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Misunderstandings on Japan's Economic Development: Japan's Experience and its Lessons for Transition

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1. Transition to Market Economies and Structural Adjustments

The systemic changes occurring in Central and Eastern European countries and other former socialist countries can be considered the most radical kind of structural adjustments. There is a consensus among most economists and policy-makers that, just as was seen in the debt crisis at the beginning of the 1980s, the balance of payments difficulties facing developing nations cannot be solved solely through a short-term macroeconomic approach involving traditional demand restraints. Structural adjustments can be regarded as a means to adjust the mid-and long-term balance of payments difficulties mainly by the supply-side economic policies.

In many developing nations, the imbalance in balance of payments was the result of government-directed economic development policies. These policies caused inefficient economic operations brought about by market distortions, and also generated huge financial deficits. In considering this situation, the issues related to structural adjustments which many developing nations must currently address are similar to a large extent: by making their markets more efficient, they will expand exports of industrial products, and the policy framework that will bring about such results consists of a greater emphasis on the market mechanism and private enterprise-directed economic operations. These are issues confronting nations undergoing structural transformations as well. Therefore, issues for structural adjustments in transitional economies are common to those in developing nations.

The purpose of structural adjustments is to place a nation o

n the path towards sustainable development. To accomplish this g oal, it is indispensable that the macroeconomic balance be restor ed and maintained, and that investment efficiency be improved. However, as stated above, recovery of the macroeconomic balan ce is difficult to accomplish solely through traditional demand-side management policies, in other words, short-term stabilization polici es. Rather, efforts must be made to bring about macroeconomic stability through increasing domestic savings rates and by expandi ng exports as a result of structural changes based on mid- and lo ng-term perspectives, including systemic and structural reforms that emphasize the supply-side. This is not to say, of course, that short-term stability is not important; rather, such short-term stability may be an essential condition, but is definitely not a sufficient conditio n. Also, finding the proper sequence for stabilization policies and s tructural adjustment policies is an extremely important topic for po licy planners and policy-oriented economists.

As is well-known, the economic approach to which the IMF and the World Bank are pledged is that of neoclassical economic s, which states that as long as there are no faults in a market, th e most effective way of guaranteeing the effective allocation of r esources is to leave such allocation to free competition. By static economic standards, this may be a sound approach. However, th e author believes that the best way to confront economic proble ms is through the long-term development of the economies of de veloping nations through structural adjustments and the creation o f market economy.

Yanagihara (1998) called the Anglo-American economic ap proach adopted by the IMF and the World Bank a "framework ap proach." He contrasted this with the Japanese way of thinking, wh ich he called an "ingredients approach." The framework approach is based on the idea that economies do not function efficiently when distortions brought about by governmental interventions mai

nly in the form of protections or regulations hinder the optimization of resource allocation. This framework approach calls for the liberalization of an economy, as soon as possible, in order to eliminate such protections and regulations, etc. Consequently, this approach pays no attention to the question of which industries will grow and which will not; rather, the answers to such questions will depend upon competition within the marketplace, it is not up to governments or anyone else to discuss this issue beforehand.

In contrast, the Japanese ingredients approach is results-oriented: under this approach, an optimal future economic perspectives are first hypothesized, and then, through policy-based promotional measures such as directed credits, resources are committed to specific sectors in a concessional fashion. Japanese industrial policies are classic examples of this approach. Certainly it is premature to conclude that Japan's rapid industrialization and rapid economic growth were solely brought about by the result of the industrial policy. Basically, they were the result of cooperative interplay between the government and the private sector; the fact that the government performed policy in ways interventions which did not impede the dynamism of private enterprises was one of the reasons for Japan's economic success.

Thus it should not be forgotten that government interventions which within the neoclassical world is something that should be abolished as soon as possible can, in certain cases, be justified according to dynamic efficiency.

The author's view is that policy recommendations, such as the conditionality set by the World Bank and the IMF until the mid-1990s, that call on a nation to liberalize itself as soon as possible are unrealistic. The World Bank also seems to have become aware of this viewpoint, and many people have come to realize that if solutions are to be found for actual problems such as the transformation from planned to market economies in Central and Easter

n Europe, then even though eventual liberalization is desirable, for many developing nations it is necessary to determine the sequence of the liberalization.

For example, the main topic of World Bank(1991) was a call for the cooperative interplay between governments and markets. This is presented at the beginning of the report. In other words, the Bank does not believe that government intervention conflicts with free competition. The idea is that governments have their role to play, and markets theirs; and that when the functions of the government and the marketplace complement each other, and when both entities cooperate together, then economies will develop successfully.

This way of thinking is called the "market-friendly approach." Conceptually, details of this approach are still unclear; however, of the copious World Bank documents that have been widely disseminated, this was the first that had any praise for the role of government.

In postwar Japan, there have been many government interventions in the form of protective policies, subsidies, and the rationing of foreign-currencies. I believe that these policies are probably justifiable from the perspective of dynamic efficiency criteria. However, since this statement is not based on a rigorous analysis, it is merely a provisional explanation. What I want to emphasize here is that when considering the economies of developing nations including transitional economies, it is not sufficient to consider only the static efficiency criteria written in microeconomics textbooks; dynamic efficiency criteria are also of great importance.

I believe that self-reliant efforts are the basis of economic development. By this we do not mean that it is not desirable for a nation to rely on external financing and other forms of assistance to promote its own economic development. To say it in another way, self-reliant efforts can be defined as the desire by people to

want to realize, and to actually realize, their own nation's economic development, or as the government's will to accomplish the same goals on the basis of these desires of its people. The role of assistance is to provide lateral support for the accomplishment of such goals.

The naive approach, like that adopted by the IMF and the World Bank, believing that all will be well as long as distortions in the market are eliminated through liberalization, is not only unrealistic, but such an approach also hinders developing nations from initiating their own self-reliant efforts. That is why structural adjustments and policy reforms based on agreements between donor nations and developing nations which are in turn based upon dynamic efficiency criteria are most desirable.

According to the phase of a nation's development, policies that protect domestic industries may, in certain cases, be rational in an economic context. However, of decisive importance is whether or not efficient economic operations can occur in domestic markets protected in this manner. Therefore, a government must take into account the extent of competitiveness within each industry, as well as the speed at which improvements occur in terms of international competitiveness, and then determine specific dates (years) it plans to meet these targets, and finally to announce the schedule for liberalization. Once a schedule is announced, the government must not change it in any way. Moreover, liberalization should be a gradual process. If such an environment can be established, and if confidence to the government can be secured, then private companies will make the utmost efforts to improve productivity and to augment their international competitiveness in order to survive.

The Japanese experience with these types of efficiency-oriented market management i.e., severe competition within protected or even oligopolistic domestic markets, and emphasis on competi

tion with foreign firms within the global market is extremely meaningful for current developing nations, including Central and East European countries.

2. Misunderstandings on Japan's Economic Development

There are several misunderstandings on Japan's economic development. Japan started the modern economic growth in the 1880s(Ohkawa and Rosovsky 1973, p.11). Japan is the latest-comer among industrialized countries. As is well known Japan performed rapid economic growth, especially in the late 1950s and 1960s. A misunderstanding is the initial income level; Japan performed rapid economic growth because the initial income level was very high when Japan started the modern economic growth. This is not true. Japan's estimated per capita GNP for 1876-87 is 154 in 1965 US dollars. This level is comparable with the estimated per capita GNP in 1953-57 for some Asian countries: Philippines 136, Thailand 95, South Korea 158, Taiwan 175 in 1965 US dollars(Ohkawa and Kohama 1989, p.4).

The second misunderstanding is the macroeconomic stability. Since the beginning of the 1950s Japanese economy has been stable. In the mid-1990s Japan experienced the slight deflation. Based on the long stable economy, many misunderstand Japan never experienced inflation. Just after the World War II Japan experienced 3-digit inflation until the beginning of the 1949.

Next example is the industrial and trade structure and balance of payments situation. Japan's economic presence is now very big. Non-Japanese, and even young Japanese misunderstand Japan's leading sectors have been hi-tech industries and Japan has been faced with huge current account surplus. As will be discussed in the next section, more than one third of Japan's exports was textiles in the mid-1950s.

Figure 1 shows the balance of payments trend in the early

postwar Japan. Japan's trade and current account balances were negative until the mid-1960s. Since 1968 Japan's trade and current balance have been positive except oil shock years. Balance of payments management was one of the most important economic policy issues of Japan at that time.

Japan's economy was not fully developed in the 1950s. I think during high growth period, Japan was, in a sense, the first runner of Asian newly industrializing economies (NIEs). Although it is controversial, I understand the Japanese economy passed the turning point of labor market around 1960(Minami 1986, Chapter 9).

It is well known that Japan is one of the top donors of ODA (official development assistance). Japan extended US$15.3 billion ODA in 1999. This is the largest among DAC (Development Assistance Committee, OECD) member countries. The United States, second largest donor in DAC, provided US$9.1 billion ODA in 1999. But in the 1950s and 1960s Japan utilized external financing for infrastructure investment and modernization investment in manufacturing sector. Table 1 lists the World Bank loans to Japan. Japan was a recipient country of the World Bank loans until the mid-1960s. Japanese government started the operation of the first line of *Shinkansen* (bullet train) between Tokyo and Osaka in October 1964, just before the international Olympic games in Tokyo. This *Shinkansen* project was partly financed by the World Bank.

Next misunderstanding is export-led growth. Chenery, Robinson and Syrquin(1986, p.3) argue that Japan is the original model of export-led growth. As far as demand-side concerned, this is not correct. In the rapid growth period, the late 1950s and 1960s, Japan's exports/GDP ratio was stable, 11 to 12 % in current prices. The story is quite different in South Korea. South Korea started the industrialization in the beginning of the 1960s. The exports/GDP ratio was as low as 8.6 % in 1965 in current prices. The ratio increased to over 35% in 1985 (Ohkawa and Kohama 1989, p. 297).

The last misunderstanding which is discussed here is the industrial policy. This is the major purpose of this paper. Many non-Japanese experts argue that Japan's rapid industrialization in the postwar period was led by the government, especially by MITI's industrial policy(see, for example Johnson 1982).

Take the case of steel industry which was one of the leading industries in Japan's high growth era. Many non-Japanese economists misunderstand that large scale investment could be done without risk in a steel industry due to the government heavy protection and promotion. What caused the rapid enhancement of international competitiveness of a steel industry is not the industrial policy but the entrepreneurship to make huge modernization investment and to import the advanced technology with innovation such as basic oxygen furnace (BOF) and continuous casting.

In what economic environments will the innovative entrepreneurship make full function? This is a basic question to us. Competitive economic environments and social capability are crucial to enhance the international competitiveness of the industry and utilizing advanced technology (Ohkawa and Kohama 1989, Chapters 6 and 8). It seems to me that competitive economic environments realize not only in the liberalized economy but also in the protected and oligopolistic economy. This is a hypothesis of this paper. It is difficult to make full test of this hypothesis, but some supporting historical facts in postwar Japan will be presented in the following sections in order to understand the economic development in Japan, ant to derive lessons for the structural adjustment policy in the contemporary developing and transitional economies.

Before going to the interaction between private sector and the government, review of postwar economic development will be made in the next section.

3. Japan's Postwar Economic Development: Industrial and Trade S

tructure Change

Japan started the "heavy industrialization" in the 1950s. Generally speaking, "heavy industry" includes metal industry, chemical industry and machine industry. We understand that "heavy industry" has two subsectors. Required level of technology for "traditional heavy industry" such as steel industry and shipbuilding industry is different from that for "new heavy industry" such as computer industry and "mechatronics (mechanics plus electronics)" industry. The latter can be called "technology intensive industry". Rapid change in industrial and trade structure in postwar Japan will be reviewed in order to understand that light industries such as textiles and food processing were the leading industries when Japan started rapid economic growth. Rapid shift of key industries will be discussed below: clear decline of "light industry" and the rise of "traditional heavy industry", then followed by "technology intensive industry". Such kind of shifting pattern is transferred to Asian NIEs with certain time lags, and then to ASEAN countries.

Postwar change in the share of shipment value of 21 subsectors in manufacturing total is shown in Table 2. In 1955, early phase of rapid economic growth, the shares of textile industry and iron and steel industry were 16.2% and 9.6% respectively. Textile industry share decreased sharply and the share was as low as 1.5% in 1998. Iron and steel industry share was larger than 9% of manufacturing total up to 1970, but started to decline in the 1970s. Its share decreased to 4.2% in 1998.

When we compare the contribution ratio of manufacturing subsectors to total manufacturing growth in each period, we clearly understand the rapid industrial structure change in postwar Japan. In the latter half of the 1950s, contribution of iron and steel, general machinery, electric machinery, and transport equipment exceeded 10% of total manufacturing growth. These four subsectors explained 44.3% of manufacturing shipment growth for the period. I

n the 1960s contribution ratio of iron and steel industry slightly decl ined to 7.5% for 1960-65, and 9.8% for 1965-70. Key industries for J apan's industrial development in the 1960s and 1970s are machine industries. Contribution ratio of three subsectors of machine indust ry(non-electric machinery, electric machinery, and transport equip ment) for the 1960s and 1970s was between 6-13%. Although iron and steel industry maintained the contribution ratio of more than 7% in the 1970s, it experienced absolute decline in shipment for 1 980-84. Five more subsectors (wood products, furniture, petroleum and coal products, leather products, non-ferrous metals) also expe rienced absolute decrease of shipment value for 1980-84. In contr ast to these subsectors, contribution of electric machinery industry was remarkable in the 1980s. The contribution of the electric mac hinery industry was as high as 44.3% for the period of 1980-84.

Table 3 shows changes in export structure of postwar Japan. Textiles were the largest export items in the early phase of Japan 's postwar economic growth. Textile export share was 40% in 1954 and 30.1% in 1960. But its share declined to 12.5% in 1970, 4.8% in 1980, and 1.8% in 2000. In the latter half of the 1950s, about on e-fourth of Japan's export expansion was explained by the textile export expansion. Contribution ratio of textiles export to total expo rt expansion was 23.1% for 1955-60, but it decreased to about 8% in the 1960s, 2.5% in the 1970s, and less than 1% for 1980-85.

Steel was the leading export industry up to the mid-1970s. St eel export share was less than 10% in 1960, but it increased to mo re than 15% in 1965 and 18% in 1975. However it turned to declin e since the mid-1970s. Export share of steel decreased to 11.9% i n 1980 and 4 % in 2000. Change in export contribution ratio of ste el industry clearly tells us the rise and fall of steel industry in postw ar Japan. It was just 6.4% for 1955-60, but it rose to more than 2 0% for 1960-65 and 1970-75.

Japan's crude steel production exceeded 10 million MT in 19

56. It increased to 22 million in 1960, 41 million in 1965, 93 million in 1970, and exceeded 100 million MT in 1973. Japanese steel industry started export expansion process in the 1930s. But the Japan's steel export share in the world was not so high in the beginning of rapid economic growth period. In 1960 Japan exported 2,242 thousand MT steel and occupied 5.7% of world total steel export. In the same year, West Germany was the world largest steel exporter and the share was 20%. In the 1960s steel export from Japan increased sharply due to the innovative technology import as mentioned above. In 1970 Japan exported 17.6 million MT steel and the share increased to 20% of the world total. In 1985 Japan exported 31.5 million MT steel, and the share was 19.7%. In the same year Korea exported 5.9 million MT steel and the share was 3.7%. Japan is still the world largest steel exporter, but it seems to us that steel industry is not the leading industry in fuller industrialized countries, but that in newly industrializing countries. Catching-up speed of steel exporting newly industrializing countries such as Korea and Brazil is very high.

Korea started the integrated steel mill in 1973 in Pohang. Pohang Steel Company(POSCO) completed the first stage of the second plant in Kwangyoung in May 1987. Consequently POSCO's crude steel production capacity became about 11.8 million MT. POSCO has become one of the most efficient steel companies in the World (World Bank 1987, p.31). It takes more than 50 years to exceed the 10 million tons of steel production since the establishment of the first integrated steel mill in Japan. However it takes only 14 years in Korea. Japan is a net importer of low-tech steel product such as steel bar and steel plate with Korea.

In the latter half of the 1970s, the contribution of iron and steel export declined sharply to less than 4% of Japan's total export expansion. Iron and steel export decreased absolutely in current export value for 1980-85.

Machinery is the leading export industry in Japan. Machinery export share was 25.5% in 1960. It increased to 46% in 1970, 63% in 1980, 72% in 1985, and 74.3% in 2000. Since the mid-1960s more than half of Japan's export expansion has been attributed to the expansion of machinery exports. In the latter half of the 1970s about three-fourth of Japan's export expansion was explained by the machinery export expansion. For the period of 1980-85, 93% of Japan's export expansion was made by the machinery export expansion. When compared with the export contribution ratio of 1965-70 and that of 1980-85, the contribution of machinery total, general machinery, electric machinery, transport equipment and precision instruments increased by 38.2, 10.8, 8.1, 11.3, 8.2 percentage point respectively.

Transport equipment, mainly automobiles, export share is the largest subsector in machinery exports in 1985. Automobile industry has become one of the leading export industries of Japan. In 1955 Japan exported only two passenger cars. Japan's car export has increased remarkably these thirty years. Japan exported more than four million passenger cars in 1985. Recent leading export industries is very export-oriented. Export/production ratio of passenger cars was less than 5% in 1960, but it increased to 22.8% in 1970, 40.0% in 1975, 56.1% in 1980, and 57.9% in 1985. Export/production ratio of electronics industry, which is one of the major subsectors of machinery industry, is also very high. The ratio was about 25% in 1970. It increased to more than 30% in 1974, and 50% in 1982. When compared with the export/production ratios of consumer electronics (TV, VCR, Audio, etc.), industrial electronics (telecommunication equipment, computer, electronic measuring equipment, etc.) and electronics parts (semiconductor, etc.), the ratio of consumer electronics was the highest. The consumer electronics export/production ratio was 40% in 1970. It increased to more than 70% in 1981. The ratios of industrial electronics and electronics parts are

lower than that of consumer electronics. They were about 15% in 1970, rising recently to about 40% for industrial electronics, and about 50% for electronics parts.

Net export ratio is one of the most simple *ex post* indicators of international competitiveness. Net export ratio (NER) is defined as (X-M)/(X+M), where X and M are exports and imports. NER varies from -1 to +1. NER is negative when the country is a net importer, and positive when it is a net exporter. Increase of NER means the improvement of international competitiveness.

NER of manufactured goods shows the continuous increasing trend. Japan became the net exporter of manufactured products around the turn of the century. Long-term trend of NER of Japan's textiles shows the typical case of rise and fall of consumer non-durables. Japan became the net exporter of textiles in the 1890s. Japan's textiles export increased sharply. NER of textiles reached to +0.8 in the 1910s. In the beginning of the 20th century Textiles export led the Japan's export expansion. Since then it varied between +0.8 and +1.0 until the 1960s. It declined sharply in the 1970s. It was as low as 0.044 in 1979. Japan has become the net importer of textile products.

Japan was a net importer of metals in prewar period. NER of metals became positive in postwar period because of the rapid expansion of steel export as mentioned above. Japan was a net importer of machinery until the beginning of the 1930s except the World War I period. NER of machinery started to increase in the 1920s. It continued to increase in postwar period due to the rapid export expansion of automobiles, electric machinery, etc. We do not observe the increasing trend of NER of metals in postwar period. But NER of machinery continues to increase. Let us look at the trend of NER of machine tools in postwar Japan, which shows rapid improvement of international competitiveness of Japan's machine tool industry. NER of machine tools varied between -0.9 and

-0.6 for 1953 to 1963, but it started to improve since 1963. Japan became a net exporter of machine tools in 1972, and NER of machine tools continue to increase. It reached more than 0.8 in the mid-1980s.

Machine tools are often called mother machine because industrial machines are produced by machine tools. In this sense quality of machine tools is very important for the industrialization. Required level of machine tool industry is very high as compared with other machines.

As mentioned earlier, Japan was a net importer of machine tools in the 1950s. In 1955 more than half of domestic demand was dependent on import. In 1951 Japanese government introduced the subsidy system for promoting high quality machine tools import. Government subsidized a half of costs of importing the listed high quality machine tools. After that Government introduced another subsidy system of import substitution. Government started to subsidize a half of costs of producing the specific machine tools instead of import subsidy. This policy was implemented in order to promote domestic machine tool industry and save foreign currency.

Quick shift from import subsidy to domestic production subsidy is very important. If Government continued to subsidize machine tool import, Japanese machine tool industry might not have developed.

Development of Japanese machine tool industry is remarkable since the mid-1950s. Import dependency ratio(import/domestic demand), which was as high as 58% in 1955, declined sharply to less than 10% in the late 1970s. Introduction of new technology to machine tools is important for recent development of machine tool industry in Japan. After the microelectronics revolution, NC machine tools have become the mainstream of machine tools. The data of NC machine tools export is available since 1969. The ratio of NC machine tools export to total machine tools export was less t

han 10% before 1975. The ratio exceeded 50% in 1980, and 70% i n 1984.

4. Interaction between Private Sector and Government

4.1 Anecdotes on Industrial Policy in Postwar Japan

I understand that industrial policy is an interaction mechanis m between private sector and the government. In this context I b elieve it is useful to study the interaction mechanism on the Japa nese experiences. I will present relevant anecdotes on Japan's ind ustrial policy. I believe that we can derive some lessons from thes e for contemporary developing and transitional economies.

Many non Japanese argue that the Japanese government, i n particular MITI (Ministry of International Trade and Industry), play ed a crucial role in the rapid industrialization and export expansio n in postwar Japan as mentioned above. It is true that the Japan ese government, in particular MITI, implemented various industrial and export promotion policy measures in postwar Japan. However, MITI did not always lead the private sector, and private compani es did not always respond as expected by MITI.

I believe the most important factor to explain the rapid eco nomic growth was not the industrial policy but the dynamism of t he private sector. Of course, industrial and export promotion polici es played their own role. However, the implementation of industria l policy was in a manner assisting the efficiency-oriented manage ment of the economy based on the dynamism of the private sect or, or in other words, the market mechanism. This is a secret of Ja pan's postwar economic success.

The static and naive view that intervention in the market thr ough industrial policy cause distortions in a market and give rise t o economic inefficiency is not warranted in economic developme nt, which is a dynamic process. Economic development is a long term process of structural change. So far as competitive conditi

ons are ensured even in protected and oligopolistic market like p ostwar Japan, entrepreneurs have a strong incentive to improve p roductivity and international competitiveness. Industrial policy des igned to promote the private sector's initiative to improve competi tiveness seems to be rational as long-term development policy. Ja pan's industrial policy basically stressed private sector vitality and i nitiatives. The private sector sometimes did not follow what MITI sai d or did not react as expected by MITI. Some of such relevant c ases in postwar Japan will be presented below.

Passenger car industry in postwar Japan

After the end of World War II, there was a fairly strong view that Japan had no need to have a passenger car industry, and that Japan needed only to import passenger cars from the United States which was the strongest car exporter at that time. MITI offi cials who was responsible to promote a car industry just after the war thought that it is impossible for Japan to produce 500-600 tho usand cars (Odaka 1992, p.1). If MITI did not protect Japan's car i ndustry, the present day boom of Japan's car industry might neve r have occurred. Right after the war, even Toyota and Nissan h ad no work. Both Toyota and Nissan applied to the government's Reconstruction Financing Corporation (RFC) for financial assistance. If the government-led industrial policy had been adopted based on the view that it was not necessary to have a passenger car in dustry in Japan, no loans would have been provided to carmaker s due to the fund limitation. Among the board members of the RF C there were those who strongly opposed financing the carmaker s, but in the end both Toyota and Nissan received loans from the RFC. This may be interpreted as showing the respect given by th e Japanese government to private sector initiatives even in the re construction period just after World War II.

Role of governmental bank

Major function of the Reconstruction Financing Corporation (RFC) and the Japan Development Bank was to finance the basic industries such as electricity, coal, marine transportation and steel industry. In addition to this basic function, these banks helped to promote industrialization of utilizing new technology. SONY is a good example. When SONY developed the first transistor, all commercial banks were reluctant to finance SONY. At that occasion the Japan Development Bank financed SONY to promote a technology intensive company in Japan. Tax policy was also operated flexibly in order to promote new industries such as transistor radio, television and photo film. Transistor radio was exempted from commodity tax for two years in the initial phase of development.

Import substitution of machine tools

Sustained development of industrial machinery and further machine tools is extremely important for industrial development. In the early phase of industrial development, industrial machinery and machine tools are imported from advanced countries. In the process of industrialization machine tools are imported and import substitution of industrial machinery starts. When industrial development goes further, domestic production of machine tools begins.

In the beginning of the 1950s, as mentioned above, Japan's major exports were light manufactured goods such as textiles. In the 1950s MITI wanted to promote machinery exports, but Japan could export only low-tech machines such as sewing machines at that time. However MITI reasonably understood that machinery industry had to be promoted for future industrial development in Japan. MITI believed that superior machine tools were essential to promote machinery industry.

MITI introduced a subsidy system for machine tools import to raise the quality of industrial machinery made in Japan in 1951 a

s described in the previous section. Under this system, it designate d to promote importing superior machine tools and subsidized half of the importing costs. I understand this system contributed to up grading the machine tools utilized in Japanese manufacturing, be cause users of machine tools could import advanced machine to ols at half costs. However, if this import subsidy system had contin ued for a long time, it is difficult to expect the development of J apan's machine tools industry. Considering this, MITI shifted from im port subsidy to promoting import substitution of sophisticated mac hine tools in Japan. Under this system as well, MITI subsidized half of expenses in making prototypes of advanced machine tools. I t hink this shift of subsidy policy contributed much to enhancing the efficiency of Japan's machine tools industry.

Large scale investment plan by Kawasaki Steel

This is an example of a divergence of the government's desi re and the response of the private sector. In prewar Japan, there were two integrated steel companies: Nippon Steel and Nippon Kokan. After the war, three Kansai based open hearth steel maker s, Kawasaki Steel, Sumitomo Metal, and Kobe Steel, entered an int egrated steel industry. Kawasaki Steel's case is a famous confronta tion between a private company and the government. In the sum mer of 1950, Mr. Nishiyama, President of Kawasaki Steel announce d the plan of large scale investment of a integrated steel mill in Chiba area, which is next to Tokyo. This caused strong opposition by the government because operation ratio was very low in steel industry in the beginning of the 1950s. It was reported that Mr. Ich imanda, then the powerful governor of the Bank of Japan, said "I will make the plant in ruin." In spite of the opposition Kawasaki St eel started the investment in Chiba plant, and started operation i n June 1953 in the first steel industry rationalization plan in the pos t-Korean War recession. This is a good example of the strong desir

e of the private company to invest in the promising industries des pite the opposition by the government.

Sumitomo Metal's case

This was a dispute between Sumitomo Metal, MITI, and other competitors over the production reduction of crude steel in 1965. At that time Japan did not have enough foreign reserves and in creasing exports was critical. Export target was set based on the production capacity of steel products. Sumitomo Metal achieved f ar more than the target, but MITI's steel production quotas were s et as totals of domestic shipments and exports. Therefore if Sumito mo Metal increased the steel export, they had to cut the domesti c shipments. Sumitomo Metal argued with MITI that the system wa s against the crucial target of increasing exports. MITI applied vari ous pressures, such as refusing to approve an import quota for co king coal over the amount required for the established quota. But after many arguments MITI finally approved a "special export quo ta". This is a good example of private company's reaction to an ir rational policy.

Large scale ethylene plant

The policy of a "300,000 ethylene plant criterion" is an exam ple of large disparity between MITI's expectation and the private s ector response. Ethylene is a core product in a petrochemical ind ustry and a petrochemical industry is a typical industry where the economies of scale work.

In June 1967, the petrochemical Consultative Conference, a n organization of MITI and the manufacturers for coordinating plan t and equipment investment, announced a "300,000 ethylene plan t criterion" for new investment in order to enhance the internation al competitiveness based on scale merit. This criterion meant tha t anyone who desired to construct a new ethylene plant had to

have (i) a production capacity of 300,000 tons a year or more, (ii) a suitable plan for derivatives, and (iii) secured supply of raw material naphtha from the complex. The center companies had to be suitable for the formation of a complex with international competitiveness.

MITI had a judgment that only a few companies could afford to make massive investment to clear this criterion. MITI's petrochemical division initially thought that there were only two or three companies which would name themselves as meeting this criterion, but actually over 10 companies cleared the criterion, showing the strong desire of private companies to invest in the petrochemical industry. This is beyond MITI's initial prospects. It should be noted that the criterion was just set the minimum optimum scale, and did not directly restrict the number of the companies in the industry.

Restriction of new entries

In MITI there were two groups: market-oriented and strong intervention groups. The latter preferred the direct control of the number of companies in an industry in order to improve the international competitiveness based on scale merit. An idea of the Specific Industry Promotion Law which was not approved by the congress is a typical example of the direct control of the number of companies in an industry

When Honda Motor, which up to then had been a motorcycle maker, wanted to enter into a passenger car industry, MITI tried to restrict the new entry by the idea of the Specific Industry Promotion Law. Mr. Soichiro Honda, founder of the Honda Motor, expressed strong opposition to MITI's policy. Finally Honda Motor started small passenger car production in 1963, and later took the lead over Toyota and Nissan in anti pollution engine technology and active overseas production policy.

Honda operated on the philosophy of making positive use o

f competition with other foreign and local companies even in its motorcycle manufacturing days. Around 1950, there were more th an 100 motorcycle manufacturing companies. They requested that the government restricted the motorcycle imports. In response to this lobbying by the majority of motorcycle manufacturers' associat ion members, Mr. Honda voiced strong opposition stating that the entry of superior foreign motorcycles stimulated local manufactur ers. Import should be liberalized so as to provide an incentive for i mproving the quality and international competitiveness of Japanes e motorcycles. This dynamism of private companies undoubtedly h ad much to do with the rapid industrialization in postwar Japan.

4.2. Industrial Policy and International Competitiveness

Japanese manufacturers have been very much eager to te chnology improvement and new technology import. Even before t rade liberalization Japanese manufacturers had pressures of the c ompetition with foreign companies because they knew they had t o compete with foreign companies in a near future. This is one of the reasons they were eager to technology improvement in order to improve their international competitiveness.

Protection policy can be rationalized from economic standp oint when the protected industry is "infant industry". However it is v ery difficult to identify the "infant industry" *ex ante*. Protection polic y in the course of import substitution tend to be prolonged. There exist many examples of the prolonged import substitution in Latin American Countries.

In postwar Japan, especially early phase of rapid economic growth, domestic industries in Japan were heavily protected and promoted. However all businessmen, economists and government officials knew that Japan should open the domestic market in th e near future in the 1950s. They knew trade liberalization will be d one in the 1960s and followed by capital liberalization.

I understand that protection policy in certain development phase can be rationalized from economic standpoint as mentioned above. The most crucial issue is how to maintain and promote efficiency-oriented economic management in the protected market. For this purpose government should announce the schedule of liberalization. Gradual and step by step liberalization is desirable, but liberalization schedule should not be substantially changed by political pressure once it is announced. Private manufacturers should make every efforts to improve their competitiveness by the scheduled time of liberalization.

These experiences of Japan, efficiency oriented economic management, severe competition in protected and oligopolistic market and the consciousness of international competition, have important implications to the contemporary developing and transitional economies.

5. Lessons for Transition

5.1 Mentality Change

We have to clear certain conditions which must be met before industrial policy-based ways of thinking tailored to each nation become possible. In a situation where macroeconomic stability has yet to be attained, we believe that it would be difficult to consider mid- and long-term industrial policies. Even if such macroeconomic stability has been achieved, it will still be difficult to implement industrial policies if so-called "development of a market economy" and "price liberalization" are performed in an environment where people believe that these measures will automatically place the economy on a prosperous course. I believe that these initial illusions must be dispelled.

Most important thing is that people gain confidence in their government, and that the government works together with its people to determine mid- and long-term visions for the national eco

nomy. It is essential that a government shares with its people information such as what emergency policies should be adopted immediately, and what are the country's mid-term production and export goals. As the government meets these targets one by one, the people's trust in their government will grow. Surely the postwar experiences of Japan will be helpful in this regard. For example, such documents as the report entitled *Postwar Reconstruction of the Japanese Economy* (September 1946) of the Special Survey Committee, Ministry of Foreign of Japan can be used for reference(Okita 1992).

5.2 The Monetary system and Interenterprise Arrears

I believe that if a monetary system is not properly controlled in terms of interenterprise arrears, then a proper industrial-policy mode of thinking will fail to function. According to Clifton and Khan (1993), in Romania, the country with the most severe intercompany debt problem in the single year of 1991 alone, such arrears increased by 18 times, until the balance reached 50% of GDP. It can even be said that such a "system" of interenterprise arrears has become a medium for the indexation of debt.

In order to shore up the financial system and to liquidate intercorporate debts, it is first necessary to educate and foster bankers and to establish a note-exchange system. Although the time required to educate bankers will no doubt differ for each country, we believe that it will take anywhere between three and seven or eight years. Interenterprise arrears should be liquidated all at once. It is by no means desirable to introduce several different systems, and then to withdraw each one before it has a chance to work. If the central bank or the Ministry of Finance has a firm grasp of the actual economic situation, the use of such schemes as World Bank financial sector adjustment loans (FSAL) can make it possible to eliminate interenterprise arrears.

5.3 Economic Realities

After having been under socialist systems for 40 years in Central and Eastern Europe, with their corresponding inefficient production and research and development, it is unrealistic to think that these countries can become the world's top-ranking nations in just five or 10 years in terms of technology. It is essential, however, that these countries consider what can be accomplished according to their current respective levels of technological development. These countries should learn from the experiences of firms in postwar Japan, which accumulated in-house technology through such schemes as subcontracting for Sears and other companies in advanced countries, or through utilizing OEM production from GE and other US giants.

Just as can be seen in Hungary's industrial policy goals, the idea of "catching up" is of the utmost importance. In fact, the fundamental philosophy behind industrial policies is this idea of "catching up" through the employment of newly introduced technologies in order to industrialize at a faster rate than countries already further along in development.

5.4 The Essence of Industrial Policy

As shown in the Japan's experience, the essence of industrial policy is, (i) cooperation between government and private industry (intimate exchanges of information), and (ii) fierce competition within protected or even oligopolistic markets. It is an immense illusion to imagine that internationally competitive industries will suddenly appear simply if industrial protection, capital incentive measures, export promotion policies (export financing and tax exemption systems), and policy financing systems are adopted and implemented.

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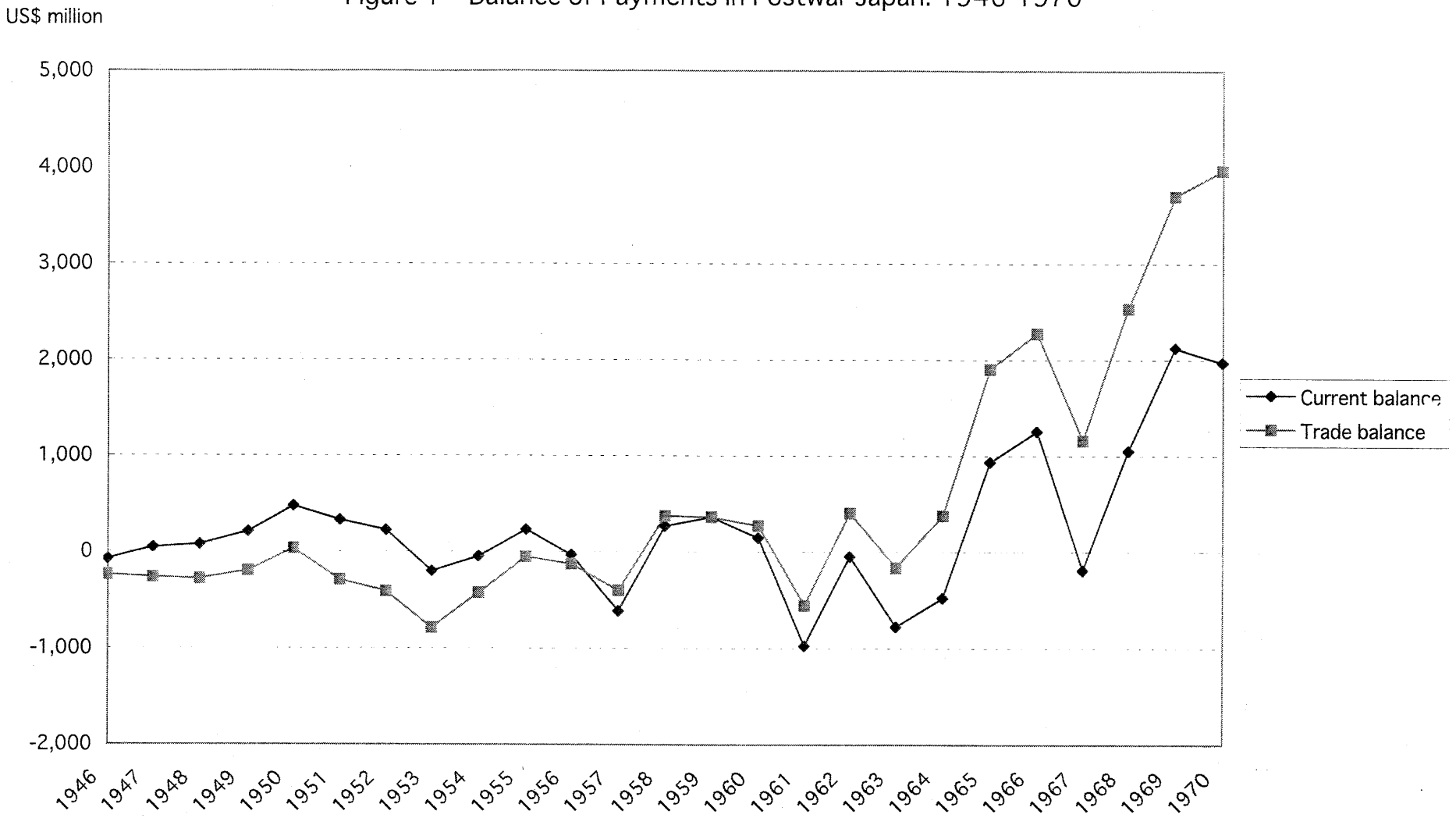
Figure 1 Balance of Payments in Postwar Japan: 1946-1970



Source: Bank of Japan.

Table 1 World Bank Loans to Japan

Year	Project	pan (US$1,000)
1953	Power plant	22,962
	Power plant	12,662
	Power plant	8,962
1956	Steel plant	6,762
	Steel plant	4,062
	Machine tools for car plant	3,812
1957	Ship engine plant	3,112
	Ship engine plant	2,962
	Steel plant	21,462
	Agricultural land developmer	2,792
	Agricultural land developmer	2,595
	Non-project	2,446
	Non-project	2,315
	Irrigation	8,462
1958	Steel plant	9,462
	Power plant	38,462
	Power plant	26,462
	Steel plant	34,462
	Steel plant	11,462
	Power plant	30,462
	Steel plant	23,462
1959	Power plant	11,462
1960	Steel plant	25,462
	Steel plant	21,462
	Freeway	41,462
1961	Steel plant	7,462
	Steel plant	8,462
	Power plant	13,462
	Shinkansen(bullet train)	81,462
1962	Freeway	41,462
1963	Freeway	76,462
1964	Freeway	51,462
1965	Freeway	26,462
	Power plant	26,462
	Freeway	76,462
	Freeway	26,462
1966	Freeway	101,462
TOTAL		864,362

Source: World Bank/Tokyo Office(1991), pp.114-117.

Table 2 Industrial Structure of Japan(1950-98, Value of shipment)

(%、%point)

	1950	1955	1960	1970	1985	1998	1998-1950	1998-1955	1998-1960
Food	13.8	17.9	12.4	10.4	11.0	11.6	-2.2	-6.3	-0.7
Textiles	21.4	16.2	11.2	6.4	3.1	1.2	-20.2	-15.0	-10.0
Apparels	1.7	1.3	1.2	1.4	1.4	1.5	-0.2	0.2	0.3
Wood products	3.7	4.1	3.5	3.2	1.6	1.2	-2.5	-2.9	-2.4
Furniture	0.7	1.0	1.0	1.5	1.1	1.1	0.4	0.1	0.1
Paper and pulp	4.0	4.2	3.9	3.3	2.8	2.7	-1.3	-1.5	-1.2
Publishing and printing	2.9	3.3	2.5	2.9	3.4	4.5	1.6	1.2	2.0
Chemicals	11.9	11.0	9.4	8.0	7.7	7.5	-4.4	-3.5	-1.9
Petroleum and coal produc	1.4	1.9	2.4	2.6	4.8	6.1	4.6	4.2	3.7
Rubber products	2.4	1.4	1.5	1.1	1.1	1.1	-1.4	-0.4	-0.5
Leather products	0.7	0.6	0.5	0.5	0.4	0.3	-0.4	-0.3	-0.2
Ceramics	3.5	3.4	3.5	3.6	3.3	3.1	-0.4	-0.4	-0.4
Iron and steel	9.6	9.6	10.6	9.5	6.6	4.2	-5.4	-5.4	-6.4
Non-ferrous metals	4.2	4.1	4.3	4.4	2.4	2.1	-2.1	-2.1	-2.2
Metal products	2.8	3.2	3.9	5.4	5.0	5.6	2.7	2.3	1.7
General machinery	4.2	4.7	7.8	9.9	9.2	10.3	6.1	5.5	2.5
Electric machinery	2.6	3.7	8.3	10.6	15.3	18.2	15.6	14.5	9.9
Transport equipment	5.9	5.5	8.5	10.5	13.5	14.7	8.7	9.2	6.1
Precision instrument	0.8	0.8	1.1	1.3	1.6	1.5	0.7	0.7	0.4
Others	1.6	2.0	2.5	3.6	4.6	1.7	0.1	-0.3	-0.8
Light manufactures	41.3	40.4	29.3	22.8	18.2	16.6	-24.7	-23.8	-12.7
Machinery	13.6	14.8	25.7	32.3	39.6	44.7	31.1	29.9	18.9

Source: MITI, *Census of Manufactures*, various issues; others.

Note: Last three colums are changes in shares (percentage point).

Light manufacutures=Food+Textiles+Apparels+Wood products+Furniture.

Machinery=General machinery+Electric machinery+Transport equipment+Precision instrument.

Table 3 Export Structure of Japan(1953-2000)

(%)

	1953	1954	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Total	21.0	21.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	23.0	100.0	19.0
Foodstuff	9.4	7.6	6.2	6.3	4.1	3.4	1.4	1.2	0.8	0.6	3.9	19.0
Textiles	36.1	40.3	37.3	30.1	18.7	12.5	6.7	4.8	3.6	2.5	5.3	19.0
Textile fibers	n.a.	n.a.	2.9	2.0	1.8	1.0	0.8	0.5	0.4	0.3	3.7	n.a.
Textile yarn	n.a.	n.a.	29.1	22.7	13.5	9.0	5.2	3.9	2.8	2.0	4.9	n.a.
Clothing	2.9	3.4	5.2	5.4	3.4	2.4	0.6	0.4	0.4	0.2	3.5	n.a.
Chemicals	5.7	5.5	5.1	4.5	6.5	6.4	7.0	5.3	4.4	5.5	10.0	19.0
Non-metallic minerals	4.9	4.6	4.7	4.2	3.1	1.9	1.3	1.4	1.2	1.1	4.6	19.0
Metals and metal products	15.1	15.6	19.2	14.0	20.3	19.7	22.4	16.5	10.6	6.8	9.7	19.0
Iron and steel	10.9	10.3	12.8	9.6	15.3	14.7	18.2	11.9	7.8	4.4	7.2	19.0
Non-ferrous metals	n.a.	n.a.	3.3	0.6	1.4	1.3	1.0	1.5	0.8	0.8	4.3	19.0
Metal products	n.a.	n.a.	3.0	3.8	3.6	3.7	3.2	3.0	2.0	1.6	4.9	19.0
Machinery	15.9	13.5	na	25.5	35.2	46.3	53.8	62.7	71.8	74.9	85.8	19.0
General machinery	n.a.	n.a.	na	na	7.4	10.4	12.1	13.9	16.8	22.1	26.7	19.0
Electric machinery	n.a.	n.a.	na	na	9.2	12.3	11.0	14.4	16.9	23.0	28.2	19.0
Transport equipment	n.a.	n.a.	na	na	14.7	17.8	26.1	26.5	28.0	25.0	23.0	19.0
Precision instruments	n.a.	n.a.	na	na	3.9	5.7	4.7	7.9	10.1	4.8	7.9	19.0
Others	12.9	13.0	na	15.3	12.1	9.9	7.4	8.1	7.7	8.5	11.4	31.0

Source: Ministry of Finance.