may be affected in different ways. First, foreign competition influences a country's balance of payments, which in turn influences the level of aggregate demand and hence investment decisions. Second, international competition may bring about a fall in the rate of profit, which will also influence the inducement to invest. Third, if foreign economies enjoy a faster rate of growth or greater profitability, this may not merely mean less foreign investment in the original country. It also may result in the switching of investment abroad by that country's companies.

If the economy happens to be in disequilibrium (for example, in a weak competitive position and with balance of payments difficulties), all these effects could work together in a cumulative and circular chain of causation in the way suggested by Myrdal, and thereby help to perpetuate the disequilibrium. Such a country, because of the operation of these forces, will tend to have a lower rate of increase of effective demand, and hence a lower rate of investment, and a lower rate of technical progress and growth and productivity. Therefore, it will be in an even weaker competitive position than before, especially since the same forces will be working in the opposite direction to improve the position of its successful rivals.

The original source of any long-run disequilibrium (that is, the reasons why the economy is in a weak competitive position and why balance of payments difficulties arose) is not particularly important. The imbalance could have arisen because of the nature and pace of economic development abroad; this is in fact the most likely source. It could also be due to the choice of an incorrect exchange rate or to weaknesses that gradually developed in the internal economy, (for example, on account of a deterioration in industrial relations or in the quality of entrepreneurship). These factors could have acted singly or together to produce the initial disequilibrium. But whatever the cause, according to the theory of cumulative causation, such an economy will suffer a continual contraction in its manufacturing sector (if it is competing mainly in manufactures), if it continues to participate in international economic relations on the same terms as before. Countries faced with such circumstances may

resort to industrial policy (including fiscal and monetary policy, tariffs, wage-price controls, etc.) to change their economic structure and the terms under which they participate in the international economy, so as to prevent further deterioration of their economic position.

Institutions, Past History, and Industrial Policy

Countries have followed different kinds of industrial policies with distinct results. More significantly, countries have followed similar industrial policies with rather different results. One argument is that the success of a country's industrial policy depends on its past history, on how acceptable the policy is to business, labor, and other relevant groups, and on the institutional structure of the economy and the society. In this context it is interesting to note that private banks in West Germany are thought to have played a coordinating role in the country's post Second World War industrial development similar to that carried out by governments elsewhere.

Developing Countries

What lessons can the developing countries draw from the postwar history of industrial development with respect to two urgent questions that face them. First, how open should their economies be and to what degree they should integrate with the world economy? Second, what should be the proper spheres of the state and the private sector in industrial development, and how should cooperation between them be promoted to achieve industrialization and to meet the basic needs of the people?

With respect to the strategic question of openness, or how closely a developing country should integrate its economy with the world economy, the answer cannot simply be in terms of free trade and liberalization. Even modern neoclassical theory rejects this view: in a world of imperfect competition, learning-by-doing, and static and dynamic economies of scale (that is, in the real world), the optimal level of trade for all countries is not free trade. Openness, I would argue, is a multidimensional concept. Apart from trade, a country can be open or not so open with respect to financial and capital markets and in relation to technology, science, culture, education, and inward and outward migration. Moreover, a country can choose to be open in some directions, say trade, but not so open in others, such as foreign investment and financial markets. No unique optimum degree of openness will hold true for all countries at all times. A number of factors affect the desirable nature of openness: the world configuration, the timing, the sequence, the past history of the economy, and its state of development. There may be serious irreversible losses if the wrong kind of openness is attempted or if the timing and sequence are incorrect. The significance of the world configuration in this context cannot be exaggerated. Developing countries with successful industrial policies have been able to arrive at the appropriate kind of openness for their economies in the light of their specific circumstances.

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THE ROLE OF GOVERNMENT: EDUCATION POLICY, TECHNICAL CHANGE, R&D, AND COMPETITIVE ADVANTAGE

Carl J. Dahlman

Introduction

Increased Internationalization, Competition, and Technical Change

In the past two decades there has been an increase in the internationalization of the world economy. The share of trade in GDP of virtually all economies has increased.¹ With this internationalization there has been an increase in international competition. The rate of technical change has also accelerated. The acceleration in technical change itself has helped increase the internationalization of the world economy through new developments that have reduced transportation and telecommunications costs. In addition, the drive to offset high fixed R&D costs by expanding production over larger markets has contributed to more international competition.²

The increase in international competition raises the question of the role of government/private sector interaction in increasing international competitiveness. The respective roles of government and the private sector in fostering international competitiveness are multifaceted and varied. The most appropriate roles will depend on the respective strengths and competence of the private entrepreneurs and government officials, the extent of government involvement in the economy, and the stage of development of the economy in question.

New Dimensions of International Competitiveness

International competitiveness is no longer based on low production costs stemming from low wages. The direct labor content of most products is decreasing rapidly as they are produced with more automated technologies—and a greater percentage of total costs is taken up by research and development, design, marketing, and distribution. Quality, delivery times, after-sales service, responsiveness to customer needs, innovativeness in product design, greater product differentiation, aggressive marketing, and efficient distribution networks are increasingly important for capturing markets. Therefore, while some aspects of competitiveness relate to what takes place inside an enterprise, others have to do with the environment outside the enterprise. This environment includes the efficiency of the

1. Between 1965 and 1987, for example, the weighted average share of exports of goods and nonfactor services in GDP increased from 12 percent to 19 percent for the 120 economies reported in the World Bank's *Development Indicators*.

2. For a summary of some of the key trends in technological change in industry, see Dahlman (1989).

supporting industries that provide inputs and services, basic physical infrastructure (such as communications and transportation), institutional infrastructure (such as the legal system and the technological support infrastructure), the quality of human resources, and the general macroeconomic environment that affects some of the basic prices such as interest rates, exchange rates, inflation, and the decisions to invest.

As a result, what is involved is a whole system that goes beyond the individual firm to the national economy and even to the international economy, since it involves changes in relative rates of inflation and exchange rates across countries, trade regimes, international transportation, distribution, and sales networks. However, despite the growth of global corporations and strategic alliances between companies across national boundaries, the nation state is still an important unit of analysis, and from the perspective of each nation there is an important role for government/private sector interaction to increase international competitiveness .

From this it is clear that international competitiveness is multifaceted. Technology and direct production costs are important elements, but so are the form of organization of production within firms and the interactions among firms and between firms and other elements of the supporting environment. In addition, in a rapidly changing world there is a premium on reacting quickly to changing demands and situations. There is a greater need for reliable information on changing market trends and technologies. There is also a premium on flexibility in capital and labor markets to redeploy resources out of declining industries into emerging industries and on reacting quickly to new opportunities. This requires new forms of interaction between the government and the private sector (ranging from regulatory functions to specific institutional development) to address critical areas where the market may not work very well.

The Roles of Government and the Private Sector

In most economies the role of government is primarily that of provider of public goods and services, and regulator. It often gets involved in specific production activities, but the world trend is toward a greater role for the private sector. Generally, it is private actors that carry out economic activity. Government may be able to help by providing direction and support, but ultimately it is the private sector that must compete internationally and that must make the investment of time and effort necessary to improve the nation's competitiveness.

Four different levels of the role of government in supporting international competitiveness should be made explicit.³ At the *macroeconomic level* government policy should create a general environment that stimulates investment and growth. Most studies indicate that reasonable exchange and interest rates, low inflation, and good growth prospects are essential for fostering increased international competitiveness.

At the *second level* government should provide an appropriate incentive and regulatory environment that stimulates firms to improve their performance and that rewards them for such improvements. In most cases this includes reasonably free access to inputs at international prices and a competitive market environment. External and internal competition is critical for inducing firms to improve their level of technology and to keep up with new and better products and processes. Without this pressure it is not likely that firms will undertake the technological effort required to improve quality and efficiency. But while increasing competitive pressure, government policy should provide freedom to make investment decisions. It should also strive to improve flexibility in capital and labor markets so that resources can move out of declining firms and sectors into emerging firms and sectors.

3. This is a subset of the much larger scope for government that includes the provision of public-good types of services such as the legal, monetary, national defense, internal security, and health functions, as well as a welfare net for the poor.

At the *third level* the government has an important role in the provision of different kinds of infrastructure. This includes physical and service infrastructure such as transportation, telecommunications, power, etc.⁴ It also includes the educational infrastructure—namely, much of the formal and some of the informal educational systems to educate and train people for productive activities. In addition, it includes a large part of the institutional support infrastructure necessary for international competitiveness. This covers aspects such as specialized institutions to promote exports (including marketing support and finance) and the technological support infrastructure (including norms and standards, information services, industrial extension, and public research institutes).

At the *fourth level* the government may want to target specific technologies, industries, and firms to promote international competitiveness. This can be accomplished through a wide range of instruments that can be directly tailored to the promotion of specific products or industries, based on infant industries in strategic areas. These instruments include:

- direct participation in the sector through state enterprises;
- trade protection and export promotion;
- sector-specific, publicly financed research and development carried out in the public R&D laboratories, universities, and firms;
- fiscal and financial incentives for industrial R&D in the sector for the establishment of firms in the sector and for the purchase of the outputs of the sector;
- government procurement guarantees or purchasing preferences for specific products of the sector;
- control of direct foreign investment in the sector;
- industrial organization instruments that can be antitrust oriented to prevent concentration and encourage licensing; or the opposite, to promote concentration and large size; and
- development of technical human resources appropriate for a specific targeted area.

In our discussion the first level (macro environment) will be taken for granted. The second and fourth levels (incentive and regulatory environment, and sectoral targeting) will be addressed in the next session. This session will focus on those aspects of the third level that have to do with human resource development and the technological infrastructure.

Technology, Technological Capability, and the National Technological Capability System

Technology

Technology and technical change are major driving forces behind the structure of production, the opportunities for trade, the increase in international competitiveness, and the growth of national income. Economic development, thus, is intimately related to the effective use of resources and to the expansion of the range of goods and services produced to satisfy needs and increase social welfare. The development success stories of the past two decades can be attributed in large part to the capacity of those economies to absorb modern technology and to integrate it fully into productive and service activities.

Technological Capability

In order to use technology successfully, a country needs technological capability. *Technological capability* is the ability to scan, assess, select, use, assimilate, adapt,

4. Traditionally, because of economies of scale and the public-good nature of many of these services, most have been provided by government or some government-sanctioned monopoly. However, due in part to technical change, particularly in a sector such as telecommunications, there is the possibility of a greater role for the private sector in the provision of many of these services.

improve, and develop technology that is appropriate to changing circumstances. Technological capability is embodied in people and institutions and requires networks and interactions among many types of information and agents—public/private, local/foreign. Technological capability is important because technology is constantly changing, and enterprises and countries must be able to react to and take advantage of such changes and new possibilities to make more efficient use of limited resources and to remain competitive in a changing world. Technology is not hardware. Rather, it is the use of knowledge, means, processes, and organizations to produce goods and services.

The National Technological Capability System

A country's national technology capability system includes the network of institutions and agents in the public and private sectors, that make effective use of existing technology, that introduce into the local economy better goods and services regardless of whether they are new by world standards, and that improve and develop technology appropriate to local needs. The local technological capability system also includes the national education and training system that produces the technical human capital that is the basis for technological capability.

Based on the experience of many countries, four key areas have been identified as critical elements for technology policy and the technological support infrastructure that needs to be put in place in order to compete successfully. These are:

- acquiring foreign technology efficiently to reduce the gap between best local practice and international practice
- using and diffusing technology effectively, especially to reduce the dispersion in economic efficiency among firms in different sectors and within sectors
- improving and developing technology to keep up with the newest developments, and
- developing an adequate technical human capital base in order to undertake the above tasks effectively.

For each of these tasks there are many important aspects of government/private sector interaction, as will be developed below.

Acquiring Foreign Technology

Technology policy in advanced countries is concerned primarily with innovation and R&D. However, developing technology requires large financial and human resources. In addition, the world technological frontier is evolving very rapidly, and there is a large stock of foreign technology available. Therefore, a key element for a developing country's technology strategy is acquiring foreign technology cheaply and effectively, and then adapting it to local conditions. Imports of foreign technology should not be seen as substitutes for local development, but as complements. Evidence at both the firm and the country level suggests that technological "follower" strategies can have high returns, at least until the technology gap with the leaders narrows. Japan and Korea, for example, have progressed very rapidly by being very good at acquiring and adapting foreign technology.

Foreign technology can be acquired in many ways:

- provided by foreigners through direct investment, although they retain ownership of the technology;
- purchased from foreigners through technology licensing contracts;
- acquired through indigenous efforts to translate foreign technological knowledge into specific methods by foreign study or training, reverse engineering, copying, etc.

The degree to which an economy depends on one form or another of technology transfer depends on how it views local versus foreign control, on the availability of technology through different modes, and on how well it makes effective use of those modes. This also involves an important interface between government and the private sector. Government can affect the acquisition of foreign technology through its policy on direct foreign investment,

foreign technology licensing regulation, intellectual property regime, and its own purchase of foreign technology through public enterprises. It can also affect the acquisition of foreign technology more indirectly—through its contribution to the formation of local technical human capital that is able to assess, select, negotiate for, and assimilate foreign technology, as well as through institutional support infrastructure such as technological information centers.

Ultimately, however, except in the case of public enterprises, it is the private sector that needs to acquire the foreign technology. How well it does so depends not only on the government's regulatory regime and the public support infrastructure, but also on its own efforts. Searching for information on alternative technologies, and assessing, acquiring, and assimilating them entail investment of time and resources. How much effort the private sector is willing to exert and which modes it will prefer depend on its own interests and capabilities. Moreover, this in turn will be affected by the broader incentive environment in terms of the pressures to improve quality or efficiency or to keep up with new technology because of local or foreign competitive pressure.

The way that different countries have approached the acquisition of foreign technology has varied greatly. On one extreme is India, a country that until relatively recently had a government regulatory policy of very tight control on the acquisition of foreign technology, coupled with a protected domestic environment and little incentive to export. The private sector has limited possibilities for acquiring foreign technology. The protected and heavily regulated domestic market also provided little incentive to firms to acquire foreign technology to improve their economic performance. As a result, the country lagged behind technologically, and that has been an important impediment to greater international competitiveness. On another extreme is Singapore, a country with a government regulatory policy that has been open to foreign capital and foreign technology and that has an open trade regime. The result has been a very internationally competitive industry that is dominated by foreign firms. A variant is Korea, which until recently had relatively tight regulatory controls on direct foreign investment and foreign technology licensing, but a strong outwardly oriented policy environment. In that environment, Korean firms made great efforts to assimilate foreign technology. In fact, the government controls helped some firms to negotiate better terms for technology. However, once Korean firms required more advanced technology it became harder to obtain it with such tight import controls, and the government was forced to liberalize foreign investment and technology transfer regulations. In addition, as will be seen below, Korean firms have had to invest more in their own technological effort in order to keep up to date with the new technologies used by their foreign competitors.

Using and Diffusing Technology

The challenge for a developing country is not just acquiring foreign technology, but also using and diffusing the technology efficiently. One of the most striking features in analyzing virtually any industrial sector in a developing country is the tremendous diversity in economic performance of firms even in the same subsector. Differences in economic performance are due in part to the very different nature of firms that coexist in the same sector. Most structures are fragmented, characterized by firms ranging from traditional craft-based industries in the informal sector, on one extreme, to modern, often large firms using the latest equipment and technology, on the other. Some of the differences in performance are due to the nature or vintage of technology and capital equipment. However, there may be quite different economic performance levels even among firms using the same equipment. In these cases, the differences are due to their ability to use technology effectively.

Efforts to diffuse technology have high economic returns in terms of increasing the competitiveness of local industry. In fact, even among some OECD countries there is

increasing recognition that excessive emphasis on R&D and innovation has often led to insufficient attention being paid to promoting the use and diffusion of existing technology.⁵

To use and diffuse technological information effectively, it is necessary to develop appropriate networks and institutions that can tap into information about technology and market trends both worldwide and locally, and to help local firms use this information to improve their performance. These networks and institutions do not develop automatically or quickly. Furthermore, they are often plagued by problems of economies of scale, large differences between social and private costs and benefits, and negative unforeseen consequences. Therefore, many require initial government action to get them started or to make them develop ahead of the market.

The experience of some of the East Asian economies is very relevant here. They have developed a variety of institutions and mechanisms to promote diffusion and efficient use of technology.

Information, Training, and Extension

In Japan some of the clearest examples of government action in this area date from the period immediately following the Meiji Restoration (1869). These include establishment of government-owned factories in several sectors (textiles, shipbuilding, engineering, steel, paper) to demonstrate modern technology introduced from abroad. Between 1872 and 1892, the government invited more than 5,000 foreign experts to help run the government-owned factories and to give training.⁶ The Ministry of Engineering also established schools for engineering, telecommunications, and iron and steel production. Many Japanese were sent overseas for study and returned to replace the foreign experts in the government factories and training institutions. In addition, the federal government and prefectural governments established national testing and research institutions to provide technical standards for industry.⁷

In the rapidly growing East Asian Newly Industrializing Economies (NIEs) of East Asia, special institutions and mechanisms have been developed to promote the diffusion and use of technology, many of which involve special cooperation between the government and the private sector. In most cases, the effective organizations do more than merely provide technological information. In Korea, the Small and Medium Industry Promotion Corporation (SMIPC) provides financial assistance; training; collection, analysis, and dissemination of business and technical information; and industrial extension services concerning management and technology. The Korea Institute of Economics and Technology (KIET) is an autonomous economic research institution and technical information center, established to enhance Korean industries' competitiveness in the world market and to help the government and industry. It has five overseas offices and a strong representation from the private sector on its Board. Much of its work is strongly oriented toward identifying market opportunities worldwide for Korean products and helping Korean businesses take advantage of these opportunities. KIET also has an extensive on-line database connected to Korean and foreign data sources. Data can be accessed from 16 cities around the Korean peninsula. The Korean Productivity Center (KPC) promotes the adoption of micro-electronics-based factory automation by local firms. It has a Flexible Automation demonstration center that shows

5. See OECD (1988) and Ergas (1987).

6. Most of these factories were sold to the private sector in 1880 because of a fiscal crisis, but their demonstration effect was very important.

7. The Japanese government has also developed comprehensive policies and institutions supporting small and medium enterprises (SMEs). These include financial assistance, tax reductions, technology assistance, facilitation of infrastructure for joint businesses, and a favorable legal framework. Technological assistance has included information provided through various technology guidance and support institutions at the provincial level and factory visits by experts, subsidization of new technologies, subsidies to adaptive R&D projects applied by SMEs, and training programs for engineers and technicians working in SMEs. For more details see Nagaoka (1989).

what the technologies can do and offers extensive training in the use of the new technologies as well as technical assistance to local firms.

In Taiwan, the China Productivity Center (CPC) does not provide financing, but focuses instead on training and extension. Besides providing an extensive array of courses and technical extension, it sends out teams of experienced engineers to visit plants throughout Taiwan to help manufacturers solve specific technological and productivity problems. The teams study the problems and make suggestions for improvement. Over a period of two years the CPC visited more than 1,000 plants and made more than 4,000 suggestions for improvement. It also carried out more than 500 research projects on improving production efficiency. Moreover, the CPC works as a catalytic agent linking entrepreneurs with research centers to solve difficult technical problems. In Singapore, the National Productivity Center (NPC) provides extensive training in new productivity-increasing techniques.

Subcontracting

Efficient subcontracting links are an important element of increased competitiveness. Subcontracting involves a long-term comprehensive and implicit contract that includes the supply of technical guidance, working capital, and even leasing of equipment from the parent firms, as well as strong incentives and pressures for the subcontractor to innovate.

In Japan, where there already is a well-established tradition of subcontracting, 65 percent of all small and medium enterprises produce under subcontracting arrangements, and 82 percent of them are specialized in such production.⁸

Other East Asian economies such as Korea, Singapore, and Taiwan have been actively trying to promote greater subcontracting. In these economies the government works closely with foreign and large local firms to increase local subcontracting. However, rather than impose strict local content requirements (which can hurt competitiveness if subcontractors cannot produce to international cost and quality standards), they focus on developing efficient local subcontractors. This is often done as part of broader development programs for small and medium industries. However, it also involves special technical assistance and quality control programs.

Standards, Testing, and Quality Control

To meet increasing demands for quality products in international markets, as well as to ensure fairness in domestic trade and public safety, an economy needs an effective system of standards, testing, and quality control. To ensure quality there must be agreed upon standards, a capability to measure or test standards, and a procedure and capability to be able to exert quality control. Ideally, an economy needs an agency that maintains primary standards or internationally accepted standards to provide basic references for calibration and documentation. This is almost always a government institution because of economies of scale, public good, and regulatory aspects. Certified private or public laboratories, appropriately equipped and staffed, are needed to perform the measurement and testing services. These become quality assurance laboratories for producers. Finally, producers need their own laboratories and staff to undertake quality control and testing.

Developing an adequate standards testing and quality control system requires significant interaction between the government and the private sector. In particular, extensive consultation and significant investments are needed in basic metrology and in institutional development of the standard-setting and regulatory aspects. An equally difficult but essential step is instilling a consciousness of standards and quality in the private sector, especially in developing economies relatively unfamiliar with the higher quality demanded by the export market.

8. Nagaoka (1989).

The introduction of quality control systems in Japanese enterprises shows the active interrelationship between government and the private sector typical of Japan. Two key institutions promoting this effort were the Japanese Standards Association and the Union of Japanese Scientists and Engineers, established in 1945. An Industrial Standardization Law (establishing the legal framework for developing the industrial standards system and for administering a certification system linked to standards) was passed in 1949, although national certification activities actually began in 1921. The certification system encouraged enterprises to adopt quality control systems and also facilitated the development of subcontracting in Japan. Contracts with foreign experts were instrumental in developing consciousness of quality. The extensive adoption of quality control in Japan, and the success of the concept of total quality control are attributed not only to strong national promotion efforts, but also to the high level of education of Japanese workers, the Japanese management style that encourages worker participation in production improvement (through mechanisms such as quality control circles), and the fierce competition for quality among Japanese producers.⁹

Improving and Developing Technology

Technology is dynamic. It involves continuous advances. Some of these are minor changes in processes, inputs, equipment, or organizational arrangements. Other advances involve completely new approaches, new products, and new processes that can only be embodied in new production facilities. In addition, technology has many tacit elements, and it has to be adapted to the specific environment in which it is used. That environment is changing constantly, and the technology must be adapted accordingly as more is learned.

It has been extensively documented that the cumulative productivity impact of small incremental changes that are usually undertaken on the shop floor can be much greater than the initial introduction of a major new technology. Therefore, the technological effort that takes place on the shop floor and in the R&D labs of productive enterprises, which is where most of this effort takes place, may contribute more to an economy's competitiveness than the work undertaken in public R&D labs and universities.

In most developing economies with large, public infrastructures for R&D, the orientation of these institutes is academic and removed from the needs of the productive sector. Typically, the ministries under which they function do not stress support of the productive sector and do not provide any incentive to do so. The incentive structure would change if these institutes were required to finance part of their operational costs through support services. In Japan, research centers historically played an important intermediary role in assessing, acquiring, adapting, and improving foreign technology for use by the productive sector.¹⁰ It is only since Japan has caught up with the West that its research institutes have focused more on basic, pre-commercial research. In Taiwan, publicly supported research institutes still primarily serve an intermediary function, and thanks in part to the effectiveness of that role, Taiwan has been able to climb up the technological ladder to the more technology-intensive areas of electronics.

In the ten economies represented at this seminar, the share of GNP spent on research and development varies widely from a low of 0.3 percent in Indonesia to a high of 2.7 percent in Hungary, which is equal to the levels of developed economies like the United States, Japan, and the Federal Republic of Germany (Table 1).¹¹ However, more important than the percentage of GDP that is spent on R&D is the purpose for which it is used and the

9. Ibid.

10. Ibid.

11. International comparisons such as these are difficult because of differences in definition and coverage. The numbers should be interpreted with caution. These problems of definitions and coverage are particularly acute in comparisons with centrally planned economies, including Hungary and Yugoslavia.

efficiency with which it is used. In the United States, for example, a large share is spent on defense, and there is increasing evidence that the spillover from such expenditures into the civilian sector, where it will more directly affect competitiveness, is becoming more limited. In addition, in a developed economy like that of the United States, a larger share is spent on basic research than on applied or development work. By contrast, in Japan, very little is spent on defense; what is spent is much more focused on development and applied work that has more relevance for the competitiveness of the productive sector.

A revealing indicator of the applicability of R&D is the share of spending on R&D by productive enterprises as opposed to by the government.¹² Korea, Hungary, and Japan have the highest share of R&D expenditures undertaken by productive enterprises. India, Chile, and Brazil have the highest shares of R&D expenditures by the government.

The case of Korea is particularly impressive because of the dramatic increase in R & D expenditures by the government over the last 15 years, a period when there was a more than threefold increase in the share of GNP spent on R&D. Publicly supported R&D institutes were established in the late 1960s and early 1970s to serve mostly as intermediaries as in Japan. By 1975 R&D expenditures were about 0.50 percent of GNP with 80 percent of the financing from the public sector. In the 1980s, as the industrial sector matured, more advanced technology was required. Acquiring this technology from abroad, became more difficult and therefore, the private sector started to invest heavily in its own R&D. Currently, R&D expenditures represent over 2 percent of GNP, more than 80 percent of which is financed by the private sector. As a result, publicly funded R&D institutes are now redefining their role and moving into more basic, precommercial research areas.

Thus, the role of R&D institutes changes over time and depends on the level of development of the economy in question. For most developing economies, focusing more on intermediation and support for the acquisition, assimilation, adaptation, and improvement of technology obtained primarily from abroad is the right course. Where this may not be appropriate is when the country faces specific production problems or product characteristics generated by the local environment. It is only as the economy matures and has difficulty obtaining technology from abroad that there is greater role for more basic research.

In the successful developed economies, the share of R&D financed by the private sector is high. In most developing economies, it is low, whereas the participation by the public sector is great. Therefore, one of the key issues is how to foster greater participation in R&D by the private sector. This raises the following:

- What is the effectiveness of fiscal and financial incentives in inducing the private sector to invest more in R&D?
- Can greater consciousness be raised through active promotion campaigns? If so how? Which are more effective?
- What has been the experience with cooperative research?
- Can the government successfully put in place a research infrastructure in anticipation of the needs of the private sector?
- And perhaps most important, what is the role of the demand-induced pressures of the incentive environment versus the supply push on basic technological infrastructure and incentive mechanisms?

Investing in Human Capital

Technological capability is essentially embodied in people, not in machinery. In the process of acquiring, using, diffusing, and improving technology, a key input is a technical human capital base able to assess and decide on technology matters. This requires a well-developed education system that lays the necessary foundations at all level. Because of the

12. However, this is also an imperfect measure because sometimes a significant portion of what is undertaken by enterprises is defense-related work funded by the government, as is the case in the United States.

rapidly changing nature of technology and competition, on-the-job-training to upgrade workers' skills is also needed.

A good education system is necessary at two levels. At the university level, it is necessary to have qualified personnel who can monitor technological trends, assess their relevance to the prospects for the country and individual firms, and help to develop a strategy for reacting to and taking advantage of the trends. In addition, high-level technical human resources are necessary to assimilate, adapt, improve, and develop local technology that may be more appropriate or otherwise superior to what may be obtained from abroad.

At the primary and secondary levels good basic education, including a strong concentration in technical and engineering-related areas, is necessary to speed the diffusion and adoption of new technologies, to make local adaptations and improvements on the shop floor, and more generally to increase the awareness and ability to take advantage of technological opportunities.

Among the ten developing economies represented here, there is tremendous variation in the educational attainment of the population (Table 2). In India almost three-quarters of the population aged 25 and over has had no schooling; in Turkey, more than half the population is in the same situation. Almost 9 percent of the population 25 and over has had some postsecondary education in Korea. Chile, Hungary, and Yugoslavia follow with about 7 percent of the respective population having some postsecondary education.

In terms of the percentage of students of the relevant age group that are actually enrolled at the different levels of education, the variation is wide as well (Table 3). The variations are due in part to different levels of development. However, they also are related to the priority given to education by the federal government and the private sector.

There are also wide variations across countries in the share of third-level students who are enrolled in technical areas (natural science, mathematics and computer science, and engineering). See Table 4. In Japan and the East Asian NIEs in general, there has been a very strong emphasis on tertiary education in technical areas. In Singapore 52 percent of students in tertiary education are in these areas; in Taiwan, 39 percent, in Hong Kong, 36 percent. The strong emphasis on education in technical areas is one of the reasons that these economies have been so successful in assimilating technology, and using it effectively.

The emphasis given to education and the respective roles of the government and the private sector in financing education are very important areas of government/private sector interaction. We have not been able to get any comparative data on how much of total educational expenditures are covered by the private sector as opposed to by the government, but we do have some data on central government expenditures on education (Table 5). As expected, there are very wide differences. In Korea more than 18 percent of central government expenditures are on education, while in India and Hungary such expenditures are only 2 percent to 3 percent (Table 5). In the United States, the share of central government expenditures on education is very low because the bulk of public educational expenditures are covered by the state and local governments. There is also a high share of private financing of education.

Because investing in human capital is such a critical aspect of international competitiveness, much more attention needs to be given on how to increase such investment. Here there is scope for more creative interaction between the government and the private sector. A particularly fruitful area is in-service-training where the government could play an important role by providing direction and incentives.

Conclusion

Because the stock of technology available internationally is expanding so rapidly, most developing countries will get larger economic returns from acquiring foreign technology that is suited to their conditions than from developing their own technology. That means giving the greatest priority to actions focused on acquiring, using, and diffusing technology.

However, because technology is dynamic and constantly changing, developing economies must also develop a strong local capability to assess, select, adapt, and improve technology. Thus, developing a strong technical human capital base is critical for a successful strategy, and in many ways a necessary condition for the other elements of the strategy.

There are many different ways that the government and the private sector need to interact to enhance competitiveness. There is an important role for government in developing the basic technological and human capital infrastructure. However, most of the action in terms of technological improvement and development that is relevant for international competitiveness has to take place at the level of the firm, not in public R&D laboratories. As a result, strong economic incentives and penalties are necessary to make firms focus on improving technology and performance. Of course, they also have to have capabilities in terms of the skills of their workforce, engineers, and managers to undertake technological effort and improve their technological performance. Firms also need an appropriate macro environment and supporting networks and institutions for technological and market information, technical assistance, testing, quality control, and research and development, but ultimately it is the firms themselves that need to improve their performance.

Table 1. National Expenditures on R&D in Various Countries

Country	Year	% of GNP Spent on R&D	% of Expenditures in R&D			
			Gov't. Funds	Productive Enterprise Funds and Special Funds ^a	Foreign Funds ^b	Other Funds
China	-	-	-	-	-	-
India	1986	0.9	88.1	11.9	-	-
Indonesia	1986	0.3	-	-	-	-
Korea	1986	1.8	19.0 ^c	80.9	0.1	-
Brazil	1985	0.4	66.9 (1982) ^h	19.8 ^h	5.3 ^h	8.1 ^h
Chile	1987	0.5	69.0	26.0	-	5.0
Mexico	1984	0.6	14.9	0.9	1.5	82.7
Hungary	1987	2.7	19.8 ^d	79.1	1.1	-
Turkey	1985	0.7	-	-	-	-
Yugoslavia	1987	1.1	37.8 ^e	52.1	1.6	8.5
USA	1986	2.8	46.6	50.1	-	3.3 ^f
Japan	1986	2.8	21.3 ^g	78.6	0.1	-
FRG	1985	2.7	36.7 ^g	61.8	1.2	0.3

a. Funds allocated to R&D activities by institutions classified in productive sector. May or may not include state-owned enterprises.

b. Funds received from abroad for national R&D activities.

c. Korea: not including military and defense R&D and social sciences and humanities.

d. Hungary: of military R&D, only that part carried out in civil establishments is included.

e. Yugoslavia: not including military and defense R&D.

f. USA: data refers to current expenditure only. Not including data for law, humanities, and education.

g. Japan and FRG: not including data for social sciences and humanities in the productive sector.

h. Estimated

Source: UNESCO Yearbook 1989, pp. 5-49, 5-103, Tables 5.9 and 5.18.

Table 2. Distribution of Educational Attainment of the Population in Various Countries

Country	Year	No Schooling ^a	First Level		Population Age 25 and over		Post Secondary ^c	Illiteracy Rate of Population Age 15 and Over 1985
			Incompleted ^b	Completed	Entered Second Level Stage 1	Stage 2		
China ^d	1982	44.5	«	32.7	16.1	5.6	1.0	31.0
India	1981	72.5	11.3	«	13.7	«	2.5	57.0
Indonesia	1980	41.1	31.6	16.8	4.7	4.9	0.8	26.0
Korea	1980	19.7	34.5	«	18.2	18.7	8.9	-
Brazil ^e	1980	32.9	50.4	4.9	6.9	«	5.0	22.0
Chile	1982	9.4	56.6	«	26.9	«	7.2	6.0
Mexico	1980	34.2	31.4	17.2	11.8	«	5.3	10.0
Hungary	1980	1.3	8.0	3.2	57.0	23.6	7.0	-
Turkey	1980	52.4	35.3	«	8.7	«	3.6	8.8
Yugoslavia	1981	15.8	53.9	«	23.4	«	6.8	9.0
USA	1981	3.3	«	64.6	«	«	32.2	-
Japan	1980	0.4	«	45.3	«	39.7	14.3	-

- a. Less than one year of schooling.
b. Completed at least one year of education at first level but did not complete final grade at this level.
c. Anyone who undertook third-level studies whether or not they completed the full course.
d. Based on a 10% sample of census returns.
e. de jure population
« Indicates that the figure to the immediate left includes the data for this column.

All data except illiteracy rates taken from UNESCO Statistical Yearbook 1989, pp.1-26, Table 1.4.
Illiteracy rates from World Bank Social Indicators of Development 1989, ppxii-xiv.

Table 3. Enrolment Ratios at Different Levels of Education for Various Countries

	<i>Primary</i>		<i>Secondary</i>		<i>Tertiary</i>	
	1965	1986	1965	1986	1965	1986
China	83.0	113.0	25.0	39.0	2.0	2.0
India	83.0	113.0	25.0	39.0	2.0	2.0
Indonesia	72.0	118.0	12.0	41.0	1.0	7.0
Korea	101.0	94.0	35.0	95.0	6.0	33.0
Brazil	108.0	105.0	16.0	36.0	2.0	-
Chile	124.0	110.0	34.0	70.0	6.0	16.0
Mexico	92.0	114.0	17.0	55.0	4.0	16.0
Hungary	101.0	98.0	-	70.0	134.0	15.0
Turkey	101.0	107.0	16.0	44.0	4.0	10.0
Yugoslavia	106.0	95.0	65.0	82.0	13.0	19.0
USA	-	102.0	-	100.0	40.0	59.0
Japan	100.0	102.0	82.0	96.0	13.0	29.0
W. Germany	-	97.0	-	72.0	9.0	30.0

Note: The data on primary school enrollments are estimates of children of all ages enrolled in primary school. Figures are expressed as the ratio of pupils to the population of school-age children. Most countries consider primary school age to be 6 to 11 years. For some countries with universal primary education, gross enrollment ratios may exceed 100% because some pupils are younger or older than the country's standard primary school age. The data for secondary school enrollments are calculated in the same manner, but again the definition of secondary school age differs among countries. It is more commonly considered 12 to 17 years. The tertiary enrollment ratio is calculated by dividing the number of pupils enrolled in all post-secondary and universities, including vocational schools, by the population in the 20-24 age group.

Source: World Bank Development Report 1989, Table 29, pp. 220-221.

Table 4. Third-Level Students in Science, Mathematics, and Engineering—1986

	% of Total			
	<i>Natural Science</i>	<i>Mathematics & Computer Sciences</i>	<i>Engineering</i>	<i>Total in Science Mathematics & Engineering</i>
Brazil	3.1	2.9	10.1	16.1
Mexico	2.5	2.1	23.6	28.2
Hong Kong	3.7	3.3	28.8	35.8
Korea	3.6	3.3	16.7	23.6
Singapore	6.8	1.0	43.7	51.5
Taiwan	2.8	3.7	32.9	39.4
Japan	2.1	0.7	17.4	20.4

Source: Computed from UNESCO Statistical Yearbook, 1989 except for Taiwan

Table 5. Central Government Expenditures on Education—1987

	<i>Total Central Gov't. Expenditures as % of GDP</i>	<i>Central Gov't. Expenditures on Education as % of Central Gov't. Expenditures</i>	<i>Central Gov't. Expenditures on Education as % of GDP</i>
China	-	-	-
India	18.1	2.7	0.5
Indonesia	24.0	8.8	2.1
Korea	17.4	18.3	3.2
Brazil	26.1	3.0*	0.8
Chile	31.9	12.5	4.0
Mexico	22.7	8.7	2.0
Hungary	59.6	2.3	1.4
Turkey	22.8	12.6	2.9
Yugoslavia	8.0	0.0	0.0
USA	23.3	1.7	0.4
Japan	17.4	-	-
W. Germany	30.1	0.6*	0.2

* = 1986

Source: World Development Report 1989, Table 11, pp. 184-185

Table 6. Potential R&D Personnel and Personnel Engaged in R&D in Various Countries

Country	Year	Potential Manpower		Personnel Engaged in R&D		
		Potential Scientists & Engineers Per Million Population	Potential Technicians Per Million Population	Scientists & Engineers Per Million Population	Technicians Per Million Population	Scientists & Engineers in R&D as % of Potential Scientists & Engineers
China ^a	1984	7,129	-	-	-	-
India ^b	1986	3,329	-	109	89	3.2
Indonesia ^c	1986	1,280	12,662	175	-	13.6
Korea	1986	2,426	49,749	1,129	731	46.5
Brazil ^d	1985	11,231	25,348	390	-	3.4
Chile	1987	-	-	432	-	-
Mexico	1984	-	-	215	379	-
Hungary ^e	1987	45,786	206,074	2,105	1,581	4.5
Turkey ^f	1983	15,932	18,678	224	146	1.4
Yugoslavia ^g	1987	21,421	171,261	1,445	795	6.7
USA	1986	14,757	-	3,265	-	22.1
Japan ^h	1987	59,611	253,841	4,853	842	8.1
W. Germany	1985	42,557	96,864	2,354	1,935	5.5

Source: UNESCO Statistical Yearbook, 1989, Table 5.17, pp. 5-98

- a. Data for Potential manpower relate to 1985.
- b. Data for potential manpower relate to 1980.
- c. Data for potential manpower relate to 1981.
- d. Data for potential manpower relate to 1980.
- e. Data for potential manpower relate to 1984.
- f. Data for potential manpower relate to 1980.
- g. Data for potential manpower relate to 1985.
- h. Data for potential manpower relate to 1982.

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7

GOVERNMENT-BUSINESS RELATIONS AND COMPETITIVENESS: THE JAPANESE CASE

Yutaka Kosai

Introduction

Japan is often regarded as a case of rewarding cooperation between the public and the private sectors in promoting its industrial competitiveness. As is usual with a "success story," however, myths and realities are so mingled that it is difficult to determine whether competitiveness of the Japanese industries has been improved because of, irrespective of, or in spite of government's involvement, and, if so, to what extent. For one thing, all of the Japanese industries cannot be regarded as competitive. Of course, it is impossible to make every industry competitive, as is taught by comparative advantage theory. In fact, Japan's agriculture sector, distribution sector, and some of its service industries are quite inefficient and heavily protected. Even within the manufacturing sector, those firms that are competitive are decreasing in number.

This paper will survey existing views of government-business relations in Japan and their effects on competitiveness. This will be followed by an analysis of Japan's experience in improving competitiveness after the oil crises in the 1970s and the sharp appreciation of the yen in the latter half of the 1980s.

Views of Government-Business Relationship

The Conventional View

Although an exact counting has never been made, the "majority" view or conventional view about public-private sectoral relations and their effects on competitiveness of the Japanese industries seems to be that of Japan Inc. (i.e., all Japanese companies and the government operate as one entity). Japan was regarded as the originator of the "industrial policy," a shrewd practitioner of "industrial targeting," and a prototype of the "Capitalist Development State" where the bureaucrats play a major role in promoting the nation's industrialization. The powerful Ministry of International Trade and Industry (MITI) is the general headquarters of Japan Inc., with respective industries as its subordinate departments. Supporters of this view include James Abeglen, Chalmar Johnson, and Peter Katzensleim, to name a few.

The Opposing View

The majority view has been challenged by a radically opposing "minority" view. The proponents of this view point out that up until the 1930s Japan's major industry was the textile industry. Even after the second World War there was little evidence of cooperation

between the Government and private industry. For example, the National Car Plan of the 1950s which was intended to integrate competing automakers was a failure. Milton Friedman once stated that the industrialization of Japan in the late 19th century was achieved because Japan's rates of tariff protection were exceptionally low at the time. Even as recently as the 1960s the power of MITI was being circumscribed by opposing factors (as witnessed by the failure to pass the Specific Industry Promotion Law in the early 1960s). Supporters of the minority view include Kosai-Harada and Toshimasa Tsuruta.

Recently, more attention is being paid to the role of firms in Japan, with their specificities of labor-management relations, of relationship banking, of parts supplier/assembler relations (Keiretsu), and the long-term stance taken by management. Among others, the works by Aoki, Itami-Imai, and Ouchi can be cited here. These works do not directly negate the majority view, but they do downgrade the dominant role of government intervention in promoting competitiveness and emphasize the role of firms.

Efforts at Reconciliation

A statement now exists between these opposing views. The simplistic and stereotypical version of the Japan Inc. hypothesis is unsatisfactory. The nihilistic version of the anti-Japan Inc. hypothesis has also failed to persuade many observers who have the feeling of "no smoke without fire." Ways out of the stalemate are being sought. Among the efforts in that direction are the following four views.

DEVELOPMENT STAGE THEORY. One way to look at the matter is the theory of stages of economic development. Government plays a much greater role in an economy in its developmental stage than in a mature economy. Infant industries need state protection to be nurtured. In a mature economy, liberal market order prevails. Consider this example: The Policy Innovation Forum, a group of eminent Japanese economists led by Yujiro Hayami, stated that Japan should be a liberal market economy since it has graduated from its developmental stage and that the Newly Industrialized Economies of Asia should be expected to follow closely.

The relations between public and private sectors may change over time. Nobuyoshi Namiki once declared "the death of Japan Inc.," when Japan liberalized its international capital transactions in accordance with OECD codes in the mid-1960s. The timing of graduation from (or death of) Japan Inc. may change depending on the authors.

The stage-of-development approach is valuable in studying more carefully public-private sector relations and their effect on competitiveness. However, public-private interactions do not vanish once the economy matures. A simplistic discrimination test to see whether the economy (or industry) has graduated from the infant stage does not serve our purpose because of the difficulty of defining "infant stage" or "graduation." The approach suggests the need for a case study of public-private interactions and their effects on competitiveness with respect to the most recent stage of development.

TARGETING-COMPETITION MIXTURE. Yasusuke Murakami proposed an ingenious and sophisticated view of reconciliation and synthesis. Murakami admits that both industrial policy and interfirm competition helped Japan to industrialize rapidly. He envisages the division of labor between public and private sectors. The government selects the target industries and announces the measures to be taken to promote the targeted industries. These might include special tax treatment, licenses of foreign technology imports, financing from government institutions, and in special cases subsidies and legislation of protective measures. Thus, government prepares the playing field. Once the playing field is prepared, firms can compete with each other as fiercely as the circumstances allow. Entrepreneurship and ingenuity are fully exploited by industries. But the government remains neutral and fair to firms within the respective industries. The pressures to promote industries are equally and

impartially applied to the firms that are "in." Those that are "in" and those that are "out" are treated in different ways.

Thus, Murakami proposed "compartmentalized competition." According to him, control of new entrants is important for sectoral industrial policy. In this respect, he appears to exaggerate the limitations imposed on new entrants. There have, however, been numerous new entrants in postwar industrial Japan after the Zaibatsu combines were dissolved by the occupation army. Examples of new entrants include such great Japanese industrial corporations as Kawasaki Steel, Sumitomo Metal, Kobe Steel (in iron and steel), Honda (from motorcycles to passenger cars), and Sony (electronics). His examples are mostly from the high growth era of Japan in the 1960s, although his hypothesis is worth testing today.

While many aspects of Murakami's segmentation hypothesis can be criticized, he does nevertheless offer an interesting hypothesis—interesting because he combines sectoral industrial policy with interfirm competition within the respective industries. The intervention-competition mix will remain an important element in public-private sectoral interactions.

INFORMATIONAL NETWORK. Masahiko Aoki, has offered an interesting hypothesis that can be called the "Bureaucracy as a Moderator" model. Aoki does not fully rely on the perfect competition model; rather, he assumes the existence of firms' "rent" or "surplus" that has to be distributed among stockholders and employees in a way that is fair and that will promote efficiency in the future. The management in this instance serves as a mediator or moderator. In a similar fashion, there are cases where "rent" should be distributed among firms and sectors, and the bureaucracy serves as a moderator in these cases. The bureaucracy is qualified to occupy this position because it understands the sectoral circumstances. Thus, the bureaucrats can mediate among firms and sectors. As is often pointed out, the market mechanism is also an information network that connects firms and sectors in a peculiar way. If competition is perfect, no other information system is required for resource allocation. However, if there remains some "rent," other information networks can exist together with the market mechanism. Bureaucracy is one such information network that directly connects firms and sectors.

A moderator is necessary in the adjustment process in which conflicting interests must somehow be reconciled. However, the essence of development lies in the innovator, not in the moderator or mediator. What role can the public sector play in the process of industrial innovation? This is a question worth asking.

Aoki's analysis of the Japanese firm has some similarity with Leibenstein's X-efficiency theory. His model of bureaucracy is an extension. Several concepts offered in his model (information, incentive, value) seem to be quite useful.

EXTERNALITIES AND THE THEORY OF INDUSTRIAL POLICY. A group of Japanese economists, headed by Ryutaro Komiya, made a joint study of "Industrial Policy of Japan," later published under the same title by Academic Press (1988). Theoretical parts of the work were written by four young (now middle-aged?) economists (sometimes called the Gang of Four): Motoshige Itoh, Kazuharu Kiyono, Masahiro Okuno, and Kotaro Suzumura. Unlike the older generation of economists, (such as Masao Baba and Ryutaro Komiya), and most of the contributors to the empirical chapters, the Gang of Four are sympathetic to industrial policy and try to theorize about it. Trained in the neoclassical tradition, they rely on externalities for rationalization of government intervention. Marching on the same line with recent trade and growth theory, they emphasize several types of externalities such as learning-by-doing through stepping-up the "ladders" of industrial development, spill-over effects of research and development, etc. They may be right in asserting that government intervention sometimes succeeds, but it is also true that it sometimes fails. The critical conditions when it succeeds and when it fails are not clear from their theoretical models.

The above is a brief account of existing views on Japan Inc., but it is clear that no one view can fully explain the effects of public-private sector interactions on competitiveness.

However, the approaches I have described should provide a store of useful tools for analyzing recent experience.

The Japanese Experience

Most of the preceding works were concerned with the experiences of the 1950s and the 1960s, when Japan grew rapidly and its competitiveness dramatically improved. This section will discuss more recent experiences in the 1970s and 1980s. The period was remarkable. Japan suffered severely from the oil crises of the 1970s. A sharp yen appreciation in the latter half of the 1980s threatened the competitiveness of many Japanese industries. Yet Japan survived. In several important fields of industry, Japan's competitive edge was sharpened. Japanese industries are now characterized by their productivity gains, quality improvements, and the efficient development and design of new products.

Some caution is necessary however. Not all Japanese industries are competitive. The divergence between strong industries and weak industries is now more apparent than in the past. Some industries were particularly injured by the oil crises and the sharp rise in the value of the yen. For example industries in aluminum refining, nonferrous metals, and coal, have almost disappeared from Japan or are close to extinction. Japan's competitiveness is now supported by fewer industries.

Moreover, Japan's economic power is exaggerated by the expansion of its financial wealth. Because of the yen appreciation and the extraordinary increase in land and stock prices, Japan could afford to buy many relatively cheap foreign assets. Clearly, the situation is now changing as evidenced by the recent crash of the Tokyo stock market.

Nevertheless, Japan's overall economic performance has been positive. Since negative lessons of government intervention abound, I will concentrate on possible explanations of economic successes. After discussing how government-business relations evolved during the period, I will examine those aspects that might have directly affected industrial competitiveness.

Overcoming the Oil Crises

Zbigniew Brzezinski once called Japan "a fragile flower," particularly because of its weak energy and resource base. The oil crises of 1973 and 1979 directly attacked the root of Japan's weakness. Naturally, the Japanese economy faltered. But why did it survive? What was done by the government, and how did the private sector react?

The government did several things. First, it took stringent fiscal and monetary policy measures. In the first oil crisis in 1973 as well in the second in 1979, these fiscal and monetary policies played a key role in controlling inflation. By controlling inflation, Japan avoided economic and social disintegration, which surely would have affected the productivity and competitiveness of the country. Sound fiscal and monetary policies are a necessary, although not sufficient, condition for maintaining competitiveness.

Second, the government controlled prices in 1974 but not in 1980. But the price controls of 1974 were limited in scope and duration and were regarded as an emergency measure. The oil price set by OPEC was almost fully passed on to Japanese industry and consumers without much government intervention. No other measure could have been possible since Japan was completely dependent on imported oil. This contrasts with oil price controls in the United States after the first oil crisis and explains the differences in energy savings in the two countries. Oil consumption per capita declined in the United States only after oil price controls were removed in 1981.

Third, the Japanese government tried to persuade trade union leaders to restrain their demand for wage increases. Wage negotiations in the spring of 1974 resulted in wage increases of 32.9 percent, thus sharply raising the unit labor cost and relative share of labor. For the economy to avoid "stagflation" (unemployment cum inflation combined), it was essential to restrain wage increases. Thus wage negotiations the following spring resulted in

modest increases. To some observers (for example, Yasusuke Murakami), this was the result of "incomes policy in the Japanese style."

"Incomes policy in the Japanese style" has been limited to exhortation and persuasion. Statutory or compulsory measures have never been introduced. Not only its effectiveness but its very existence have been debated. Econometric studies show that the wage increase in 1975 could be explained in terms of rates of unemployment and inflation without introducing specific proxy variables that represent incomes policy.

It was true that the government tried to persuade trade union leaders to restrain the wage demand, and to accept the moderate wage increases, in exchange for a government promise to keep the rate of inflation under control. However, under enterprise-based trade unionism in Japan, where wages are settled at the enterprise level (not at the national level), national union leaders accepted the moderate wage increases that were imposed upon them by the market forces (such as unemployment, inflation, and squeezed profits) and took advantage of government promises to keep inflation under control as a good excuse to save their face. Still, an important fact was that the good labor-management relationship had not been destroyed during the oil crises in spite of the rise in unemployment and restraint in wages. Management appeared to do its best to avoid lay-offs, and labor made concessions in demanding wages. Mutual trust enabled management and labor to act, not from the viewpoint of short-run conflict of interest, but from the viewpoint of long-term cooperation that was mutually beneficial. Government played a role in strengthening the mutual trust.

Fourth, the government tried to lessen the country's dependence on imported oil by developing nuclear power and other energy sources. MITI launched the Sunshine Project, which promoted R&D in new energy. Wind, solar, ocean, biomass, and geothermal energies were studied. However, efforts were concentrated on nuclear energy. The government also supported the electric companies' investment in nuclear power plants.

Nuclear energy did increase electricity supply. However, the construction of nuclear plants met with strong resistance from the nearby residents, and it was often difficult to construct plants as they were planned—a fact that refutes the stereotypical vision of Japan Inc. The share of nuclear energy in total energy supply is low in Japan compared with France where the bureaucracy is stronger. New energy development has not been successful because estimated costs remain high. Imai criticizes the government policy toward new energy sources as too technology oriented and as lacking the measures to promote demand for new energy sources.

Fifth, the government helped industries seriously affected by the oil price increase by passing the Specifically Depressed Industry's Promotion Law. The Law allows firms in certain registered industries to depreciate excess equipment, and to formulate rationalization plans, etc. Unemployment relief and special measures to help the depressed areas were also provided. These measures, however, were mainly concerned with sick industries and did not affect competitiveness.

However effective the above-mentioned government actions were in their respective fields, none of them directly contributed to energy savings—the most important means by which Japan could overcome the oil crises. But in a massive propaganda campaign the government called upon the people to save energy. It also closed gasoline stations on Sunday, and curtailed radio and TV broadcasts after midnight. The government started the "Moonlight Project" to promote R&D in energy conservation. But even these efforts, however, can only marginally explain the saving of energy after the oil crises.

The government contributed most to lower energy use, not by any positive action, but by nonaction—that is, through not imposing price controls on oil products for long. This nonaction led to a high price for oil. The business sector responded positively to the high price by using less energy. Japan's oil imports declined after 1973, while the size of the economy (GNP) doubled. The saving was achieved largely by utilizing the rapidly developing microelectronic technology. It also was promoted by mobilizing initiatives and cooperation by employees in the form of quality control, employees' proposal systems, small group debates, and so on. At the industry level, savings were made possible by a shift of the

industrial structure from energy-using sectors (material) to energy-saving sectors (machinery). Thus, the limited role of government in saving energy shows again the limits of the stereotypical Japan Inc. hypothesis.

Coping with the Yen Appreciation

A more or less similar story repeated itself in the case of the yen appreciation in the latter half of the 1980s. The Bank of Japan reduced the rate of interest repeatedly to expand domestic demand. After pursuing fiscal consolidation in the mid-1980s, the government in 1987 and 1988 increased its public works expenditure. The government tried to help industrial adjustment by allowing cartel and special unemployment relief.

But again, Japanese industry survived, not because of government intervention but mainly because of the action of the business firms. While certain industries declined and others disappeared, there were some that grew vigorously. They reduced costs, improved quality, developed new products, and met the increasing demand at home and abroad.

Positive Interactions

So far we have been concerned with understanding how Japan overcame the oil crises and the yen appreciation. In general, the dynamism of firms and good labor-management relations were major factors, while the role of government was rather limited. This does not necessarily mean that government does not play an important role or that the private sector does not react positively in specific fields to make industries competitive. Micro-level cooperation between the public and private sectors is strategically important in promoting competitiveness.

To overcome the oil crises, firms saved energy. To save energy, firms relied heavily on microelectronic technology. Microelectronics was a key sector in the industrial development of Japan in the 1970s and 1980s. Was there any interaction between government and firms in this important strategic front? Yes, there was.

The most important government-firm interaction in this field was joint research and development projects. The very large integrated circuits (VLSI) Technology Research Association is worth special mention. The Technology Research Association (set up under the Law of Mining and Manufacturing Technology Research Association of 1961) is an alliance under which firms join in specific research projects. Of the seventy-one associations established between 1961-83, the VLSI Technology Research Association was one of the most important in terms of expenditures, number of researchers mobilized, and contribution to technological breakthroughs.

The purpose of the VLSI Technological Research Association was "to develop the technology needed to manufacture VLSIs, i.e. trying to place a memory of one megabyte on a single chip, a technique that IBM was said to be in the process of developing at the time" (Imai). The Association was given four years to accomplish the task. MITI took the initiative to urge five rival electronic companies (Fujitsu, Hitachi, Mitsubishi, NEC, and Toshiba) to form the Association, and it cooperated with the Association by sending researchers from its Electro-technical Laboratory to the Joint Research Institute of the Association. Research money amounted to 72 billion yen, of which 29 billion yen came from the government as a subsidy. The size of R&D expenditures through the Association amounted to about one-half of the total size of R&D expenditures on semiconductors in the same period. Basic technologies such as microprocessor technology and crystal technology were assigned to the Joint Institute where a hundred researchers from five companies, MITI and NTT (Nippon Telephone and Telegraph Company) worked together. Independent research on applied technologies that was closer to product development (such as design technology) was carried out by groups of firms (Fuji, Hitachi, and Mitsubishi, on one hand, and NEC and Toshiba, on the other hand). As expected, the Association was virtually

dissolved in 1979, after it made several technical break-throughs and obtained more than one thousand patents.

The Association has been regarded as a great success. The reasons may include:

- (1) The Association was set up in a field where public and private sectors interacted. Rival companies competed with each other in the development of product-related technology while cooperating for the development of common and basic technologies. It was a mixture of government incentives and commercial competition (cf. Murakami's thesis). There was not a tendency for any of the five participating companies to become a monopolist or to hinder the fierce competition after the Association was dissolved.
- (2) The Association, by assembling the researchers from companies and the government with the same research goals, gave rise to an easy transfer of technologies among the participants. Their cooperation brought about positive informational externalities.
- (3) The themes and the limit of time for research were specified beforehand.
- (4) The leadership of the Association's director helped to stimulate the concerted efforts of the participants.

Thus, at least in one case, the government and firms interacted positively, and Japanese industrial competitiveness improved. However, it must be added that the VLSI Technology Research Association belonged to the most successful case. Among seventy-one Technology Research Associations, none were regarded as successful. A project for developing the basic technologies for the next generation of computers followed the VLSI project. Some of its useful subsidiary results have already been made available. However, the usefulness of the core concept of a fifth generation computer remains to be seen.

In other cases, firms sent their inferior research staff to the Association, and kept the best researchers at their own laboratories. In such cases, the failure of Technology Research Associations was to be expected. But on the whole conditions for effective public and private interaction remain difficult to generalize.

An ironical case of government intervention and business reaction should be added here. In 1973 the regulation limiting the carbon monoxide concentration in emissions was changed and in 1975 standards were set at the same level to comply with the United States Clean Air Act Amendment of 1970. The targets were regarded as difficult to achieve and were strongly protested by Japanese automobile producers. However, the standards were achieved in 1978, thus making Japan the first country to apply the strictest regulatory standards. Since then, emission control and energy conservation have become the mainstay of Japanese automobile producers. The government intervention that was regarded as "anti-industry" in fact promoted industrial competitiveness. The first firms that met the standard were not the largest producers (Toyota) but new comers such as Honda, Suzuki, and Mitsubishi. This suggests that competitive industrial organization is conducive to technical progress and increased international competitiveness of the industry concerned.

Conclusion

Having taken a quick glance at government-business interactions in Japan, one is left with an impression that no simple conclusion can be drawn. The image of an omnipotent government and an obedient private sector is false. Government initiatives and support sometimes promote competitiveness when firms react positively, but government interference is more often counterproductive. The conditions for efficient interaction between the public and private sectors are still difficult to define. Nevertheless, the following conclusions can be made.

First, the importance of the role of government policies to maintain the order and stability of the economy cannot be exaggerated. Only when the normal working of market mechanisms is ensured do firms act positively in responding to market incentives. If market

mechanisms operate well, competition among firms will result in strengthened competitiveness of the economy.

Second, competition should not be suppressed, but be taken advantage of by the government, particularly in the case of technological innovation. Competition gives firms energy and spirit to move ahead. Competitiveness will be strengthened only through the firms' grass-root efforts to improve the productive process based on trial and error and on good labor-management relations. The optimal mix between government leadership and firms' competition must be sought and found.

Finally, mutual trust, shared goals, and common language are valuable in promoting cooperation of sectors. An information network should be established across sectoral boundaries.

8

THE ROLE OF THE GOVERNMENT: COMPARATIVE INTERNATIONAL EXPERIENCE

Gustav Ranis

Introduction

It is, by now, well accepted that there has been a tremendous divergence in the performance of the so-called developing countries in the postwar era, with a set of newly industrialized economies (NIE) emerging in East Asia, Latin America, and, to some extent, Southeast Asia, while the rest of the so-called developing world has been left substantially behind. Moreover, the statistical evidence indicates that the East Asian NIEs have registered by far the best development performance, either from the growth or distributional points of view, with Latin America and Southeast Asia lagging behind. This can be said even for the more difficult period of the 1980s, when neo-protectionism, low OECD growth, high interest rates, and a reduction of "voluntary" commercial bank lending combined to convert deep-seated development problems into debt problems.

In this paper, six NIEs have been chosen for analysis partly because they represent three pairs of different types or subfamilies of NIEs, as indicated by their initial conditions (see Table 1). The differential performance over time of these six is illustrated in Table 2. Colombia and Mexico represent the archetypical Latin American case—that is, relatively natural resource-rich, intermediate in the extent of population pressure on the land and in the quality of the human capital endowment, all important initial conditions. Most Latin Americans share a long history of industrialization, dating back to the turn of the century in many instances, and a common strategy of a more or less severe type of PIS, primary (or light industry-oriented) import substitution, first "natural", (that is, as a result of World Wars I and II), then government imposed. This was generally succeeded by a strategy of secondary (or intermediate and heavy industry-oriented) import substitution, tinged with export promotion, (the subsidization of such nontraditional exports). This pattern—fueled by a combination of raw material exports (especially in the 1960s) and the recycling of OPEC surpluses (especially in the 1970s)—continued until the emperor "lost his clothes" with the 1980s debt crisis.

At the other end of the spectrum lie the East Asian NIEs, Taiwan and South Korea, examples of natural resource poor, labor surplus and human capital rich systems. Both these NIEs also pursued a strategy of primary import substitution (that is, the production of labor-intensive nondurables for the domestic market that were previously imported) during the 1950s. However, unlike the Latin Americans, at the beginning of the 1960s they switched to a strategy of PES, or primary export substitution, (that is, the production for export of the same labor-intensive nondurables previously provided mainly to the domestic market), a shift requiring a considerable change in the policy mix.

In between these two extremal archetype cases lie two "neighboring" countries in Southeast Asia, Thailand and the Philippines. They are both medium-sized, favorably endowed with natural resources, and intermediate in the labor surplus and human capital dimensions. Both also pursued a PIS strategy during the 1950s, although that of the Philippines was substantially more severe than Thailand's. During the 1960s, the Philippines began to more or less follow a typical Latin American regime of secondary import substitution combined with export promotion, while Thailand, once on the same path, has gradually been opting for a strategy closer to the PES pattern of the East Asians in recent years.

Table 1. Initial Conditions (approximately 1950)

	<i>Size^a</i>	<i>Labor Surplus^b</i>	<i>Natural Resources</i>		
Colombia emeralds;	11334	3.0('51)	Rich (some oil, gold silver, iron ore, copper and also rich in cash crops).		
Mexico	25826	1.0 ('50)	Rich (zinc, lead, copper, silver, iron ore, mercury sulphur,oil).		
S. Korea	20513	8.3 ('49)	Poor (poor quality coal, some gold, tungsten)		
Taiwan	7981	4.0 ('50)	Poor (good coal, some natural gas, little oil).		
Philippines some	19910	2.2 ('48)	Rich (iron ore, copper, gold, chromite, timber and cash crops, e.g. sugar, copra).		
Thailand major	18488	3.3 ^c ('47)	Moderate (tin, rubber, not rich in cash crops but rice exporter).		
Human Capital Resources (in %)					
	<i>Adult Literacy Rate</i>		<i>School Enrollment Ratios (adjusted)^d</i>		
	1950	1960	1950	1955	1960
Colombia	60.0	63.0	30	41	50
Mexico	56.8	65.4	37	43	53
South Korea	76.8 ^e	82.2	54	60	64
Taiwan	51.1	73.0	47	57	74
Philippines	60.0 ^f	74.9 ^g	89	70	70
Thailand	52.0 ^h	67.7	48	50	58

a. Population (in thousands);

b. Rural population-arable land ratios (in persons per hectares)

c. Arable land refers to land devoted to main crops only.

d. These are the ratios of total enrollment at the two levels to the estimated population in the age group corresponding to the actual duration of schooling in each country.

e. 1955.

f. 1948

g. 1958

h. 1947

Sources: UN Demographic yearbook, FAO Production Yearbook, UNESCO Statistical Yearbook, UN Statistical Yearbook

Table 2. Post War Performance Indicators of a Sample of LDCs

A. Average Real Per Capita GDP Growth Rates (% per year)					
	1950-59	1960-69	1970-79	1980-86	
1. Columbia	1.7 ^a	1.9	3.9	0.7	
2. Mexico	3.0 ^b	4.1	1.9	-0.7	
3. Taiwan	4.7 ^b	5.9	8.1	5.6	
4. South Korea	1.3 ^c	4.9	7.5	4.3	
5. Philippines	3.2	2.1	3.3	-1.5	
6. Thailand	2.8	5.0	5.0	3.1	

(a) 1951-59; (b) 1952-59; (c) 1953-59.

B. Income Distribution (Gini Coefficient)					
	1950	1960	1970	1980	
1. Columbia	—	.53	.56	.52 ('82)	
2. Mexico	—	.54	.58	.50 ('77)	
3. Taiwan	.56	.44 ('59)	.29	.29 ('78)	
4. South Korea	—	—	.37	.38 ('76)	
5. Philippines	.49 ('56)	.50 ('61)	.49 ('71)	.50 ('77)	
6. Thailand	—	.41 ('62)	.44 ('68)	.45 ('81)	

C. External Orientation Ratios (Exports/GDP: in %)					
	1950	1960	1970	1980	1986
1. Columbia	10.9	15.7	14.6	16.3	18.9
2. Mexico	17.0	10.6	8.2	22.4	17.0
3. Taiwan	10.1	11.1	29.6	52.2	60.6
4. South Korea	2.1	3.3	14.3	37.2	40.7
5. Philippines	10.5	11.0	18.1	17.1	24.5
6. Thailand	15.0	17.0	18.7	25.8	28.2

Sources: UN *Statistical Yearbook*, various years; UN *National Income Statistics, Analysis of Main Aggregates*, 1983; R. Summers & A. Heston, "Improved International Comparisons of Real Product and its Composition", *The Review of Income and Wealth* 30 (June, 1984); 207-262; S. Jain, *Size Distribution of Income*, Washington, D.C.: The World Bank, 1975; J. Fei, G. Ranis and S. Kuo, *Growth with Equity: The Taiwan Case*, Oxford University Press, 1979; IMF, *International Financial Statistics: Yearbook*, various years; World Bank, *World Tables*, and *World Development Report*, various issues; *Statistical Yearbook of the Republic of China*, various issues; *Philippine Statistical Yearbook*, various issues; *National Income of the Republic of China*, various issues.

In addition to those initial conditions that can be measured relatively easily, countries also differ with respect to the level of their initial national cohesion, geographic and cultural homogeneity, and so on. The contrast between Latin America and East Asia is quite clear, but even within these NIE families there exist marked differences. For example, the Philippines, having suffered two demoralizing colonial experiences, was and still is characterized by substantial geographic, cultural, religious, and even language diversity, plus a lack of secure integrative national moorings. Thailand, in contrast, had no direct colonial experience to break away from and, more importantly, has a much more homogeneous population. Moreover, the presence of a monarchy to provide a focal point for national reform helped pull together a variety of disparate national interest groups and rendered a national social contract much more feasible. Taiwan's background was also one of a highly homogeneous population cemented by a "common enemy" and it benefited from a colonial regime focused on rural infrastructure, physical as well as organizational.

As soon as one departs from the purely descriptive plane and asks why there is this marked divergence in performance, given these differing initial conditions, the debate sharpens. There are those who wax eloquent about what they perceive as the unique application in East Asia of pure *laissez faire* and those who claim that these countries really represent examples of fairly active and intrusive but somehow wise governments. But the "why," while admittedly difficult, is not really addressed. I shall take the position that a country's initial conditions are likely to have a substantial impact on its policy choices at the outset—and subsequently on the strength of interest groups created, which affects the options available over time. While nothing is ever pre-ordained or irreversible, the habits and rigidities thus created often restrict the freedom of governments over time and determine the extent to which changing policy mixes accommodate or obstruct changing underlying conditions of domestic growth and international competitiveness. I believe it is the flexibility of government that is the issue, not its absolute size. In other words, it is how people decide to organize themselves in the public and private sectors that really matters. Indeed, different families of NIEs not only start out with very different initial conditions, but have achieved different degrees of "bottom line" success because they made substantially different organizational and policy choices in their efforts to achieve modern growth. Therefore, in going beyond the question of *what* happened and attempting to analyze *why* it happened, I must try to explain the organizational and policy choices made along the way.

It is fair to start with the assumption that all developing countries begin with the situation of strong political forces penetrating their mixed economies and that there exists a long-run tendency to converge toward a pattern of organizational choices characteristic of the mixed mature developing-economy type. What needs to be explained is why this trend toward public as well as private decentralization is much stronger in some regions, for example, East Asia, while there is much more oscillation or stop-go, in other parts of the NIE world. The difference between monotonicity and oscillation in terms of government policy toward the industrial and agricultural sectors must be explained by a combination of the above-referenced initial typological differences and alternative ways in which the political economy of policy change plays itself out over time. Policies extend far beyond the technical and are always part of a political process. Therefore, any effort at understanding must go beyond the normal economic description or even economic analysis and include an investigation of the political economy of policy change over time.

In the mixed, or nonsocialist, developing economy, the typical government exercises political control over the economy via three basic powers: the power to block trade, the power to transfer income to itself and other favored parties, and the power to decide on a specific allocation of expenditures. The main development policy instruments deployed over time (the interest rate, the foreign exchange rate, the rate of monetary expansion and, to a lesser degree, the rate of protection, the rate of taxation, and the pattern of government expenditures) should be interpreted as political instruments to promote growth through the exercise of these powers—to increase the pie and also ensure that it is not distributed too unfairly. Once political force has penetrated the post-independence developing society, it

becomes important to trace not only the explicit revenue and expenditure-related policies, but also the much more pervasive deployment of the under-the-table, indirect, or implicit income transfers and resource allocations. Such indirect transfers are usually sanctioned by the powerful need of governments to try to solve current problems by putting aside the possibility of a social conflict arising later. To cite one important example, the use of budgetary deficits to create purchasing power for the government, may work quite well when used in moderation to exact forced savings out of the system, but it may become counterproductive when the nonbank public fights back by increasing the velocity of circulation, thus yielding a lower actual forced savings rate with higher rates of monetary expansion.

When the familiar macroeconomic policy tools are thus interpreted as growth promoting instruments, the concrete meaning of gradual liberalization in various markets entails a shift from covert to overt measures of intervention and thus to the gradual withdrawal of political forces from the economic arena. These associated shifts, moreover, clearly do not imply a diminished role for government, but merely a changing role. Its indirect functions may actually increase, even as its direct functions diminish. This way of looking at the role of government and the application of macroeconomic and organizational/institutional policy change may help us to better understand the divergent paths taken in different parts of the NIE world. Policy oscillation and consequently, a slower trend toward the mixed, mature, economy constellation of institutions and policies often result when covert policies (initially adopted for short-term political convenience) self-destruct because of insufficiently anticipated adverse effects on some groups, with incomes being transferred in the absence of a clear political consensus. This is the historical Latin American prototype. On the other hand, while structural change is hardly ever painless, the increased necessity of making changes when a *cul de sac* is reached, plus the increasing opportunity and ability to understand and debate the issues, can permit a consensus to evolve, possibly with the help of outsiders and temporary capital inflows from abroad. This is the historical East Asian prototype.

Tracing the responses of the different types of developing-country pairs to the inevitable external shocks over time is a useful device for examining the contrasting roles of government in these three cases. I will begin by examining Colombia and Mexico, then discuss Korea and Taiwan, and finally review the intermediate pair, the Philippines and Thailand.

Typology and Experience

Colombia and Mexico

Abstracting, first, from the differences between Colombia and Mexico, it is clear that the broad pattern of policy evolution in these two Latin American economies, once they emerged out of primary import substitution, consisted of an effort to promote growth during relatively good times (roughly pre-1973) and to maintain it at high levels in the face of a deterioration in the external environment (post-1973). Such a strategy invariably involves increased government expenditures via deficit financing, additional money creation by the banking system, plus extensive external borrowing, during a period when the terms of trade and export earnings deteriorate. This usually, sooner or later, leads to a balance of payments crisis, possibly rendered more serious by a further deterioration in borrowing capacity abroad—and subsequently lower or even negative growth rates. There then develops a tendency to tackle the mounting crisis, first by reimposing direct controls on the economy, especially on trade, and reversing previous attempts at import liberalization. Subsequently, having first avoided exchange rate flexibility, the government usually resorts to drastic devaluations late in the game, that is, before a new cycle of liberalization gets under way.

While this is a caricature of the representative Latin American case, differences between two real-life countries are instructive. Prior to 1973 Colombia experienced

respectable growth rates, (almost 6 percent for most of the period), achieved with an initially quite restrained policy package, with modest government deficits, (an average of 1 percent of GDP), moderate growth of the money supply, (an average of less than 15 percent), and relatively low inflation. There was no appreciation of the currency, no major change in velocity, and some initiation of trade liberalization measures. In the less favorable phase, however, policy became more expansionary, especially in the monetary sphere, with an acceleration in the expansion of the money supply to around 25 percent between 1972 to 1977. Inflation jumped from a little over 10 percent in 1972 to more than 30 percent in 1977. The result was negative real interest rates and an overall appreciation of the real rate of exchange, in spite of occasional devaluations. Fiscal policy remained restrained, with tax reforms leading to a modest increase in the tax/GDP ratio, from about 8 percent in 1967 to over 10 percent in 1977. Trade liberalization continued to increase on a secular basis.

Once the brief coffee-led boom was over, government continued what might be called a growth activist policy, reflected in government deficits that reached 3 percent of GDP during 1982-1984, with the tax/GDP ratio falling back to about 9 percent and an accelerated growth in the money supply, exceeding 40 percent in 1980. Inflation remained at the high levels reached during the coffee boom. This relative growth activism ultimately led to a balance of payments and reserves crisis in 1981-1982. Colombia nevertheless may be viewed as a relatively mild version of the Latin American syndrome.

By contrast, Mexico witnessed a period of "development with stability" from 1960 to 1973—that is, restrained government expenditures with a relatively low tax effort, (6 percent of GDP) resulting in low rates of inflation and positive real interest rates throughout the 1960s. However, the nominal exchange rate was kept fixed so that, even with low inflation, there was a steady real appreciation of the currency, partly responsible for the decline in the export/GDP ratio. Moreover, unlike the case of Colombia, there was little import liberalization. In fact, tariffs were raised and there was no reduction in the coverage of quantitative restrictions (QRs). Once the era of conservatism in macroeconomic policies ended in the early 1970s it was displaced by public expenditure-led growth marked by an increase in fiscal deficits, ranging between 3 and 4 percent of GDP until 1980, and jumping to 6 percent in 1981 and 16 percent in 1982. The money supply grew at more than 60 percent annually, and the net flow of external debt increased from 4 percent in 1973 to 10 percent in 1981. The delayed consequences for inflation are clear: one-digit levels in the 1960s jumped to over 20 percent during 1974-1981 and 60 percent during 1982-1986. Rates of interest after 1973 have been negative. The oil boom was not used to advantage to restructure the economy. Once the boom ended in 1981, the rise in international interest rates and the drying up of generous foreign capital inflows led to a collapse of the economy, negative growth, and major structural adjustments which are still in full swing.

A typical tendency to delay taking politically unpopular actions was demonstrated twice during the downturn with regard to exchange rate management. When faced with a balance of payments crisis in 1974-1976, the government reacted by imposing trade controls and postponing devaluation. As the crisis deepened and capital flight reached critical proportions, it was finally decided in 1976 to float the peso. Then during the post-oil-boom crisis of 1981-1982 when trade controls were initially imposed, mini devaluations were again postponed until a maxi devaluation became necessary. Renewed attempts at trade liberalization were made after 1984, starting with the replacement of QRs by tariffs and characterized by the ultimate accession to GATT. In more recent years, a major liberalization effort has begun in all markets; currently a fundamental shift in flows seems to be underway in Mexico's development pattern with the help of a negotiated social contract and foreign capital inflows under the Brady Plan.

To summarize, in both Latin American cases there is evidence of growth activist behavior that while temporarily successful, ultimately proved self-defeating. There was a marked tendency to prefer politically convenient solutions and a subsequent retreat into import substitution types of interventionism, including a preference for inflation over explicit taxation. The result: negative real rates of interest, overvalued exchange rates, and

"temporarily" increased trade barriers. Given the vested interests that established themselves under hot-house conditions earlier, there is an unmistakable tendency to postpone as long as possible actions that may be economically rational but politically difficult.

Colombia—at least until very recently—showed greater price flexibility and less policy oscillation than did Mexico. Both countries, like most of Latin America, have a relatively good natural resource base, a source of rents to be fought over and exploited on behalf of the industrialization effort. But differences in the nature of that endowment—the fact that Colombian coffee is grown by a smallholders yielding a smaller scope for monopoly rent-seeking than that provided in the case of Mexican oil and minerals—may have something to do with the differential, until recently, in policy choice and performance. This, together with the all-too-easily available foreign capital in the wake of Mexico's oil bonanza and her favored position generally in the minds of American investors during the 1970s, contributed to her more extreme "Latin American" behavior until the early 1980s.

Korea and Taiwan

At the other end of the spectrum, are Korea and Taiwan. While there again exist behavioral differences within the family, what distinguishes them from the Latin American type is indeed much more important. Specifically, these two NIEs seem to have avoided a strategy of forcing growth beyond "natural" levels through the pursuit of growth activist policies and the use of covert means for transferring incomes. This is reflected, among other things, in relatively low government deficits, relatively low rates of money growth and inflation, positive real rates of interest, and more or less flexible and realistic exchange rates. We can thus observe a more pronounced trend toward depoliticization of the economic system and much more linearity or less oscillation along that trend.

Both these East Asian NIEs achieved high real growth rates during the good and bad periods—that is, roughly before and after 1973. As industrial production and exports diversified in the 1960s with the shift from PIS to PES policies, both economies became much less dependent on rents from agriculture and much less affected by terms of trade fluctuations or, with time, even the international business cycle and neoprotectionism abroad. Consequently, they found it easier to maintain a more or less steady policy course. In this sense, early success in liberalization begat more success by moderating policy oscillations in response to the inevitable exogenous shocks.

The overall attitude toward growth management in East Asia is reflected in various areas of policymaking. In Taiwan, which provides the best example of consistently prudent fiscal policies, budgetary deficits were a rare phenomenon. In fact, after 1964, Taiwan generated surpluses in all years except 1982 when a small deficit emerged. In Korea, deficits were kept below 1 percent of GDP in all but three years during the favorable phase. Although higher during the downturn, deficits were kept substantially lower than in most other NIEs. An important factor underlying these relatively low fiscal deficits in East Asia is the almost linear trend toward increased tax efforts in both countries, exceeding 15 percent in Korea by 1983 and 17 percent in Taiwan.

The key elements of restraint in good times and flexibility in bad times were evidenced in the monetary, exchange rate, and fiscal policy (the behavior once again was somewhat more consistent in Taiwan than in Korea.) Korea's inflation was only 15 percent before 1973, but it increased to 20 to 25 percent during 1973-1980, consistent with the more expansionary policies followed during this period. However, the adoption of stabilization policies after 1971 led to a dramatic drop in inflation during the 1980s. While interest rate reform in 1965 had helped keep nominal rates positive for most of the upturn, a combination of high inflation and low nominal rates ultimately resulted in negative rates during the post 1973 downturn. Exchange rates were maintained more or less realistically, if again somewhat less consistently than in Taiwan; moreover, in both countries there has been gradual trade liberalization starting with the early reforms of 1964, the replacement of most QRs by tariffs a bit later, and some harmonization and reduction in tariff rates since. In Taiwan, the

rate of money growth was remarkably stable in both the pre- and post-1973 periods, mostly ranging between 20 and 25 percent annually. As a consequence, inflation was stable and remarkably low, below 6 percent in all but one year during the pre-1973 period and in all but five years in the post-1973 downturn. Low inflation, combined with a flexible nominal interest rate policy, helped keep real interest rates positive. Thus, the message from East Asia has been that early monetary restraint and the maintenance of a realistic foreign exchange rate are perhaps more important than the elimination of trade barriers that can be tackled at a later point during the long-run evolution of policies.

All the elements of a typical import-substitution policy mix, (protectionism, import controls, multiple exchange rates, government deficits, substantial inflation, emphasis on public enterprises, and a pronounced dedication to the idea of government planning) were present in East Asia in the 1950s. However, it was a substantially milder version than its Latin American counterpart; the fiscal system since the late 1950s had been deployed to avoid large-scale deficits, and monetary policy and interest rate policy became more realistic even during the later years of that PIS decade. For example, consolidated income tax reforms were promulgated as early as 1955 in Taiwan, and budgetary surpluses began to appear with the nineteen points of structural reform in the early 1960s.

Important differences between Korea and Taiwan also can be instructive. In Taiwan, growth was almost always allowed to follow its "natural" path. In other words, growth rates were permitted to decline after each of the two oil shocks before recovering to their normally high levels. In Korea, on the other hand, an attempt was made initially to maintain growth following the first oil shock. The annual average growth rate during 1974-1975 was 6.5 percent compared to 3 percent in Taiwan. Growth was further accelerated during 1976-1979 and maintained at an "unnatural" rate of 11 percent with the help of a large state-supported investment program (that included heavy and chemical industries plus infrastructure), financed largely by foreign borrowing. This is in contrast to Taiwan, where the same 11 percent growth rate was achieved without excessive intervention.

Ultimately, the "forced march" strategy in Korea had to be abandoned and led to negative growth in 1980. Some of the major policy mistakes for example in the petrochemical and other heavy industries, were associated with the political instability surrounding the fear of U.S. withdrawal (therefore the felt need for greater defense autonomy) and President Park's assassination. But to this day there is greater willingness to push the accelerator of expansionist government policies than reduce rates of growth of output or exports.

There were thus substantially more fluctuations in policy in Korea, including the occasional emergence of serious budget deficits. But here also this usually led, with a lag, to the search for new taxes and the reduction of deficits and inflation. In both these NIE cases, governments ultimately did not try to suppress the interest rate by further monetary expansion. They permitted the rate to move upward toward equilibrium values and thus avoided increases in velocity and further inflation. It is this avoidance of an increase in velocity, resulting from the nonbank public's reaction of "fighting back" to avoid resources being snatched away from it, that makes a critical difference.

The removal of some of the repression in the money market, still very typical in most NIEs, was initiated in Taiwan as early as 1955 and reaffirmed in 1972. In Korea, the 1965 reforms went a long way in that direction, though there was slippage later on. All this is not to say that there wasn't a good deal of direct credit allocation in both Taiwan and Korea throughout the period; in fact, the so-called commercial banking system in both NIEs is very much misnomered. It remains a part of the public sector even when it is "privatized" and allocations continue to be directed toward particular firms, especially in the case of Korea. However, viewed from long-term perspective, the notion took hold relatively early in East Asia that money creation is not to be used consistently as a way to force savings and shift profits to favored private parties or state enterprises.

The role of public enterprise has varied substantially across these two East Asian NIEs as well as over time, and it has continued to be much more important than the usual liberal

laissez-faire rhetoric would indicate. By the time Taiwan entered into what might be called secondary import-cum-export substitution in the late 1970s, the ten big projects had become part of the government's program, focusing not only on overheads but also on areas where the government was seeking a natural monopoly. The fledgling capital markets were not viewed as viable alternatives. This is not to contradict the well-known fact that the growth of directly productive activities in both these fast-growing East Asian economies has taken place primarily in the private sector.

However, the overall pattern of development as well as the character of industrialization in the two systems has been quite different. For a number of reasons, including Taiwan's much greater attention to agricultural mobilization, its industrialization has been much more rural oriented and decentralized, while that of Korea has been more urban oriented and concentrated. This has had serious consequences: in the case of Korea it was reflected in relatively higher capital intensity in industry, relatively greater reliance on foreign capital, leading to higher indebtedness, as well as relatively less feedback for agricultural productivity increase. Although both systems benefited from land reforms instituted in the early postwar period, spatially dispersed farmers were less neglected in Taiwan—paving the way for the fuller deployment of decentralized nonagricultural activity and a much improved distribution of income and growth. As a consequence, there was a good deal more industrial subcontracting, with medium- and small-scale firms reaching out into the countryside, while processes taking advantage of economies of scale remained in the urban centers.

There is thus much less connection between agricultural and nonagricultural activities in Korea than in Taiwan, although still more than in the Latin American countries. The more pronounced concentration and monopoly characteristics of industrialization in Korea also have meant that market liberalization has led to a more unequal distribution of income, given the absence of the same workably competitive pressures to which, until very recently, Taiwan had been exposing its industrial sector. The Korean government was more inclined to provide specific directional controls rather than across-the-board harmonized protection to its industrial activities. This meant that specific urban industries or even firms were given direct credit allocations at more favorable interest rates than other industries and new "strategic" industries were exempted from corporate taxes. In both cases, the increased competitiveness of domestic producers was seen to be crucial for the penetration of foreign markets, but it was also felt that domestic consumers could be exploited as long as politically feasible. The sequential order of East Asian liberalization implied that, while the sovereign state clearly cannot exploit foreign consumers, it can, for a good while, squeeze its domestic consumers. Domestic entrepreneurs, once they had demonstrated their competitiveness in foreign markets, proved less fearful of going head to head later on with foreigners in the domestic market.

In East Asia the overvalued exchange rate was abandoned early as a primary device for transferring incomes from primary producers to the new urban industrial class. This was partly because natural resources, (often used to fuel increasingly inefficient industrialization processes), were scarce in East Asia, and foreign aid, (which can help keep the process going), was terminated in the early 1960s in Taiwan, and substantially reduced in Korea. In other words, neither natural-resource-based rents nor the equivalent flow of foreign capital to fuel the continuing expansion of noncompetitive industries could continue to be counted on; a change in the policy mix was forced, in the national interest, in the early 1960s.

The same price responsiveness, flexibility, and pragmatism have been in evidence since then, not only in macroeconomic policy but also in education, science and technology, agriculture, and all areas sensitive to the containment of new problems that inevitably arise in trying to maintain a dynamic comparative advantage. For example, by the early 1970s, when the cheap labor surplus condition had basically been exhausted in both societies, the need for further development of human resources placed much greater emphasis on the quality dimensions of growth, including skilled labor, high-talent manpower, and R&D—all requiring more support for the systems' science and technology infrastructure. Compulsory

education was quickly extended, vocational education and manpower training promoted, institutes of science and technology and industrial science and technology parks established. Such institutional change and flexibility are essential to the success of directly productive private activities, especially in the nonagricultural sector but also in agriculture. For example, with respect to the latter, once labor shortages arose in Taiwan it shifted to its second land reform, a package that included joint farm management, contract farming, the enlargement of farm size through land consolidation schemes—all responses to a changing factor endowment in an effort to avoid the Japanese phenomenon of soaring land prices. In the industrial sector, export processing zones, bonded warehouses, and industrial estates were among the institutional innovations by the government. Also helpful was the East Asian patent system, characterized by flexibility in handling patent infringement claims and an unwillingness to let foreign multinationals use patents for blocking purposes. The East Asians seem to be searching for a Japanese-type system where the legal structure (including the option of a lower threshold, lower cost patent—the utility model) has proven very effective in encouraging the informal medium- and small-scale or “blue collar” type of innovation.

With respect to credit markets, the role of government has been much more restricted, both for good and for ill. Both these NIEs are only now embarking on an effort to broaden financial markets and provide for a more specialized financial intermediation network, including the establishment of bond and broader organized money and equity markets, with the help of appropriate institutional innovations. The same thing may be said about international capital markets. The East Asian NIEs realized quite early that foreign investment had a positive role to play and should be encouraged by statute. Nevertheless, liberalization has come very slowly; restrictions continue to be in vogue and substantial DFI flows began in earnest in Taiwan only after the termination of U.S. aid in the mid-1960s. Since then we have witnessed the gradual institutionalization of direct investment through further reductions of government restrictions on foreign operations, including on export prohibitions, as well as the positive government encouragement of joint ventures and the gradual opening up of the services sector to foreign investors.

Finally, it is interesting to briefly examine the organization for planning by the government in the East Asian NIEs. In Taiwan, while the locus for government planning shifted from the Council of International Economic Cooperation and Development in 1963 to the Economic Planning Council in 1973, development plans have been increasingly viewed as think-pieces or general guidelines, in the vein of France's indicative plans. The plans convey a sense of national purpose and are not in any sense mandatory or regulatory. In fact, when the planning function was once again reorganized in 1977, this time under the Council for Economic Planning and Development, there was even less concern with any formal, resource-oriented planning effort and almost entirely with policy debates and the pragmatic formulation of future attitudes toward the private sector—very much along the lines of the U.S. Council of Economic Advisors. To this day this is somewhat different than in Korea where the Economic Planning Board has had more regulatory and budgetary functions, but the same trend over time may be said to have been exhibited in Korea as well.

Thailand and the Philippines

The so-called “intermediate” pair of countries, Thailand and the Philippines, clearly represent geographic neighbors with not so different initial endowment conditions, and similar external conditions before and after 1973. Once the international situation deteriorated after 1973 both achieved respectable performances during the early favorable period. However, Thailand accepted a steady, if moderate, decline in growth, but the Philippines attempted to maintain growth through domestic and external-debt-financed activist policies. This strategy initially led to higher growth, but ultimately it was self-defeating. Growth rates plummeted in the 1980s before becoming negative, until the most recent recovery.

Both of these NIEs were, to some extent, encouraged by the international boom to expand government expenditures and run large deficits; but, once the situation reversed, Thailand was able to reverse its policies and tighten its belt, partly via higher taxes, while the Philippines attempted to maintain growth rates by a combination of budget deficits and larger foreign borrowings. The tax effort as measured by the tax/GDP ratio has been markedly lower in the Philippines, fluctuating between 7 and 11 percent since 1975. In contrast, in Thailand there has been a steady if moderate upward trend, culminating in a 14 percent ratio by 1983.

Contrasts can also be observed in the monetary policy of the two countries although trends in the rate of growth of the money supply were not as different as one might have expected. In Thailand the central bank behaved much more autonomously, while in the Philippines it behaved clearly as an extension of an activist government. The level of velocity in the more inflation-sensitive Philippines was substantially higher than in Thailand. Once again, action was taken in Thailand that permitted various prices to adjust before things got out of control. This was not the case in the Philippines. For example, after Thailand's inflation reached a peak of 16 percent in 1980 following the second oil shock, corrective steps were taken, and inflation was brought down steadily over the next few years. In the Philippines, by contrast, the peak was also reached in 1980, but the subsequent drop was moderate and not sustained with inflation rates again increasing to 54 percent in the early 1980s.

The same striking contrast can be seen in the two countries' interest rate policies. While Thailand succeeded in maintaining reasonably stable positive real rates throughout, the Philippines experienced lower, even negative, rates most of the time, leading to lower savings rates and a much more segmented repressed credit market. With regard to exchange rate management and trade controls, the Philippines had initiated decontrol in 1962. Quantitative restrictions gradually were replaced by tariffs, and the peso was devalued. However, following the balance of payments crisis of 1967, the Philippine government, reluctant to devalue, reimposed a series of foreign exchange controls. These actions were not sufficient to prevent another serious balance of payments crisis in 1970, after which the peso was floated. In Thailand the real exchange rate did not appreciate very much during the good (pre-1973) years; in fact it depreciated slightly. Then, during the downturn after 1973, as the nominal rate was kept fixed, the real rate did appreciate significantly, but the degree of overvaluation was much less, compared to that of the Philippines, and was tackled much earlier, (in 1980, not 1983).

Although Thailand and the Philippines are geographic neighbors, the pattern of their policy evolution and their responses to similar shocks have differed markedly. There has been a steady-as-you-go aspect to Thailand's policy orientation over time, with substantially more oscillations and an uncertain trend in evidence in the Philippines.

Brief Conclusions

It has become increasingly obvious in recent years, to both the NIEs and the donor-creditor community, that any consideration of development policy requires not just an examination of the different adjustment packages proposed, but also an understanding of the more subtle, political-economy-tinged processes as well as the purely technical issues. After more than forty years of a build-up in human capacity in the Third World, and forty years of discourse between the donor-creditor and the recipient-debtor communities, the question becomes one of responding knowledgeably to relatively well-understood phenomena rather than attempting to understand new situations. This has led me to examine the political economy context of policymaking in the context of achieving and maintaining continuously competitive industrialization in the NIEs. An economic system's initial conditions affect not only the initial levels of income and welfare but also the policy responsiveness and flexibility that follow—that is, the extent to which development policies can be accommodating rather than obstructive in the Kuznets sense.

Some of the general conclusions that follow from my examination of these three pairs of NIEs may be summarized as follows:

1. Once an economy has become export oriented, and after the almost inevitable import substitution phase has been left behind, the government's attention shifts from watching prices and quantities to watching quantities and letting prices be more determined by the market. In the case of monetary policy, the principle of watching quantity seems to constitute a quantity theory type of advice, namely that even the world's most experienced central bankers should watch the quantity of money and forget about trying to control the rate of interest, and allow it to be determined in the loanable funds market. There the question becomes one of ensuring that the system does not get into an inflation sensitive area where velocity begins to be responsive. Since some degree of forced savings is desirable—and exists everywhere—the money growth rate should be limited to something between the rate of growth of GNP and that rate which gets into the inflation sensitive range, probably 15 percent in Asia and 25 percent in Latin America.

With respect to foreign exchange management, the same general principle applies, that is, moving to a relatively clean float system in which the quantity of reserves is watched and the level of the foreign exchange rate is no longer viewed as sensitive, for political or economic reasons. The maintenance of a slightly undervalued exchange rate is certainly desirable, even when countries have moved further along, as the East Asians have. The quantity of foreign exchange reserves held should become more a function of the relatively constant amount needed for transactions purposes—since the holding of large quantities of nonearning assets is still a luxury in a developing country. Money of external and internal origin, in other words, should be examined from the point of view of what is necessary for transactions purposes, with money as a domestic means of exchange and foreign exchange reserves as a medium of exchange for international transactions purposes to accommodate a changing international division of labor. In both cases, this motto would imply an increasing emphasis on efficiency through decentralized choices by market forces over time. As the interest rate is liberalized, there is less need for credit rationing by political force, and as the foreign exchange rate is liberalized, there is less need for foreign exchange rationing.

2. Reducing protectionism can wait a bit (and usually does). No government makes daily adjustments in its tariff structure, but it does make daily discretionary decisions about the supply of money and the foreign exchange rate. In that sense, distortions by tariffs represent a lesser case of ad hoc and whimsical inefficiency, while QRs, of course, perform worse in this respect. Sovereign states' exercise of monopoly power through the printing of money and the compulsory purchase of foreign exchange can be much more damaging to a competitive industrialization process on an efficiency basis than the retention of import duties for some time. In fact, the liberalization movement, if it is going to take hold and persevere, is likely to require the acceptance of a monetary philosophy that regards money and reserves as mediums of exchange rather than as purchasing power to be artificially created and manipulated on behalf of socially desirable ends.
3. A moderate amount of forced saving makes sense as long as it doesn't deteriorate into hyperinflation, which requires a strategy that victimizes the least powerful social groups: unorganized workers and dispersed agriculturalists and nonagriculturalists in the rural areas. A commitment to monetary conservatism also implies increased fiscal responsibility—that is, covert income transfers increasingly being replaced by taxation with consent, with the costs explicitly calculated, debated, and apportioned to social groups according to an implicit or explicit social contract. This entails moving consistently to augment fiscal revenues from indirect to direct domestic taxes and away from reliance on international-trade-related indirect taxes. On the

expenditure side, it means a reduction in the urban bias of most government infrastructural allocations—all this is much easier to accomplish if decision-making is decentralized within the public sector.

4. Changing policy is difficult in NIEs as it is in most economies because of the political opposition it invites from social groups with a vested interest in the status quo. Moreover, it takes time for new institutions to replace the old. In most societies with known political pressures and administrative constraints of the human capital variety, the government cannot be expected to do or undo everything at once. Thus, "going cold turkey," while theoretically often sensible in terms of a reform program, is politically very difficult, and some transition period may have to be allowed on the liberalization path. For example, continuing to settle some problems through inflation, at least at a moderate level, is often a habit that cannot be quickly relaxed because the political art of consensus formation is not yet developed, even in the more advanced countries.
5. A three-stage, priority-oriented approach to reform suggests itself on the basis of the experience to date. The first stage might involve exchange rate reforms via a relatively clean float, moving the system toward an equilibrium exchange rate, plus monetary decontrol to ultimately achieve an equilibrium interest rate. At this stage the printing of money should be permitted at a smooth and steady pace, somewhere between the rate of growth of output and the inflation rate considered well within the bounds of national expectations that trigger hyperinflation. All of this is a concession to the government's assumed initial inability to raise taxes to the extent necessary. In the second stage a relatively neutral tax reform, involving a shift from indirect, international-trade-related taxes to direct and indirect domestic taxes, might be carried out. During this stage the resistance of urban interest groups is gradually overcome. The ultimate reduction of import duties is likely to be helped by consumer protests once urban consumers realize that they have long been paying for the inefficiency of domestic industries. Such protests will gradually gain momentum as import liberalization proceeds or as consumers have more opportunity to travel abroad and compare domestic and world prices. In the third stage, given increased revenues, the government should think in terms of increases in nonhousehold, line-ministry expenditures (on education, science and technology, R&D, etc.), based on the increasing need for externalities that can only be provided by government. Small-scale and rural producers will initially benefit the most from this liberalization path. Later on institutional and organizational innovations, especially in the financial markets sphere, will be required to accommodate the need for the efficient growth of large-scale industrial activities subject to economies of scale. Matching many relatively small savers with the large-scale investment needs of a more technology- and capital-intensive product mix does not require the heavy involvement of government, either as entrepreneur or directional guide, if the appropriate organizational infrastructure is created. Needless to add, the efficient functioning of such activities often depends on early access to international markets, with the wings of the so-called "flying geese" adjusted to the size of the country as it moves from secondary import to secondary export substitution.
6. Regarding the international trade dimensions of growth, the importance of the mobilization of the agricultural sector as part and parcel of a competitive outward-oriented industrialization process should not be overlooked. The East Asian example, specially Taiwan's, indicates that even in small countries balanced growth in the rural areas, based on the dynamic interaction between productivity growth in agriculture and in rural industry and services, represents one important blade of the development scissors, with dynamically competitive industrial exports representing the second blade. This is not just the well-recognized issue of a lagging agriculture

sector depriving the system of an important source of domestic saving, wage goods, etc., but also depriving it of linkages between agriculture and a decentralized, industrial sector. Such linkages often directly improve the international competitiveness of the urban industry via subcontracting arrangements. The differential behavior of the family distribution of income during the growth process, as shown in Table 2, can be largely attributed to the greater importance of nonagricultural incomes in the total incomes of rural families in East Asia (often 60 percent or more) than in Latin America (often 20 percent or less).

7. A competitive environment in the industrial sector (horizontally as well as between large-scale and medium- and small-scale units) is as essential a component of industrial competitiveness as, say, import liberalization. In its absence increased entry for foreign goods and even the privatization of directly productive public-sector activities will not necessarily have the desired price effects but simply enhance oligopoly profits. This contrast is brought out not only by a comparison between Latin America and East Asia but also between Taiwan and Korea.
8. Finally, a general word on the lessons for labor market policies. The so-called "repressive" labor market in East Asia during the 1960s and 1970s has often been contrasted with the greater role for unions, minimum wage legislation, etc., in Latin America. It seems quite clear that labor legislation including legislation dealing with employment, labor relations and working conditions, retirement benefits, and minimum wages has not been on the front burner in East Asia and thus has not raised the real cost of labor. The governments seem to have kept in mind the importance of participation by the working class, (with relevance attached to working class incomes rather than wage rates of individual, elite, working class members), all of which is much easier to accomplish when there is no strong union organization. Unions derive their power from governments in labor surplus situations, and the nexus of minimum wage legislation and government intervention on behalf of organized workers may be counterproductive with respect to the very people it is meant to help. Certainly, before the labor surplus has become exhausted (as a consequence of a successful two-bladed development effort) artificially raising organized sector wages is bound to lower employment sufficiently to result in a reduction of organized sector wage incomes and a worsening of the overall distribution of income.

9

THE EXPERIENCE OF EASTERN EUROPE: PROBLEMS OF TRANSITION

Włodzimierz Brus

The experience of Eastern Europe, including the Soviet Union, shows the pitfalls of the Soviet-type modernization strategy pursued by all Communist countries and with some modifications by China, especially in the period of the first Five Year Plan, 1953-57. There were evident gains in terms of industrialization of the once predominantly rural economies (with the notable exceptions of East Germany, Czechoslovakia, Western Poland) as well as spectacular successes in selected areas (for example, space exploration and weapons in the Soviet Union). But the overall results must be regarded as highly disappointing not only because of the enormous material and human cost, but also from the point of view of further development potential.

On the eve of the present remarkable transition the term "conservative modernization" (Brus and Laski 1989) seems well suited to the Communist economies: namely economies characterized by predominantly imitative technical progress, obsolete industrial structures with exports largely of primary and semi-processed goods, and imports concentrated in manufactures with a high-technology content. This structure of foreign trade, as well as the disproportionately low share of the centrally planned economies (CPEs) in world trade (rarely exceeding 10 percent even though they claim to produce one third of world industrial production), clearly indicates the failure of Eastern Europe to catch up with modern economic exigencies. Moreover, the dynamics look bad: in 1987 the East European share in world exports was 8.8 percent compared with 10.2 percent in 1970; its share in imports was 7.9 percent in 1987 compared with 9.6 percent in 1970 (ECE 1989). In 1970 only 3 percent of total OECD imports came from Eastern Europe (including intra-German trade), but by 1988 this share had dropped to 2.4 percent (Stankovsky 1989). On the other hand, the share of the Asian newly industrialized countries (NICs) in OECD imports increased from 0.6 percent in 1965 to 6 percent in 1988.

Up to a point, these failures could be ascribed to deliberate inward-looking policies of import substitution at any price instead of active pursuance of comparative advantage in foreign trade (Köves 1985). But already by the end of the 1960s and the beginning of the 1970s, most East European countries had made attempts to switch to outward-looking policies. Massive imports of Western equipment and know-how—either on credit or by using the huge windfall profits from oil and gas exports (the Soviet Union)—were expected to enable the East European economies to become competitive internationally and ultimately reduce their debt.

A number of reasons can be cited as to why these expectations were frustrated (Western slump, higher interest rates, the diversion of a substantial part of imports to domestic consumption to placate consumers), but the main cause was the inefficiency of the command system in managing the economy. This system proved incapable of proper absorption of resources. The waste of profits from energy exports in the Soviet case and the heavy burden

of foreign debt in the case of several East European countries are the legacy of this attempt to use extra resources not as a lever for changing the economic system but as a possible substitute for change.

The link between "conservative modernization" and the command system of managing the economy needs some elaboration because it explains the present direction of systemic change. The Soviet-type modernization strategy, which aimed at rapid industrialization and urbanization, concentrated on three main points: fast growth through a steep rise in the rate of accumulation, selective growth, and output and employment maximization. The command system was instrumental in attaining all of these tasks. Enforcement of the desired rate of accumulation proceeded through strict control over the terms of trade between the state as an integrated producer, employer, and seller on the one side and the households on the other side. The mechanism of forced savings consisted of administrative determination of prices and wages, and when this proved insufficient, repressed inflation (disguised rationing and queueing) filled the gaps. Selective development was enforced by physical allocation of resources to chosen users on the basis of the planners' adjustment of output and input schedules (the method of balances). Output maximization was pursued through obligatory plan targets. The feeding mechanism, both with regard to supply of factors in physical terms and to finance, was geared to fulfillment of plan objectives—this was also the main measure of success for all levels of organizational hierarchy. Within the state-run production sector, money played only a passive role; enterprises operated under the "soft budget constraint". The domestic economy was insulated from external influences by the state monopoly of foreign trade. The state operated a strict and comprehensive export/import plan and neutralized the external profits or losses of domestic enterprises by individual taxation and subsidies, the so-called "price equalization mechanism."

The link between the command system and the Soviet-type modernization strategy is quite clear, even in this extremely compressed presentation. In what way, however, has the command system contributed to the conservatism of this modernization, and hence to the low degree of competitiveness in foreign trade? The general answer is simple: by informational weaknesses combined with the weakness of incentives. The government's reliance on material balances with hundreds of thousands of items makes compiling a comprehensive and consistent plan impossible. Priorities must be established (that is segments of the plan that must be fulfilled regardless of the consequences for the rest). Needless to say, this can be achieved only for a limited number of objectives, usually politically determined. The informational deficiency is even greater when questions of efficiency come in. It is obviously not enough to balance imports with exports. The opportunities to improve the composition of trade must be evaluated, and this in turn requires the instrument of prices, which for better or worse perform the function of information carriers.

In the command system (with the dominance of physical planning, the passive role of money, and hence the low responsiveness to prices by managers of nationalized enterprises) the role of prices in efficiency calculations is minimal. Moreover, taking into account the quality of prices under the command system—their failure to reflect many elements of social costs (capital, natural resources) as well as supply/demand conditions and the bureaucratic way in which prices are formed—it was perhaps more rational *not* to use them in efficiency calculations. The use (with all kinds of modifications) of world market prices in trade within the Council for Mutual Economic Assistance or Comecon (CMEA) helped a little, but could not change the situation substantially in view of the insulation of the domestic economy from the external economy. The information barrier to both consistency and efficiency of plans omits the additional difficulties stemming from arbitrary political decisions.

The second aspect—weakness and distortion of incentives—is closely related to the first one. The very logic of the command system demands that incentives should be geared to plan fulfillment. The seeming simplicity of such an arrangement vanishes when confronted with the multiplicity of conflicting targets and the plan pressure, which is meant to provide a kind of substitute for the lack of competitive pressure. The most widely practiced form of

the plan pressure is the notorious method of "planning from the achieved level"—the so-called "ratchet principle." This transforms, almost automatically, every attainment in a given period into a starting point for an increase of the target in the next one. Under the circumstances an informal managerial pattern of behavior has evolved: priority adjustment, a peculiar "minimax" strategy, and aversion to change.

Priority adjustment means choosing among conflicting objectives of the plan that promise the best and least controllable results in terms of plan-fulfillment. This is one of the main reasons for the neglect of quality and production of unsalable goods (which coexist with the ubiquitous shortages). The peculiar "minimax" strategy entails finding ways to minimize plan targets and maximize planned allocation of resources, including manpower and wages. There is no need here to describe how this is actually done, but this is the major cause of over staffing, excessive use of energy, and the propensity to produce heavy goods etc.. The aversion to change—both of the methods of production and of the products themselves—stems from the same motivation. It explains also the characteristic discrepancy in Eastern Europe and the Soviet Union between achievements in the fundamental sciences and applied research, or even between success in small-scale technological advances and mass application.

The success stories in arms production and space exploration—achieved by enormous concentration of effort and disregard of overall cost—have not spilled over into wider industrial successes. This is not only because of excessive secrecy but also because of the lack of interest on the part of prospective users of new technologies and materials. All this does not mean that innovators and people keen to do their work properly are totally absent among managers and workers in Eastern Europe under the command system; it means only that they have to act, not in accordance with the true pattern of incentives generated by the system, but rather against it. In the long run this is inevitably a lost battle, with consequences throughout the economy, and particularly in the country's ability to compete in world markets.

The command system has had a detrimental effect on the competitive potential in foreign trade of all East European countries, regardless of their level of development and past positions on the world markets. Obviously, in absolute terms, Czechoslovakia or East Germany produce better quality goods and are more competitive than the others. But a comparison of their present position with the interwar period, when Czechoslovakia, for example, was one of the leading industrial countries and a leading exporter of engineering products in Europe, suggests that in relative terms the most highly developed of the East European countries declined the most. As a result, the East European export of manufactures had to be directed toward the CMEA market (and for barter transactions with some developing countries). Over time this has produced a negative cumulative effect on competitiveness. The availability of easy markets secured through detailed intergovernmental agreements linked to domestic plans has steered industry further away from emphasis on quality and modernity of its products, making it even less competitive and hence more dependent on CMEA.

The link between the command system and weak competitiveness may appear more ambiguous in the case of Yugoslavia. After faithfully imitating the Soviet system in the immediate postwar period, Yugoslavia in 1950 began to develop a rather unique structure of self-management that inevitably required more reliance on market mechanisms. And yet, it is often argued, the competitive strength of the country does not look better than most of the other East Europeans. The Yugoslav case is complex indeed, not least because of its ethnic and regional diversity as well as the peculiar economic implications of self-management, especially in the context of a mono-party state (Lydall 1984). Overall Yugoslavia's economic performance, particularly in the past decade, has been weak, but in terms of efficiency its performance has generally been better than that of the other command system countries. Yugoslavia also has a higher share of trade with the West compared with the CMEA. A second point is that marketization of the Yugoslav economy never actually reached the minimum critical threshold and since the beginning of the 1970s the system has degenerated

into a hardly workable "contractual" pattern (Brus and Laski 1989). For these reasons, Yugoslavia also faces the problem of reforming its economic system.

The inefficiency of the command system has been recognized for a long time in Eastern Europe. Since the second half of the 1950s, many economic reforms have been proposed, but countries were not persistent in implementing them. The most consistent and longest lasting reform was Hungary's "New Economic Mechanism" introduced in 1968.) Most reforms were abandoned, but even where they survived (as in Hungary), the results were far below expectations, and could not stem the deepening crisis. The manifold reasons are well documented (Kornai 1986; for China, Lin 1989). Resistance by the ruling Communist elites, the vested interests of social groups benefiting from the command system, and other social and political factors all impeded change. The past reforms also suffered from the conceptual inadequacy of a "half-way house." Even the product market functioned as an instrument of the plan, which retained its superior position in resource allocation on a national scale. To some extent, elements of such a "half-way house" can still be found in the present reform concepts. The blueprint for Soviet "radical economic reform" still reflects the endeavor to retain the socialist character of the system by insisting on a "plan-market combination," a dominant position of "social ownership," and rather wide state control over prices and investment. But now, several important points that were missing from the previous blueprints are gradually emerging, including the need for capital and labor markets, plurality of ownership, and more foreign economic relations.

In most other East European countries, the above-mentioned constraints have recently been overcome as a result of the growing economic pressure and of new political circumstances created by the collapse of Communist rule. This is particularly true of Poland and Hungary. (East Germany is clearly a special case in view of German unification. Czechoslovakia, in better economic shape, is acting more slowly. Romania is still in a state of chaos, and Bulgaria tends to imitate the Soviet line. Yugoslavia would require a separate discussion, as would probably the three Baltic republics of the Soviet Union—Lithuania, Latvia, and Estonia.)

The broad contours of the Polish/Hungarian program of systemic transformation are as follows:

- enterprises fully profit-oriented;
- basically free formation of prices, with the government engaged mainly in antimonopolistic activity; decontrolled wage negotiations;
- convertible currency; full dismantling of the state monopoly of foreign trade, implying either dissolution or a complete overhaul of the CMEA;
- establishment of capital markets, with a stock exchange, but perhaps a greater role assigned to the banking system; high degree of independence of the central bank from the government.
- equality of opportunity for all ownership sectors, with emphasis on increasing the share of the private sector; this requires large-scale privatization of public companies and new openings for foreign capital and investment.

Such a program cannot be called "reform" any more. The intention clearly is to *replace* a planned economy (with a near monopoly of public enterprises) by a market economy (with private enterprise, free to expand up to a dominant position.) Such a replacement at least conceptually, is not meant to preclude active economic policy by the state, but to keep any intervention within the market rules of the game.

Whatever the differences between the less and more radical programs of marketization, their general direction is similar. Judging from the experience so far, the differences are likely to diminish over time as consistency requirements necessitate radicalization of the more moderate blueprints (assuming of course that change will not be stopped by an orthodox backlash). However, the main difficulty of transition is in deciding not where to go, but how to get there. The countries face enormous hurdles as they move toward a market system and it is important not to minimize these challenges. Four of the most important considerations these countries will face are the following:

First, the transformation of a long-engrained command system into a market economy is unprecedented. It cannot be compared with, for example, the postwar decontrol of Germany (the "Erhard reform"), Britain or elsewhere. As someone has rightly said, the distinction is between the need to fill engines with petrol (the Western case,) and the need to build the engines from scratch (the present East European case). It is not only a matter of building the indispensable institutional infrastructure for the operation of the market, particularly if a satisfactory degree of competition is to be achieved. It is also a matter of promoting and developing new attitudes toward entrepreneurship, work practices, and job security. While deregulation, especially of price formation, is a necessary element of marketization, the latter cannot be simply reduced to the former. In the initial phase of transformation of the command system into a market economy, the state will have to play a particularly important role. Most of the market institutions in the market economies have evolved over a long period of time. However, in Eastern Europe they must be created by deliberate action in a time span that is very short in historical terms. The provision of the enabling environment thus becomes a major task for the state.

Second, systemic change (marketization) is intertwined with restructuring (that is, with shifts in sectoral proportions and product mix, modernization of production processes, and intensification of the fight against pollution). In most countries this twin task of marketization and restructuring actually becomes a triple task because of the urgent need to also stabilize the economy (Poland, Yugoslavia, the Soviet Union, Romania) or to avert the immediate threat to fragile stability (Hungary). Marketization by subjecting public enterprises to "hard budget constraints" (nonsubsidized prices, single exchange rates, real interest rates, and commercial credit conditions) is rightly regarded as an instrument of stabilization (the Polish anti-inflationary program named after vice-premier Balcerowicz is the best example) and restructuring. But the positive correlation between the elements of the triple task should not be understood as limitless, and possible conflicts should not be overlooked. The exclusive reliance on the impact of the market on stabilization and restructuring may result in unnecessarily deep recessionary phenomena in output and employment. It may force out of business companies or even entire sectors that are in temporary difficulty but may be viable in the long run. The threat of excessive reliance on marketization in dealing with the social and cultural infrastructure (health, education, basic research, arts, etc.) also must be kept in mind. All this adds to the complexity of the transition which can hardly avoid fine-tuning in the relationship between the invisible hand of the market and the visible hand of the government.

Third, the socio-political aspects of accomplishing the triple task are of paramount importance. The "East European revolution" of 1989 brought to power democratic regimes that can count on greater readiness by the people to endure the inevitable hardships of transition than could any of the previous Communist regimes. But popular support varies from country to country. Even the most popular governments should not over estimate the patience of their citizens. Not only should the possibility of political backlash be recognized but also that of economic failure when grievances long neglected translate into successful pressures for inflation-refueling compensations and other concessions that go against the objectives of systemic change and restructuring.

Finally, there is the external factor. Most European countries must combine straightforward assistance (stabilization loans, restructuring loans, debt rescheduling) with efforts to attract commercial foreign capital investment. This poses the difficult problem of balancing diverse interests. There is also the danger of international financial organizations applying standardized "adjustment programs" to economies that face extraordinary situations.

It seems unlikely, therefore, that the transformation of the command system into a market economy can be accomplished in one big jump. But even after the "critical mass" has been achieved, it is not clear that avoidance of a "half-way house" should be regarded as tantamount to abdication by the state of any substantial role in the economy. In my opinion, a "whole house" means only that the economy is basically coordinated by the market. The

government's role in correcting market failures and in stepping into spheres where the market cannot be relied upon at all (particularly with regard to social infrastructure and promotion of fundamental research) must not be destroyed. One of the most likely areas of government activity will be the area of industrial restructuring, so crucial for the enhancement of competitiveness on the world markets. Cooperation between government and business would be indispensable here. Needless to say, proper cooperation of this kind presents great difficulties, and although it may be regarded as the necessary condition of success, success is not certain. Too many factors are involved to expect similar institutional patterns to produce similar effects as performance differences among countries with comparable economic systems testify. The East European revolution has opened up truly exciting prospects on a world scale, but a long and stony way lies ahead before these prospects become reality.

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10

THE ROLE OF THE GOVERNMENT IN INDIAN INDUSTRIAL DEVELOPMENT

Ajit Singh

Introduction

Among the mixed economy Third World nations, India has long been regarded as an epitome of import substitution industrialization, with a pervasive involvement of the state in industrial development. The consequent pattern and performance of Indian industry have attracted a great deal of criticism from mainstream economists both at home and abroad as well as from the Bretton Woods institutions. In this paper, I shall discuss rationale for the specific pattern of development the Indian government chose after independence from British rule in 1947; the case of the critics of this highly interventionist model; the case that can be made against the critics; and policies for the future.

During the past fifteen years of severe turbulence in the international economy, the overall economic performance of India has been very creditable. The country has recorded a trend increase in its rate of economic growth since 1973. Between 1963 and 1973, India's rate of growth of GDP was about half as high as that of other Asian and Latin American countries. During the 1980s, the Indian growth rate rose to the average level of the Asian countries and was way above that of the Latin American countries, most of whom suffered a sharp setback to their economic prospects. Because it was able to significantly increase its trend rate of growth, India could be regarded as having been strikingly successful in coping with international economic fluctuations. The proponents of the Indian development model argue that this ability of the economy to withstand world economic shocks has largely been due to the country's long-term strategy of import substitution and technological self-reliance.

Indian Five-Year Plans and the Industrial Regime

The Indian five-year plans, the first of which was inaugurated in 1952, were designed to bring about planned economic and social development within a "socialist" framework. The plans pursued multiple objectives of industrialization, raising per capita incomes and equity in the distribution of gains from economic progress. As far as industrial strategy is concerned, the following elements were the most important during the 1950s, 1960s, and most of the 1970s.

First, the Indian planners emphasized the role of heavy industry in economic development and sought to build up as rapidly as possible the capital goods sector. Second, the plans envisaged a leading role for the public sector in this structural transformation of the economy. Not only was the government to play a dominant role in infrastructure investments (railways, electricity, etc.), but many industries, particularly in the capital goods sector, were exclusively reserved for development by the state. Third, major

investments in the private sector were to be carried out, not by the test of private profitability, but according to the requirements of the overall national plan. For example, car production might have been highly profitable, but the manufacturers were prohibited from expanding output since the use of scarce resources for the production of such luxuries was socially less beneficial than, say, for the production of tractors or ploughs. Fourth, the plans sought to bring about industrial development through protection; they also emphasized technological self-reliance and envisaged a limited role for direct foreign investment by multinationals.

As is well known, the economic rationale for this capital-goods-biased industrial strategy was provided by P.C. Mahalanobis. In the Mahalanobis model, essentially that of a closed economy, the development of the capital goods industry emerged as the main constraint on economic growth. This model of internal technological development and heavy industry development could be rationalized for an open economy of the size of India if one envisages slow world economic and trade rates, and, perhaps, falling commodity prices in world markets. Alternatively, it could also be justified in more orthodox terms along the lines that India's dynamic comparative advantage was in industries like steel for which the country had available the necessary raw materials in close proximity to each other (thus reducing the costs of transportation).

An important drawback of the heavy-industry-biased industrial strategy is that it conflicts with the employment objectives embodied in the five-year plans. These plans sought to square this circle by providing external and internal protection to a number of small-scale and cottage enterprises for which the capital-labor ratio was very low. Thus, for instance, modern textile factories were limited in how much they could expand their output so that they would not compete with the high-cost products of the cottage industries.

In implementing this industrial strategy and particularly in making the private sector conform to the requirements of the plans, the government used a wide variety of measures. The most important of these were industrial licensing; strict regime of import controls; subsidization of exports through special measures; administered prices for "crucial" or "essential" products such as steel, cement, sugar, aluminum; and fairly strict controls on foreign investment.

Industrial Performance

The industrial strategy of the five-year plans operated in the traditional form outlined above from 1952 to the early 1980s. Considered simply in terms of the growth of manufacturing production it cannot be regarded as a notable success. India's overall rate of expansion of manufacturing value added from 1950 to 1983 was only about 5 percent per annum. This is a significantly lower rate than that achieved by the other leading newly industrializing countries. As a consequence, India's share in Third World's manufacturing production (excluding China) declined from 13 percent in 1963 to only 8.3 percent in 1983. Moreover, because of the relatively slow long-term rate of growth of Indian industry, the structural transformation of the economy was much less than that of the other main semi-industrial countries. In 1980 manufacturing only accounted for 18 percent of GDP in India, compared with 28 percent in the Republic of Korea, 27 percent in Brazil, and 24 percent in Mexico.

It would be a mistake, however, to consider India's industrial progress in purely quantitative terms. In other dimensions, particularly in relation to the quality, the breadth and the depth of industrial development, the Indian capital goods industries performed well between 1950 and 1980, especially the various branches of mechanical, electrical engineering, and allied industries. Moreover, India is now not only a producer and exporter of many types of capital goods, but it is also a significant exporter of technology. This is true, of course, of a number of other semi-industrial countries as well. India however, occupies a leading position as an exporter of technology among the Third World countries—ahead of nations like Brazil and Mexico. A good indication of the depth of India's industrial development is

the fact that it has built a nuclear power station on its own. As the Financial Times noted, India is only one of the six countries in the world today that has done this. India also has a substantial capacity for building thermal and hydroelectric stations.

The Case of the Critics

Mrs. Isher J. Ahluwalia, a leading critic of the industrial strategy of the five-year plans, has summed up the Plans' main defects. In her view, the most important consequences of this industrial regime were: (a) barriers to entry into individual industries that limited the possibility of domestic competition; (b) indiscriminate and indefinite protection of domestic industries from foreign competition; (c) the adverse effects of protecting small-scale industries and regional dispersal of growth on the choice of the optimum scale of production; (d) barriers to exit by not allowing firms, even when they were non viable to close down, and the failure to move the resources to an alternative growing industry; (e) administrative hurdles inherent in a system of physical controls; (f) increased incentives for rent seeking activities that resulted in dampening entrepreneurship; and (g) little or no incentive to upgrade technology. Other critics (for example, the World Bank) have added to this formidable list. They have called attention to the (h) adverse effects of universal credit rationing through the nationalized banking system and to the (i) poor performance of public sector enterprises.

The critics suggest that these factors are largely responsible not only for the low, long-run growth of India's industrial economy but more importantly for the deceleration in the manufacturing growth rate after the 1960s. Manufacturing expanded at an average rate of 6.2 percent per annum between 1955 and 1965; however, the corresponding average growth rate in the following decade (1965 to 1975) was only 3.3 percent. Since the mid-1970s, there has been a notable improvement in manufacturing growth rates to 4.5 percent in the 1975-76 to 1980-81 period and to well over 6 percent during the 1980s. The critics of the old industries regime have ascribed this improvement to the gradual relaxation of industrial controls that began in the mid-1970s.

In the view of the critics, the precise link between the industrial policy regime and the deceleration in industrial growth between the mid-1960s and the mid-1970s is provided by the increases in capital-output ratios and a reduction in the growth rates of labor and total factor productivity in Indian industry during this period. Mrs. Ahluwalia suggests that with the relaxation of the planned industrial regime, these microeconomic indicators of economic efficiencies improved significantly in the past decade.

A Critique of the Critics

Critics of the planned industry regime concede that weaknesses in areas other than the trade and industrial policy may also have been responsible for the observed decline in the rate of growth of Indian manufacturing industry in the decade mid-1960s to mid-1970s. They point to (1) the slow rate of growth of demand for industrial output and (2) the low rate of investment in infrastructure (for example, railways, power), which also could have contributed to the poor industrial performance. Nevertheless, the critics seem to regard the industrial and trade policy regime as the main culprits.

It is maintained by other scholars, however, that factors (1) and (2) above, rather than the trade and industrial policy, were responsible for the deceleration in industrial growth during the 1965-75 period. This period coincided with at least three major shocks to the economy: the Indo-Pakistan War of 1965 and its aftermath, the Bangladesh War, and the 1973 oil price increase. These events, it is argued, had such a serious impact on the balance of payments and on the government's fiscal policy that the industrial growth rate was bound to suffer.

Thus, it is suggested that the relatively slow and fluctuating rate of growth of demand between the mid-1960s and the mid-1970s that emanated from the macroeconomic shocks

could adequately explain industry's poor performance without invoking the alleged microeconomic inefficiencies of the trade and industrial policy regime. Moreover, to the extent that the slow rate of growth of demand affects capacity utilization and capacity creation, the macroeconomic shocks could also have adversely affected the capital-output ratios and productivity growth in various industries.

With respect to the second broad area of the critics' argument—namely, that the improvement in Indian industrial performance during the past decade is due to the gradual introduction of internal and external liberalization measures—it is suggested that the stance of fiscal and monetary policy after the second oil shock has been rather different from that following the oil price increase of 1973-74. Instead of deflation, the government has deliberately followed an expansionary fiscal and monetary policy and tried to increase public investment since the 1970s. As Mr. Montek Singh Ahluwalia has observed:

"The behavior of public investment after the second oil shock was in marked contrast to the experience after the first oil shock and reflects a basic difference in the stance of macroeconomic policy. On the earlier occasion there had been a shift to a restrictive macroeconomic policy principally because of perceived dangers of inflation and this policy had depressed public investment in real terms...However the approach to controlling inflation on this occasion (i.e. after 1979) placed much more emphasis on removing short-term and medium-term supply bottlenecks. One reason for this change of emphasis is that the balance of macroeconomic policy was set in the light of priorities outlined in the Sixth Five-Year Plan which covered the period 1980-81 to 1984-85. The plan emphasized the importance of investments in several critical areas, especially in the energy, transport infrastructure."

Conclusion

The proponents of India's traditional industrial policy regime, which operated from 1950 to 1980, regard the success of the Indian economy in coping with the first oil shock as the high-water mark of this policy program. Despite the huge adverse movement in the terms of trade as a consequence of the oil price increase, the country was able to restore a current account balance in a very short period of time while recording a trend increase in its rate of industrial and overall economic growth. The main reason for these favorable developments, it is suggested, was the policy of technological self-reliance and the development of a diversified base of capital goods industries. This permitted India to sharply reduce the rate of growth of imports in the wake of the oil shock. Thus, the overall rate of growth in import volume was only 4.5 percent per annum between 1973-74 and 1978-79. Significantly, capital goods imports actually fell in volume terms during this five-year period. Moreover, the availability of indigenous supply-side capabilities that resulted from the industrial policy regime contributed to one extremely important feature of this period: India, unlike other semi-industrial countries, borrowed relatively little from the international capital markets in the 1970s. Had such supply-side capabilities not been available, the foreign exchange requirements of the investment program and hence the need to borrow would have been much greater than was the case.

There was a significant acceleration in Indian industrial growth during the 1980s, but this was achieved, unlike in the 1970s, at the expense of a serious deterioration in the current balance and a sharp increase in the country's debt service ratio. This has called into question the ability of the government to sustain such a program for very long and raised fears that the country will slide into an extremely difficult debt crisis in the 1990s. Consequently, many economists argue that in the circumstances of the Indian economy it will be much better to attempt only certain measures of internal liberalization that are clearly useful after three decades of rigid controls, and to abandon much of the program of external liberalization.

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