

# INDUSTRIAL POLICY AND ECONOMIC DEVELOPMENT IN JAPAN

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## หมายเหตุจากบรรณาธิการประจำฉบับ

ต้นฉบับบทความนี้เดิมเป็นคำปาฐกถาที่แสดง ณ จุฬาลงกรณ์มหาวิทยาลัย เมื่อวันที่ 22 พฤศจิกายน 2531 จัดโดยคณะเศรษฐศาสตร์ จุฬาลงกรณ์มหาวิทยาลัยร่วมกับสำนักงาน JETRO กรุงเทพฯ หลังจากที่แสดงปาฐกถาแล้ว Mr. Tsukuda ได้นำกลับไปปรับปรุงเพิ่มเติมเพื่อนำลงพิมพ์ในวารสารไทย-ญี่ปุ่นศึกษา ฉบับพิเศษการเมืองญี่ปุ่นเล่มนี้ ผมต้องขอขอบคุณทาง JETRO ที่กรุณาประสานงานเร่งรัดการส่งต้นฉบับ และกรุณาจัดส่งมาให้ทันลงพิมพ์

Mr. Chikao Tsukuda เคยรับราชการที่กระทรวงการต่างประเทศและอุตสาหกรรม หรือที่เรียกย่อ ๆ ว่า MITI เป็นเวลานานกว่า 30 ปี หลังจากเกษียณราชการแล้ว ได้มาทำหน้าที่เป็น Executive Director, Center for International Economic Studies, Japan Industrial Policy Research Institute Tokyo

บทความนี้กล่าวถึงนโยบายอุตสาหกรรมในบริบทของการพัฒนาเศรษฐกิจของญี่ปุ่นไว้อย่างน่าสนใจ มีนักวิชาการบางท่านเสนอว่าประเทศตะวันตกเช่นสหรัฐอเมริกา ไม่มี "นโยบายอุตสาหกรรม" เนื่องจากรัฐไม่ได้ลงไปทำหน้าที่เป็นผู้ชี้แนะการประกอบการทางเศรษฐกิจของภาคเอกชน หน้าที่หลักของรัฐอยู่

ที่การจัดวางระเบียบให้ภาคเอกชนตนเอง ตัดสินใจด้วยตนเองว่า จะลงทุนด้านใด ไม่ลงทุนด้านใด หรือตั้งโรงงานที่ใด เมื่อใด ฯลฯ แต่รัฐญี่ปุ่นได้ลงไปทำหน้าที่ชี้แนะ ส่งเสริมปกป้องอย่างเห็นได้ชัด รัฐจะเป็นผู้วางนโยบายอุตสาหกรรมโดยประสานร่วมมือกับภาคเอกชนอย่างใกล้ชิด งานกำหนดและปฏิบัตินโยบายอุตสาหกรรมนี้เป็นงานของกระทรวง MITI อันเป็นกระทรวงที่เป็นหัวใจสำคัญ ข้อเขียนของผู้ที่เคยรับราชการในกระทรวงดังกล่าวมาเป็นเวลายาวนานนี้ จึงน่าจะสื่อความรู้สึกจิตใจและอารมณ์ออกมาได้มากกว่าของนักวิชาการทั่วไป ควรที่เราจะได้รับฟังข้อคิดเห็นต่าง ๆ

บทความนี้เริ่มต้น กล่าวถึงภูมิหลังทางประวัติศาสตร์ของนโยบายอุตสาหกรรมในประเทศญี่ปุ่น ตั้งแต่สมัยหลังสงครามเป็นต้นมาในแต่ละช่วง ๆ จากนั้นได้พูดถึงนโยบายปรับโครงสร้างเศรษฐกิจซึ่งกระทบถึงนโยบายอุตสาหกรรมอย่างกว้างขวาง ภายหลังการขึ้นค่าเงินเยนในปี พ.ศ. 2528 จนทำให้โรงงานอุตสาหกรรมในประเทศต้องเริ่มขยายขยายทางออกสู่ต่างประเทศและปริมาณการลงทุนในต่างประเทศเพิ่มขึ้นอย่างมากจนทำให้เกิด “สูญญากาศ” ขึ้นภายในประเทศ ในตอนที่สาม

เป็นการอภิปรายถึงบทบาทของกระทรวง MITI ในด้านการจัดส่วนราชการเพื่อทำหน้าที่ดูแลการค้าระหว่างประเทศ อุตสาหกรรม พลังงาน ทรัพยากร ธุรกิจขนาดย่อม ฯลฯ การจัดทำแผนมองภาพอนาคตที่เรียกว่า Vision ในตอนท้ายสุด ได้กล่าวถึงตัวอย่างนโยบายอุตสาหกรรมบางกรณีที่น่าสนใจ ช่วยให้เกิดความชัดเจนเป็นรูปธรรม

ในประเทศไทยเรา สถานการณ์อาจใกล้เคียงไปทางอเมริกามากกว่าญี่ปุ่น เราไม่อาจกล่าวได้ว่าเรามีนโยบายอุตสาหกรรมอย่างแท้จริง เมื่อดูในแง่องค์การบริหาร เรามีสภาพกระจัดกระจายมากเหลือเกิน แบ่งแยกไปอยู่กระทรวงพาณิชย์ กระทรวงอุตสาหกรรม กระทรวงวิทยาศาสตร์ เทคโนโลยีและพลังงาน สำนักงานส่งเสริมการลงทุน และสภาพัฒนาเศรษฐกิจและสังคมแห่งชาติ ฯลฯ การวางนโยบายและปฏิบัตินโยบายจึงเป็นไปด้วยความยากลำบาก อีกประการหนึ่งภาครัฐและภาคเอกชนในเมืองไทยก็ยังคงใช้เวลาอีกนานกว่าที่จะให้อีกฝ่ายยอมรับนับถือซึ่งกันและกัน อย่างไรก็ตาม บทความนี้คงจะกระตุ้นให้เราคิดถึงปัญหา นโยบายอุตสาหกรรมของเรา ในขณะที่จะก้าวเป็นนิคส์ในอีกไม่ช้าไม่นาน นอกเหนือจากช่วยให้เกิดความเข้าใจในส่วนของญี่ปุ่น หวังว่าบทความที่นำมาลงนี้จะประโยชน์ต่อผู้อ่านตามสมควร

บรรณาธิการประจำฉบับ

## 1. Introduction

During my career at MITI, JETRO, and Japanese Mission to OECD, I had numerous occasions to discuss Japan's industrial policy and encountered many supporters even admirers as well as many critics of MITI and of its policy. I have found an important point of agreement between them: they share a view that the industrial policy of Japan has been highly effective in promoting industrial development and economic growth in earlier years and, more recently, industrial restructuring. Many of them believe that MITI's policy has been the single most important factor in Japan's industrial achievements.

As a MITI official, I naturally felt flattered at the great importance attached to the ministry but, at the same time, I could not help feeling somewhat uneasy at what seemed to me an exaggerated image of the role of MITI.

In his remarkable review of Japan's industrial policy; Professor Kozo Yamamura of University of Washington likened the debate on the effectiveness of industrial policy to the theological debate. "*As in the debate on the existence of God*", he says, "*neither avowed supporters of industrial policy nor the market-trusting critics of it have infallible means to prove their case*". I agree with Prof. Yamamura. Whichever side one may take as to the effectiveness of industrial policy, one can not go much beyond expressing one's own belief or conviction. The basic difficulty in assessing the role of industrial policy lies in the fact that it is impossible to establish empirically what would have happened in the absence of industrial policy.

Professor Yamamura's view, which he says is based on a conviction he has come to have

after twenty-odd years of studying Japanese industrial policy, is that "*it has been more effective than many economists would admit but substantially less so than maintained by the Americans urging adoption of industrial policy à la japonaise*". My own view happens to be close to his. Incidentally, his formula seems to have a wide application to a number of hotly debated issues. For example, I think that Japanese market is not so open as many Japanese claim but that it is not so closed as many foreigners say. Perhaps the truth often lies between the two extremes.

Coming back to industrial policy, I believe that it has been an important factor in Japan's post-war economic growth and industrial achievements but that its true role has often been exaggerated and projected larger than its real size. There are a number of reasons why it has been so. One of them, and I think an important one, is a tendency to infer too easily a causal relationship from the parallel existence of active industrial policy on the one hand and rapid economic and industrial growth on the other. As the elementary theory of statistics tells us, correlation does not guarantee causality. And the inference I have just mentioned fails to recognize fully the importance of other factors which have made a significant contribution to economic and industrial performance of Japan during the last four decades.

In a Brookings Institution's study of 1976 entitled "*Asia's New Giant*", which I think now stands as a classic, Philippe Trezise and Yukio Suzuki argued, convincingly, that the political stability in the post-war Japan, although subjected to occasional strains, had provided a favorable environment for active

business investment. It is evident that active investment has been instrumental in promoting rapid economic growth through continuous reallocation of factors of production and industrial application of new technologies.

The political stability which has been sustained almost without interruption is very much due to a prevailing view, if not a true consensus, that economic growth is a good thing, something desirable and worth striving for. This shared motivation for growth has helped to dissipate ideological debate and secure the acceptance, support and ultimate success of progrowth policies among which industrial policy has figured prominently.

I would like to mention two other factors which, I believe, counted heavily in the Japanese growth process. One is that, in the post-war industrial world, Japan had started, and stayed for many years, as a follower and joined more advanced industrial nations as a late-comer. From that position, she could draw much advantage. The United States and European countries provided a model for Japan to emulate. With the model in sight, it was not very difficult to guess which were the promising areas for industrial efforts. In a more concrete sense, Japan could borrow from the West industrial and managerial technologies and know-how on which to build modern industries. It is sometimes forgotten that quality control techniques which are highly developed in Japan have their origin in what Japanese industries learned in the 1950s and 60s, particularly from the United States, and adapted to the local climate. I think that Japanese growth until the early 1970s can best be characterized as a "catch-up" process.

Another important factor is the international environment which, at least until the end of the 1960s, remained highly favorable for Japan's economic growth. World economic growth at a reasonably high rate, the liberal trade regime promoted by the GATT under the strong US leadership and stable exchange rate were particularly important in enabling Japanese industries to find expanding markets for their increasingly sophisticated products.

I am convinced that had there not been present the factors I have mentioned, today's Japan would look very much different from what we see now. Those factors—political stability, growth motivation, advantage of being a follower and international circumstances—together constituted an environment in which the industrial policy could play its role effectively.

## 2. A brief historical review of Japanese industrial policy

It is important to note that the character of Japanese industrial policy has changed greatly over time. In its essence, industrial policy involves government intervention in the market mechanism with the aim of improving industrial performance. But the form, and the degree of intensity, of intervention can and in fact did vary.

In the early post-war years, the principal policy objective was to reconstruct industrial activities. At the end of the war, industrial production was less than 20 per cent of the pre-war peak level. Everything was in short supply and inflation was rampant. Mass-scale starvation was barely averted thanks to the U.S. food aid. Under the

circumstances, the Government decided to place the top priority on the two key sectors : coal and iron and steel. Accordingly, material and financial resources available only in a very limited quantity were heavily concentrated into those sectors. As a result of this policy, coal production, which had dropped from the war-time peak of 50 million tons to 6 million tons in 1945, rapidly expanded to reach nearly 30 million tons in 1947. Steel production also recorded a parallel increase. Increased production of coal and steel provided the necessary base for recovery of output of other sectors : machinery and equipment first and subsequently consumer goods. The process of industrial recovery from the disastrous damage of war was thus successfully put into place. Severe shortage of supply persisted, however, and the Government applied a strict control to distribution of certain production materials and essential consumer goods. Commodity prices, wages and corporate profits were also controlled by the Government. The same was true with foreign exchange receipts and expenditures.

From about 1949, extensive government controls began to be relaxed and the market mechanism was allowed to enlarge its scope. In the same year, and in order to arrest inflation, an important package of drastic stabilization measures were implemented. The package included a draconian cut in government expenditures, discontinuation of preferential loans out of proceeds from the U.S. aid, abolishment of various subsidies to compensate price differentials and the establishment of a single exchange rate at 360 yen per U.S. dollar, the rate which would remain unchanged until the Nixon shock of 1971. It was also in 1949 that the present Ministry of International Trade and

Industry, MITI, was created on the basis of the old Ministry of Commerce and Industry. In my view, the most important feature of the reorganization was that the new Ministry was given the primary responsibility for international trade policy as well as for industrial policy. I think it reflected the recognition of a close link between the two policy areas.

In the 1950s, the main concern of industrial policy was to promote modernization of certain key industries including iron and steel, electricity, machinery, fertilizer and chemicals. In consultation with the industries concerned, MITI drew up sectoral plans of modernization indicating production targets, major elements in modernization efforts and required amount of equipment investment. In conformity with the plans, MITI mobilized all the available policy instruments such as financial aid, preferential taxes, tariff and non-tariff import protection, foreign exchange allocation and authorization of importation of foreign technologies.

It is important to note that, in those years, foreign technologies and foreign capital played a particularly important role in complementing indigenous technologies and domestic savings. MITI also worked hard to propagate modern management methods designed to produce better quality goods at cheaper costs in a shorter period. The Ministry established industrial standards called JIS which contributed greatly to promoting standardization and interchangeability of parts. Japan Productivity Center which was created in 1955 under the auspices of MITI played a central role in a nationwide campaign for productivity improvement. The campaign was based on three

principles : first, improved productivity is conducive to higher employment; second, concrete actions for productivity increase should be examined and adopted through cooperation between management and labor; and, third, the fruit of improved productivity should be distributed in an equitable manner among managers, share-holders, workers and consumers. Capital equipment and materials are a necessary hardware for industrial production. But, in order to harness the hardware to a good use, it is indispensable to have software consisting of, among other things, production and management techniques, well-organized efforts at enhancing productivity and institutional framework for standardization and protection of intellectual property rights. I think it is fair to say that MITI played a major role in securing adequate supply of both hardware and software for rapid industrial development.

Industrial policy in the 1950s was highly interventionist in nature. It was a period which I like to characterize as "mercantilist". Peter Drucker spoke highly of the policies which were actively pursued in that period. To quote from the article he wrote for the summer 1987 issue of *"Foreign Affairs"*, those policies "*brilliantly matched the realities of Japan's economy and its needs. Indeed, no other policies could possibly have worked*". It is gratifying to hear such a praise from an eminent American scholar. But, I feel compelled to repeat what I have already said : namely that the industrial policy, particularly in the period under consideration, represented an aspect of the national efforts at catching-up with industrial forerunners. It is therefore incorrect to think of MITI as something like the Prussian General Staff which, under Generals Moltke, Gneisenau and Schlieffen, drew up and executed ingenious war-plans.

In 1963, an advisory council of MITI (Industrial Structure Research Council) submitted a report to the Minister. This report has often been cited as an evidence of MITI's well-conceived and comprehensive industrial strategy. That is because the report recommended a set of policies aimed at promoting certain industrial sectors selected on the basis of two criteria : high income elasticity of demand and, on the supply side, potential for rapid productivity growth. In my view, however, the report was essentially an ex-post justification of what MITI had been doing in the preceding years in a rather piecemeal manner, out of the desire to attain as quickly as possible the level of industrial and technological development which had been achieved in the United States and Europe.

In fact, when the report was submitted, the "mercantilist" period was approaching its end and sector-specific promotional policies were being phased out. Since the beginning of the 1960s, the government proceeded to successive liberalization of imports and of international capital transactions. Domestically also, direct control and intervention increasingly gave way to indirect and softer measures. New policy tools which were developed at that time and have been widely used since then include visionmaking and administrative guidance to which I will return later.

The Nixon shock in August 1971 finally resulted in the generalized float of exchange rates in February 1973. In October the same year, the world was shaken by the first oil shock. The early 1970s thus marked the beginning of a period of profound structural changes which are still in progress today. Spectacular innovation especially in computer and communication technologies and rapid

internationalization of business activities provided a further impetus for structural transformation of production and trade everywhere in the world. I believe that the ultimate rationale of industrial policy in a market economy resides in the ability of the government, which by no means is self-evident but can be real as I think has been the case in Japan, to guide, encourage and help private initiatives to meet the challenge arising from changing circumstances. The emphasis in industrial policy naturally should change according to the nature of the challenge. It stands to reason, therefore, that MITI's policy since the beginning of the 1970s has been directed toward industrial restructuring, promotion of high-technologies, improvement of amenity of life, internationalization of corporate activities, stimulating domestic demand and so forth. I must emphasize, however, that the role of the government has been rather auxiliary in the process of structural adjustment. I wish to illustrate the point by looking at what has been happening in the Japanese economy since the Plaza accord of September 1985.

### 3. Restructuring of the Japanese economy since 1985

In the last three years, Japanese economy has undergone tremendous changes. To begin with, there was a sharp reversal in the pattern of economic growth. Until 1985, net export of goods and services had been an important source of economic growth. In 1986 and 1987, however, external demand was no longer a positive factor in growth. In fact, its contribution to growth turned negative, and real GNP growth was entirely

accounted for by expansion of domestic demand. According to the estimates by Economic Planning Agency, real GNP growth in FY 1987 was 5 per cent of which 6 per cent originated in domestic demand with net exports making a negative contribution of minus 1 per cent. It may be interesting to note, *en passant*, that economic growth through domestic demand is not a novelty in Japan. During the 1950s and 60s, the rate of annual GNP growth averaged about 10 per cent in real terms, and that rapid growth was led not by external demand but by domestic demand, particularly personal consumption and fixed investment in the private sector. The growth pattern which emerged in 1986 represented therefore a return to the pattern prevailing in the earlier high growth period although, of course, the overall rate of growth was much lower this time.

Structural reorganization is of course an ongoing process. It is a normal and natural feature of a growing economy. Since World War II, Japan had experienced [three major periods of restructuring : reconstruction after the war, rapid overall growth of the 1960s when a number of key industries were firmly established, and adjustment to the oil price shocks in 1973 and 1979. A fourth, and the present, wave of restructuring started as direct response to the sharp appreciation of the yen. The speed and scope of structural changes in the last three years have vastly exceeded the general expectation which was prevailing in April 1986 when a government commission chaired by Mr. Maekawa, former governor of Bank of Japan submitted its report to the then prime minister Mr. Nakasonse. The commission stressed the need to restructure Japanese economy so as to make it more harmonious with the international economy and proposed a series of policy measures

aimed at reducing Japan's external surplus particularly by stimulating domestic demand. Japanese economy has been moving since then along the lines called for by the commission, but I suspect that even Mr. Maekawa did not foresee the dramatic transformation of the Japanese economy which would be taking place in such a short span of time.

The yen value in terms of the US dollar has almost doubled since the Plaza accord of September 1985. There is no doubt that the yen appreciation of such a magnitude has been the single most important factor to cause structural changes of a vast scale. It has precipitated a major shift in priorities and strategies of Japanese business, oriented toward exploiting domestic market, increased imports of foreign manufactured goods, expanding overseas direct investment, diversification into new lines of activities, added efforts in research and development, and so on.

I believe that the structural reorientation in the Japanese economy has largely resulted from business strategies which have been modified drastically in response to the higher yen. Domestic demand growing faster than GNP has had its natural consequences in decelerated export growth and, more spectacularly, strong rise in imports.

In dollar terms, total imports increased 18 per cent in 1987, after having declined in the preceding two years. Among the major product categories, it was manufactured goods which recorded the strongest rise : 31 per cent in 1986 and 25 per cent in 1987. The upward trend of imports, particularly of manufactured products, has become even more pronounced in 1988.

I will not go into the detail but I wish to mention a few salient features which

characterize recent trends of Japanese manufactured imports.

(1) By type of products, consumption goods, both durable and nondurable, showed faster growth of imports than capital goods. Rapid penetration of all sorts of foreign-made consumer goods into the Japanese market is highly visible in shops and on streets not only in large cities and their suburbs but also in remote provincial areas. Improved price competitiveness of foreign goods and higher income of Japanese consumers have been obvious factors in the surge of imported goods. But I think that business attitudes toward imports have also played an important role. For example, large retailers like department-stores and chain-stores are becoming increasingly eager to buy directly abroad without going through trading houses. Particularly important is increasing recourse to the so-called "development imports" : imports of foreign-made goods which are designed and developed according to the specifications given by Japanese distributors. It is also reported that there are more and more manufacturing firms which import finished goods to put them on the Japanese market with their own brands.

(2) Within the category of capital goods, parts and components have been a more dynamic element in expansion of imports. Japanese manufacturers have now become much more willing, and often find it even imperative in order to remain competitive, to incorporate more imported parts and components in the production process. To do that, they are making every effort to find dependable foreign suppliers with whom they can build a stable business relationship often involving technology transfer.

(3) In 1987, Asia including China became the largest supplier of manufactured products for Japan. Manufactured imports from Republic of Korea, Taiwan and Hong Kong taken together amounted to \$11.6 billion, up 61 per cent. Those from ASEAN nations registered a 48 per cent increase and reached \$3.1 billion. Manufactured imports from China was worth \$2.9 billion, up 49 per cent. As a result, East and South East Asia including China increased their share in total Japanese imports of manufactured goods from 22.5 per cent in 1986 to 28.2 per cent in 1987. The United States and the European Community took 26.8 per cent and 23.0 per cent, respectively. Trade statistics clearly reveal that there has been significant diversification of Asian exports into more sophisticated and technology intensive products including cameras, radio receivers incorporating sound recording system, VCRS, switchgear and control equipment, electric motors and transformers, integrated circuits, component parts of computers, etc. I think that changing nature of trade between Japan and the neighboring Asian countries represents an important aspect of a new type of international division of labor which is rapidly taking shape in Asia and supporting the dynamism of the region. I believe also that Japanese foreign direct investment has been playing an active and positive role in that process.

The pace of Japanese foreign direct investment has quickened significantly since the yen started, in 1985, to appreciate sharply against the U.S. dollar. According to the latest statistics released by Ministry of Finance, direct investment in fiscal 1987 amounted to 33.4 billion dollars, representing an increase of nearly 50 per cent over the previous year.

Investment in manufacturing, in particular, more than doubled and came close to \$8 billion. At the end of March 1988, the cumulative total of foreign direct investment reached \$ 140 billion of which manufacturing sector accounted for 26 per cent, finance and insurance 21 per cent, and trading and services 12 per cent.

The recent surge of manufacturing investment has been particularly strong in the United States and Asia. Formerly, Japanese manufacturing investment in Asia was largely concentrated on a limited range of sectors with low technology intensity and the products were principally directed to local markets of host countries. More recently and particularly with the yen appreciation, Japanese investment has come to cover wider areas such as electric and electronic industries and production from Japanese investment is increasingly oriented toward exports out of host countries, including exports to Japan.

#### 4. How MITI is organized and how it works

I now move to the next topic which is MITI's organizational characteristics and working methods. Apart from Minister's Secretariat, there are seven internal Bureaus and three agencies which are attached to the Ministry. Four of them have responsibility for a particular segment of industrial activity : basic industries, machinery and information industries, consumption goods industries and, finally, natural resources and energy. The responsibilities of other bureaus and agencies are horizontal in nature in the sense that they cut across sectoral boundaries : international trade, industrial structure, fore-

ign investment, industrial location and environmental protection, small and medium enterprises, industrial technology, etc. This matrix-like structure of the Ministry seems particularly fit for complex policy issues which require examination from different angles, vertical in the sense of sector-specific as well as horizontal. This organizational structure implies that, generally speaking, MITI's decision-making is not very quick but takes time because it involves consultation and co-ordination at various levels in order to achieve as wide an agreement as possible. When differing views persist, "arbitration" becomes necessary. Normally, it is Director of General Coordination Division in the Minister's Secretariat who is charged with the task. But, depending on the complexity and difficulty of the issue, arbitration may take place at higher levels involving Director-General of Minister's Secretariat, Vice-Minister and, ultimately, Minister himself. High-level arbitration, however, is not a normal process: it is considered as the last resort. MITI's organizational characteristics and working methods have both merits and demerits. It seems to me that there is an increasing need for prompt decision and action and that, accordingly, the decision-making process should be re-examined in order to accommodate that need.

As I mentioned earlier, vision-making and administrative guidance are among the most important policy tools which MITI use to influence the private sector.

Visions have been formulated at various levels of aggregation: for the whole industrial sector in some cases, and for specific industrial branches in other cases. Sometimes, a vision is called "plan" or "program".

However it may be called, a vision is, in its essence, a description of the future evolution of the industry concerned which is judged to be desirable in light of, particularly, economic and technological environments both at home and abroad. It is true that, generally speaking, a vision calls for government support in various forms, especially financial and fiscal incentives. These incentives may or may not be implemented but, at any rate, they are generally of a modest size and their value is rather symbolic in nature.

A more important role of vision is to generate as wide a consensus as possible on important policy issues. It must be noted that the formulation and presentation of a vision does never constitute a unilateral action on the part of the government. Before a vision begins to take a concrete shape, there is a preliminary stage in which views are exchanged first between different departments of MITI, and then between the Ministry and the interested parties. On the basis of such discussions, MITI prepares discussion papers and submits them for deliberation at a committee in which all sorts of interests are represented. A vision is the final result of such deliberations.

Administrative guidance is a suggestion, an advice or a request which MITI gives to private firms with a view to encouraging or discouraging a particular action by them. Administrative guidance is not legally binding and firms are free to act as they choose. More often than not, however, MITI's guidance has been followed. One reason may be that the firms concerned somehow do not want to invite MITI's displeasure. Another, and perhaps more important, reason is that they find it in their own interest to

follow MITI's advice. Consider, for example, the case where firms engage in competitive expansion of productive capacity knowing that it will lead to excess capacity from which they all suffer. They would wish to refrain from such a destructive competition but they cannot because of fear of losing market shares. From individual firm's point of view, administrative guidance can dispel that fear and ensure that competitors act in a similar manner.

## 5. Industrial policy at work : some examples

As I said earlier, the degree of intensity of government intervention has varied over time. It also varies between different areas. I wish to discuss briefly two areas where, relatively speaking, the government has been playing a more active role. They are promotion of research and development and adjustment of declining industries.

To promote R&D, the government engages in various activities, including R&D conducted at its own research laboratories. But the more important one, from the industrial point of view, is the governmental support to joint R&D by private firms. Joint R&D can take many forms, among which "*research association*" is perhaps the most representative. Research association was formalized legally in 1961 after the British model and 88 such associations have been established since then. In many cases, MITI took a strong initiative in the formation of research associations by identifying specific research needs and by persuading private firms to join their forces. The governmental support of research association includes tax privileges and substantial financial aid.

Joint R&D efforts through research associations have been particularly active in computer and electronic industries. Between 1961 and 1986, seven associations were established for hardware technology, including computer systems, semi-conductors and optical diodes, and another seven for software technologies. As the timing of the formation of associations clearly suggests, they represented the attempt of the Japanese computer industry to catch up with a great forerunner : IBM. It is generally recognized that the attempt has been successful so far.

Another area where the Government, particularly MITI, has been actively involved, is adjustment of industries facing decline due to economic, technological or other reasons.

Coal, for example, could not stand competition from cheap oil. The emphasis of policy was first placed on slowing down the process of decline. For that purpose, MITI arranged subsidies and low-interest loans for the industry and even forced electric power companies, steel-makers and others to continue using coal instead of oil. Later, the emphasis was shifted to mitigating pains of adjustment by, for example, providing assistance for retraining workers and for introducing other industries into the regions heavily dependent on coal production.

Cotton textile industry underwent a long process of decline under the pressure of competition coming from two sides : developing countries and other kinds of textiles. MITI worked for many years to help the industry scale down the capacity. It authorized cartels to scrap spinning and weaving machines, and provided financial and other incentives for that purpose. But MITI's

efforts have not been successful primarily because of a large number of firms involved whose interests could not easily be reconciled.

Aluminium industry represents a case of a dramatic decline, or rather a withdrawal. Ingot production, which had peaked in 1977 with 1.7 million tons, dropped to just 35,000 tons in 1987. Although MITI assisted the adjustment process, the speed of adjustment has greatly exceeded the Ministry's expectation.

It is difficult to draw from those and other examples a general conclusion about the effectiveness of adjustment policies. They have had mixed results. Perhaps we can say that determination and willingness

on the part of the firms concerned are the essential elements in successful adjustment.

Today, a number of Japanese industries are faced with a new need of adjustment as a result of drastic economic changes such as yen appreciation and increased international competition. Corporate strategies have been, and are being, geared to that need. Major elements of such strategies include greater efforts at exploiting domestic markets, upgrading product lines to higher value-added and technologically more sophisticated goods, diversification into new areas of activity, greater R&D efforts, expansion of overseas direct investment and alliances with foreign firms, and so on.

*I wish to conclude by expressing my belief that there are now a host of factors which make it imperative for MITI to redefine its role and shape its policies in accordance with the re-defined role. The end of "catch-up" process, the advent of diverse interests in lieu of consensus for growth, internationalization and even globalization of business activities are among the most important of such factors.*