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1. Introduction -- Something is Happening in Japan

Last summer, the Ministry of International Trade and Industry of Japan (MITI) published two documents describing the desirable industrial structure in the 21st century and the industrial policy for achieving it. One is *Industrial Structure in the Year 2000: The Perspective of Industrial Policies beyond the Economic Efficiency-Oriented Policies*. The other is *Vision of International Trade and Industrial Policy for the 1990s: Creating Humanitarian Value from Global Points of View*. As the subtitles show, both propose to shift Japan's industrial policies from the economic efficiency-oriented ones to amenity-pursuing ones. The former document is especially interesting because it says that we should set up programs for the 21st century based on "self-criticism of the so-called companyism society." It frankly admits that, after the late 1970s, Japan's socioeconomic system lost its effectiveness that had contributed to improve the standard of living in recovering from destruction after World War II. Thus, according to the document, "It is very difficult to say that the profits of economic growth are returned enough to improve the standard of living of the Japanese nation" (Department of Industrial Policy, MITI 1990).¹ As Kamo points out, "Companyism" is used as a key word to criticize Japan's socioeconomic structure by the "Japan bashers" outside or the left-wingers inside Japan; it has been an enemy's word, from the traditional standpoint of MITI (Kamo, 1990b). We cannot accept this somewhat political announcement at face value. However, whatever MITI's true intention is, the announcement it is astonishing, given that MITI has been doing completely the opposite.

Even more surprising, Toyota announced it would build three new factories: in Hokkaido, the northernmost island of Japan; in Tohoku, the northern part of the Japanese main island; and in Kyushu, the southernmost island of Japan. This means Toyota will modify its traditional "company town" strategy, which has been one of the elements constituting the so-called Toyota production system. Furthermore, almost as if it had made some arrangements with Toyota in advance, MITI recommended large Japanese manufacturers to abandon their "Just-in-Time" system. The reason is that

the Just-in-Time system is energy-wasteful and pollutive since it requires frequent parts deliveries by truck within a densely agglomerated industrial complex.² Now, something is happening in Japan.

The changes will undoubtedly affect American industries as well. As Japan's international trade grew and economic conflicts between the U.S. and Japan got more severe, U.S.-Japan exchange became more active through both governmental and private channels. One issue is the dramatic increase of Japan's direct investment to the United States. At the beginning of 1990, over 600 factories fully or partly owned by Japanese had already started their operation in the U.S., and almost 160 thousand Americans worked for them. According to the MITI estimate, by the year 2000 the number of Americans working for Japan's transplants will reach 840 thousand.³ These activities of Japanese companies in the U.S. will inevitably affect the socioeconomic transformation of the U.S. and Japan in various forms.

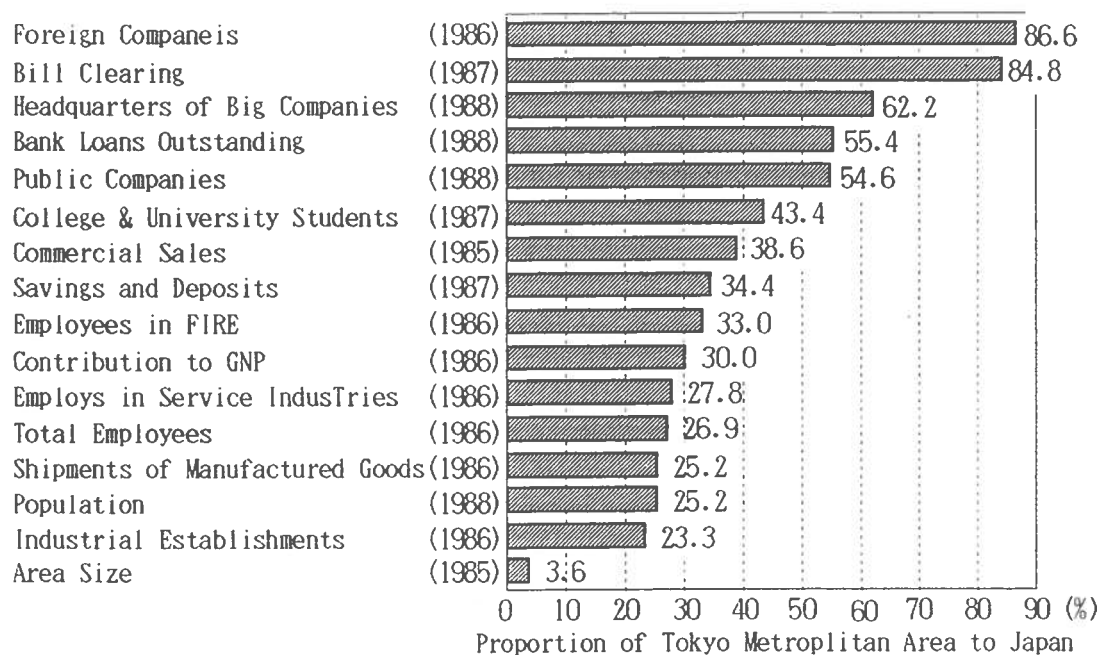
In the United States, through the activities of Japan's transplants, and also through the activities of American companies dealing with Japan's transplants, production systems and the regional economy are about to be reorganized. It is a restructuring based on a kind of Japanese model. In Japan, through the experiences of the transplants' operation in the U.S., the companies, their Japanese staff members, and the government are learning something new as well. The changes in Japan previously mentioned must relate to them; the question is how, and whether, they can solve the problems in the U.S. and Japan. But before discussing these questions, let me discuss current problems in the regional planning in Japan and the United States.

2. Japanese Problems in Regional Development

2-1. The Ultimate Centralization of Tokyo

So far, the Japanese economy has certainly performed well. After the Gulf Crisis, stock prices fell to two-thirds of the highest level, and have not recovered yet, but this is not reflected in the actual economy. The previous level of the stock market was too speculative, thus there were no panics in spite of the sharp decline of the prices. Are there no economic problems then in Japan? I do not think so.

The most serious problem in regional development in Japan is the ultimate centralization of Tokyo. Japan's population is about 120 million. If we consider the Tokyo metropolitan area, containing such prefectures as Tokyo, Saitama, Chiba, and Kanagawa, it has over 31 million people, and 62 percent of the large enterprises' headquarters are concentrated in Greater Tokyo. It has 30 percent of the GNP, 25.2 percent of the shipments of manufactured goods, 38.6 percent of commercial sales, 55.4 percent of bank loans outstanding, and, remarkably, 84.8 percent of bill clearing (Figure 1).



(Note) Tokyo Metropolitan Area: Prefectures of Tokyo, Kanagawa, Saitama, Chiba.

(Source) Planning Bureau, Economic Planning Agency, *Tokyo no Sekaitoshika to Chiiki no Kasseika* (Tokyo as a World City and Regional Vitalization), 1989. p-52.

Figure 1. Over Concentration to Tokyo

Land prices in Tokyo are extremely expensive; places over \$100 thousand per square feet are not so unusual in downtown Tokyo. The people who became unable to afford their homes within Tokyo Prefecture moved away to suburban areas; the commuter's sphere of Tokyo has expanded to a 40- or 50-mile radius. Suburban residents cannot commute by car because of a poor highway system so most of them use the well-developed public transportation system. But, even in ten-year-old data, 60 percent had a commute time of over one hour, and one out of five took over 90 minutes to commute each way.⁴

2-2. The Failure of National Land Policies and the Japanese Production System

The problem of over-concentration in Tokyo is not new. Since the late 1950s, when the high economic growth period began, regional disparity has consistently widened in Japan. Rural population has decreased continuously, big cities have gotten bigger and bigger, and small local cities have been declining or stagnant. The Japanese government has ostensibly been trying to disperse industries as a base of its national land use policies. However, it has never been successful. During the late 1960s and the 1970s, based on the national policies, local governments put industrialization at the center of their economic policies and publicly constructed many industrial complex sites. However, almost all the projects failed to introduce desirable factories (Miyamoto 1973).⁵ The cause of the failure relates to the production system of large Japanese manufacturers.

As has recently become familiar in the United States, Japanese manufacturers have successfully minimized their own employment and investment in production equipment by extensively using subcontractors.⁶ In addition, they have reduced production costs by taking advantage of severe competition between subcontractors⁷ as well as wage differentials by the firm's size.⁸ This is one source of their strong competitiveness. In rural areas, however, there is certainly cheap labor, land, and water, but there is no existing subcontractor network for immediate use. If one large company intended to build its new factory in a local area apart from its original location, it would need to persuade its subcontractors to concurrently build their new factories in the area at their own expense (as Japanese companies do in the United States). However, twenty year ago, Japanese domestic markets were too small to do so. Fundamentally, there were no possibilities of introducing large enterprises' factories into local areas. If one traveled in Japanese rural areas, one could see huge vacant lands for industrial use without any plans to utilize them.⁹ On the other hand, as just described, the ultimate centralization of Tokyo is still progressing.

2-3. En-daka and Land Speculation

In the past two or three years, the centralization of Tokyo has been getting more severe. What happened? To answer this question, we have to pay attention to *En-daka* problems; problems that were caused by the sharp rise of exchange rate of the yen to other currencies, especially to the dollar, that began in 1985.

The conference of Great Five nations in September 1985 was a crucial turning point for the Japanese economy. Because of the agreement between the Great Five nations which accepted the fall of the exchange rate of the dollar, the yen's rate began to rise sharply against the dollar. One year after the conference, it had reached just under 130 yen per dollar, which was twice the previous rate. In any country, the rise of the exchange rate of its currency naturally weakens the international competitiveness of its export industries. Thus we could easily predict that the Japanese export industries would be hit seriously.

In the traditional scenario and as once experienced in the United States, one could expect major enterprises to transform themselves rapidly into multinationals, moving their production bases to the Southeast Asian countries for their cheap labor. The hollowing of the domestic economy then would surely occur. Old industrial cities would be filled with the unemployed, crime would increase, and the desolation of neighborhood communities would occur. However, these situations did not happen in Japan. Although regional disparity did expand (for instance, some old industrial cities, especially small ones dependent on the shipbuilding or steel industry, quickened their decline),¹⁰ the scale of the Japanese economy absolutely expanded. Contrary to the expectation of a rising unemployment rate, the most serious problem to the Japanese economy now is labor shortage. The stamina of Japanese companies continues to amaze.

In fact, some people correctly predicted today's conditions at the beginning of the *En-daka*. They insisted that if a Japanese company successfully survived the first two years, the conditions of international competition would return to where they were previously because the prices of imported materials would certainly decline. Everything was just as they predicted. But the question was how a company could survive the first two years. The answer has five parts, and is outlined below.

The first part is speculation in land and stocks. As a big trade surplus showed, large enterprises in Japan gained record-breaking profits. However, in the fear of a recession caused by the *En-daka*, they could not expand investment in plant and equipment. Thus they applied their huge idle funds to speculation.¹¹

The second is a restriction on wage increases. Business circles stirred the air of crisis and threatened workers with the possibility of dismissal. Trade unions of the large enterprises agreed to the restriction on wage increases, giving priority to avoiding dismissals.

The third is the promotion of direct investment in overseas markets, in order to raise the rate of imported parts. Simultaneously, large enterprises required domestic subcontractors to discount their products.

The fourth is the vast national investment in large projects. According to the policy of so-called introduction of private sector vitality, such projects as Tokyo Waterfront Subcenter, Yokohama Minato Mirai 21, Chiba Makuhari Messe, and Kansai New International Airport were designated as national projects.¹²

The fifth and final part is the introduction of consumption taxes. However, instead, the government reduced both commodity and income taxes and dispersed them over the entire population.

Among these policies, I believe, the most decisive means was land speculation, because high land prices are the fundamental base of Japanese enterprises' financing capability.¹³ However, all of the policies worked together in conjunction with general Japanese management principles, as outlined below.

Again, let's consider the secrets of the strong competitiveness of Japanese companies. I have mentioned their subcontracting system, which is certainly very important. But their competitiveness is ultimately derived from a "mutual stock holding system." As is well known, nearly 70 percent of stocks issued in Japan are held by related companies. This system overlaps with the so-called "Keiretsu" system, but both are not exactly the same. In consequence of this system, Japanese large enterprises do not have to pay attention to paying back dividends to their shareholders. This means that they can aggressively invest in plant, equipment, research, and development without worrying about short-term profits and being bothered by their shareholders' minds. This is the source of Japanese enterprises' competitiveness.

However, this system is senseless in terms of financing; if they get money by selling their stocks to their related companies, then they spend this money to buy the related companies' stocks; we have a kind of "zero-sum" system. Then where does the money come from? It simply comes from banks. Japanese enterprises must express their gratitude to the nation's high propensities to save. Therefore what is important is the high credit-worthiness of land. In urban areas in Japan, land

prices, especially those in the metropolitan area, have almost always risen over the interest rate of the time. The credit-worthiness of land has been outstanding in Japan (Figure 2 and Figure 3).¹⁴

Here is one example. Last year, Nippon Steel Corporation finished a land-fill project in the Osaka Bay area which had taken 15 years. The initial purpose of this project was to create land for a large integrated steel plant including blast furnaces. However, Nippon Steel has already announced its withdrawal from Osaka Region and its adjacent plant had closed.

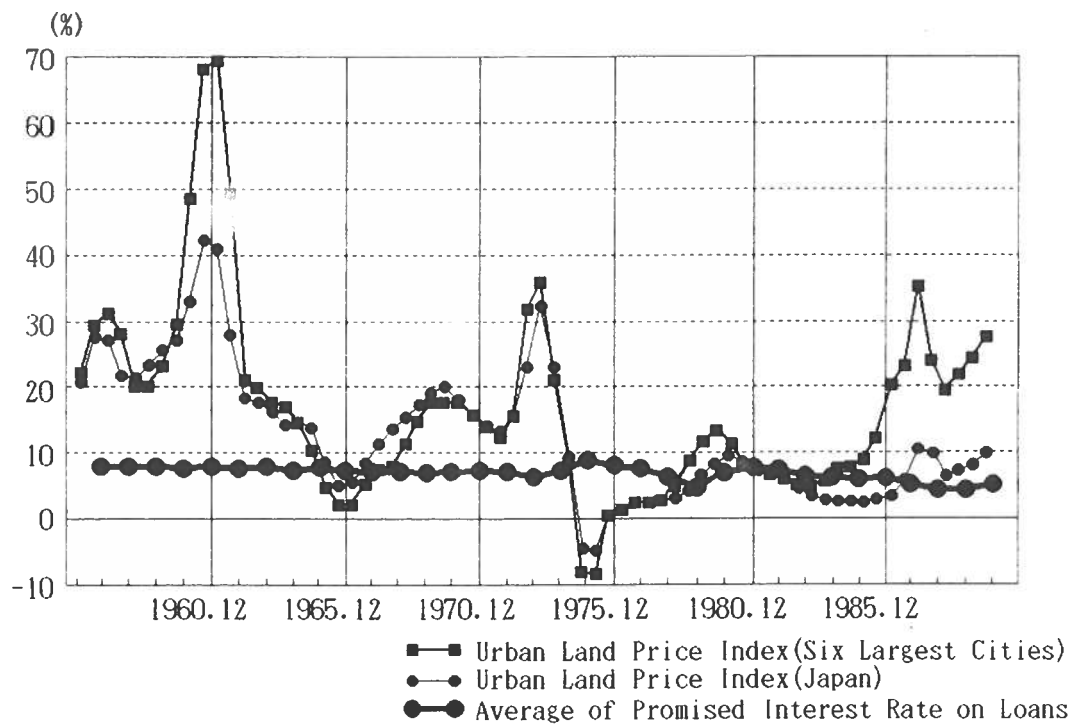
Thus Nippon Steel completed the project to make land that would never be used for its initial purpose. But this is golden land for Nippon Steel. Because nobody can set up ownership on water surface in Japan, this place inherently did not belong to anybody. If you received a permit for filling, you could "make" land at negligible expense. In this case, the value of this land is easily over \$100 million. If the zoning of this land is changed for use other than industry, the assessed amount will rise. The discussion and negotiation about the zoning change and redevelopment of this land has already begun between Nippon Steel and the local government.

In short, although Japanese systems have had some beneficial effects, the difficulties outlined earlier in this section are outcomes of Japanese companies' behavior and their production systems.

3. American Problems in Regional Development

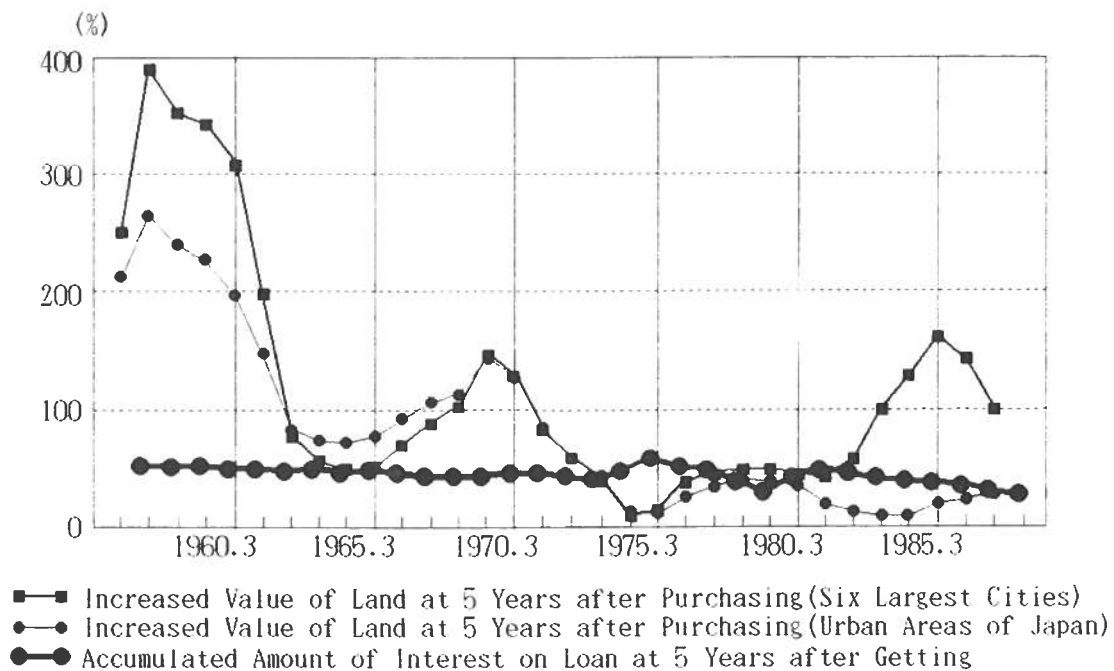
3-1. Inequality in Regional Development in the United States

Now let us turn to the United States. As previously mentioned, at least after 1955, regional disparity has consistently been expanding in Japan. The bigger those cities were, the more rapidly they grew. Small cities and rural areas, on the other hand, were declining or stagnant. However, in the United States regional growth and decline have been changing places often. This is the most significant difference in regional development between the U.S. and Japan. A decade ago, Americans were discussing the contrast of the Snow Belt with the Sun Belt (Sawers and Tabb 1983). However, after the recession of 1981 to 1982, when the recovery of the east coast cities (which were represented by the "Massachusetts Miracle" [Lampe 1988] or the financial restructuring of New York City [Tabb 1982]) became obvious, Americans expressed the geographical structure of the U.S. economy as a "Bi-coastal Economy" (Democratic Staff of the Joint Economic Committee, Congress of the United States 1986; Yokota 1990). Since last year, Americans again came to emphasize the superiority of the Sun Belt. The Massachusetts Miracle is gone and the *New York Times* reports the financial crisis of New York City every day. Japan has never experienced such drastic geographical shifts of industries as the ones in the United States. Investment in the U.S. has been thoroughly focused on whatever



(Source) National Land Agency, *Tochi Hakusho (White Paper of Land)*, 1990.
 Reprocessed from Fig. 4-2-1(p.103) and Fig. 4-2-2(p.105).

Figure 2. Annual Changes of Urban Land Price Index and Promised Interest Rate on Loans



(Source) See Figure 2.

Figure 3. Comparison of the Capital Gain of Land with Accumulated Amount of Interest on Loans

areas that are currently prosperous. However, if these areas lose their advantage, they will be abandoned without additional investment. Facing the drastic shifts of industries that have been caused by seemingly irresponsible investment activities of U.S. companies, each local government seems to be left at the mercy of fate.

3-2. A New Stage of Suburbanization and Regional Restructuring in the U.S.

We can see such inequalities in regional development not only in the rise and fall of metropolitan areas, but in those of municipalities within a metropolitan area. Last year and the year before, we visited old industrial cities in the Midwest and the east coast. Our main target cities were Pittsburgh, Detroit, Philadelphia, Boston, and Baltimore.¹⁵ The economic recovery of each metropolitan area was remarkable on the whole. When we visited in 1990, every city's unemployment rate was under or near 5 percent. In terms of unemployment rate, every city seemed to have completely recovered from the recession of 1981 to 1982. Nevertheless, the contrast between the rebuilt and the depressed districts within a metropolitan area was very clear.

Pittsburgh is successfully transforming from the "Smog City" to the world headquarter-based and most livable city in the United States. Its restructuring is very famous in Japan as a deindustrialization model, and many Japanese visit to examine it every year. Nevertheless, only the central city has been successful in restructuring (Enshu 1990; Matsuoka 1990). Most suburban areas, which once thrived as mill towns, have many unemployed people and their economic difficulties are still serious (Yamatani, et al. 1989).¹⁶ Of course, we have to appreciate Pittsburgh's partnership for restructuring, which efficiently includes business interests, local governments, and universities (Subragia 1989; Shigemori 1990; Kamo 1990).¹⁷ However, we should understand the difficulties of the suburban areas as well. Most plans for redevelopment of former mill sites have practically no feasibility.¹⁸

By contrast, greater Detroit has successfully revitalized its auto industry and regained liveliness. Oakland County, which is north of Detroit, is the second wealthiest county in the United States, just following Manhattan (Darden, et al. 1987; Shigemori 1990; Matsuoka 1990). However, it is difficult to be optimistic about Detroit. The deep disparity between white and black people of the Detroit area, which grew after the riot of 1967, has accelerated the exodus of the white middle class. It has also made cooperative efforts such as ones between blacks and whites and between the central city and the surrounding municipalities more difficult.¹⁹ Its population has declined to under one million.

The rest of the metropolitan areas we visited -- Boston, Baltimore, and Philadelphia -- are trying to improve their financial, commercial, and service functions and to revitalize their central business districts by waterfront redevelopment projects. They are also pursuing construction projects

for research and development and office complexes in their suburban areas. We can classify them as the diversified restructuring model (Enshu 1990). Although they achieved part of their goals, residential communities of minorities that occupy a considerable part of their downtown areas are a very heavy load (Enshu 1988, 1990; Kinoshita 1990). What particularly made us gloomy was the high dropout rate from public school in each of these cities.

These regional disparities indicate that suburbanization of large cities is still progressing. However, today's suburbanization is different from that in the 1960s, which was caused by residential development in suburban areas. Today's suburbanization is progressing with the dispersion of jobs, especially high paying ones (Fishman 1987; J. Thomas 1990; Shiozaki 1990). Thus, suburbanization more severely affects the lives of minorities who live in downtown areas than it previously did. It is a testament to the expanding inequality of the standard of living, as Harrison and Bluestone analyzed in their *Great U-Turn* (1988).

Of course, as previously mentioned, local governments have been dedicating their best efforts to restructuring communities. They have developed programs for the redistribution of development profits, such as linkage programs between commercial and residential development and growth management systems (Keating 1986, 1991). However, metropolitan areas are fragmented to hundreds of municipalities, and they are severely competing with each other in development races. This complicates the problem by furthering suburbanization, restricting the redistribution of development profits, and making regional disparity more serious (Kamo 1990b).

4. Mutual Impacts of Japan's Transplants on Regional Restructuring

4-1. Japan's Transplants and Regional Restructuring in the United States

To summarize, Japan's economy grew rapidly due to the Japanese production system, including the subcontracting system and the *Keiretsu* system, and successfully avoided the recession caused by the *En-daka*. However, as a result, the centralization of Tokyo is ultimately progressing, land prices in big cities are skyrocketing, and people are physically and mentally fatigued by long commuting. In the United States, facing the Japanese challenge, U.S. firms moved their production to the south and to developing countries for their cheap labor, and reduced their production costs by increasing outsourcing rates from foreign countries. Some sold their manufacturing divisions and transformed themselves to financial or service-sector businesses. In any case, they did not opt to improve their plants, equipment, processes, and the quality of products. Although it contributed to recovering business conditions, this policy expanded the gap of living standard between the rich and the poor (Harrison & Bluestone 1982, 1989). Each local government has continued its efforts to restructure

communities. Pittsburgh has tried deindustrialization; Detroit, reindustrialization; and Boston, Baltimore, and Philadelphia have adopted a diversified model. However, severe competition of municipalities within a metropolitan area furthered the suburbanization and regional disparity in the United States.

Nevertheless, we have to pay attention to another phenomenon. As I first related, trade conflicts between the U.S. and Japan promoted Japan's direct investment in the U.S. It has given various influences to regional restructuring both in the U.S. and Japan. With regards to impacts on American communities, *Technology Review* carried an interesting article quite recently, entitled "How Japanese Industry Is Rebuilding the Rust Belt," written by Martin Kenney and Richard Florida (1991). They investigated Japan's transplants of such industries as steel, automobile, and auto-related products, and their analysis follows.

First, Japanese transplants came to the so-called Rust Belt and provided jobs, investments, and productive capacity in a period when most U.S. companies continued to move off-shore and diversify out of the basic industry. Not only automobile assembly plants but also the entire auto-related productive organization -- including steel mills and auto parts suppliers, as well as tire, rubber, and plastic fabrication plants -- came to the United States in a very short period. They were recreating a production system on U.S. soil similar to their system in Japan; i.e., productive networks that provide close linkages among manufacturing, management, and research and development with many suppliers, thus building a "transplant complex" which encompasses the entire production chain. In addition, transplants have achieved high productivity by means of simplifying job classifications and building the Just-in-Time system with suppliers.

Kenney and Florida also recognize some shortcomings of transplants and this system. The Japanese-owned factories are not workers' paradises. For instance, located in rural areas, they avoid unions and employ minorities and suppliers of auto parts at much lower wages than in auto assembly plants. Moreover, they have successfully formed a ring of first-tier suppliers but lack the dense layers of second- and third-tier suppliers. Nevertheless, Kenney and Florida insist that these thriving transplants belie the notion that the supposedly inhospitable U.S. manufacturing environment was to blame for the decline of the Big Three. They praise the transplants, claiming they serve as a model for a powerful new method of economic development, one based on an integrated production network. According to this analysis, they propose that development planners of states and local governments can help organize local production networks by showing large companies the value of local supply sources. In this way they could familiarize small and medium-sized companies with Just-in-Time principles, and provide information on market opportunities. Kenney and Florida also allege that to

spend public money to modernize local manufacturing infrastructure and to help local firms accommodate Japanese Just-in-Time practices is more important than traditional financial incentive packages including tax breaks.

I also believe that the role of Japanese transplants in restructuring the Rust Belt is important. It is significant that they show the possibility of maintaining heavy industrial operation in high-wage, mature capitalist countries such as the United States. There is no doubt that their activities will have a great impact on the future of American regional restructuring strategies. However, I do not think that this impact promises a solution for the problems of American cities previously mentioned. Kenney and Florida seem to over-praise Japanese transplants in their eagerness to criticize the behavior of U.S. multinationals.

4-2. Counter-impacts of Japan's Direct Investment in the United States on Regional Development in Japan

While the operation of Japan's transplants in the U.S. both reveals the responsibilities of U.S. multinationals for the uneven development of regional economy and encourages local efforts for restructuring, it also has some impacts on regional development in Japan. At the beginning of this essay, I referred to important signs of a changing socioeconomic structure in Japan. Those were found in MITI's two documents that propose to get rid of companyism, Toyota's announcement of its new location policy, and MITI's proposal of giving up the Just-in-Time system.

For the problems mentioned -- i.e., the ultimate centralization of Tokyo; skyrocketing land prices; and long, exhausting commuting -- a deep-rooted complaint has been accumulating among Japanese people: why are our lives still difficult in spite of the huge profits of Japanese companies? This question is primitive yet critical for the ruling class of Japan. In addition, the Japanese economy faces and will probably continue to face severe labor shortage problems. Why? Today's labor shortage is rooted in the change of a view of labor, especially that of the young generation, as well as in a structural demographic change; i.e., rapid growth of the proportion of aged people. Recently, Japanese young people have denounced jobs that are, as they say, "3 Ks." In English, it would be "3 Ds," standing for *Difficult*, *Dirty*, and *Dangerous*. Heavy industrial and construction work are typical "3K" jobs. If we cannot improve the poor quality of urban life and unattractive working environment, sooner or later Japanese heavy industries will inevitably collapse from a severe labor problem. Thus, Japanese government and business leaders need to establish some new programs to ease widespread complaints and attract young people.

Since government and business leaders believed Japanese productivity and competitiveness strongly depended on production systems (including densely concentrated production complexes and

Just-in-Time subcontracting systems), until recently they had no new ideas. However, from the ten years of experience after the first boom of transplanting onto the United States, Japanese leaders have learned that they can survive without rigidly maintaining their production systems. I believe that Toyota's new location policy and the MITI's proposal of giving up Just-in-Time system were done on the background of transplants' experiences. And I think these will inevitably have significant influences on the regional restructuring strategy in Japan.

5. Fundamental Questions on the Japanese Production System²⁰

Japan's direct investment in the U.S., caused by trade conflicts between the U.S. and Japan, seems to open new ways for regional restructuring in both countries through the operation of Japan's transplants. These would be hybrid types of solution. However, we have to note fundamental questions about the Japanese production systems that are raised among Japanese management staff members of the transplants, especially young members.

In February 1991, I interviewed some young Japanese management staff members in an American subsidiary of the semiconductor division of a Japanese telecommunication and computer giant. They frankly told me their serious anxiety about their corporation's future. Citing their feelings about their company's declining creativity in product design compared to that of small American start-ups and extraordinarily severe competition in the race of semiconductor memory development,²¹ one of them said as follows:

So far, because our company has money, and owing to workers' dedication, it has survived severe competition and might survive several more years. But, though a top manager says, "Catch up with others! Aim at the No. 1 share!" he doesn't say why we have to. Even if we got No. 1 share, no one would get profits. Our wages would not increase. We would not be able to take more vacations. Without explicit and concrete goals -- for instance, to contribute to improving our environment or to contribute to advancing technologies -- could our slogan "everlastingly growing" attract people? I doubt it.

When people discuss the Japanese production systems, the Just-in-Time system is always one of the major topics, as if it is a representative of all the Japanese systems. However, Just-in-Time is not essential for all of them. It is particularly characteristic of the automobile industry, but is not always popular in other important industries such as the telecommunication, semiconductor, and home-appliances industries. Nevertheless, they all commonly have a flexible job assignment system. This allows producers to frequently change worker allocation to correspond with the fluctuation of daily production schedules caused by market change, production problems, and the need to recover from production delays. Producers can instantly change the production schedule and the daily worker

allocation by using a computerized system. The fluctuation of daily production schedules is likely to be over the production capacity of a regular work shift and is usually unpredictable. Workers are frequently required to work overtime, even on Saturday and Sunday, without advance notification. Thus, the key to functioning in the Japanese production system is how management can successfully form an obedient worker organization.²²

Though this flexible job assignment system has the advantage of securing jobs more easily under the severe competition than traditional American systems, we have to thoroughly consider whether American workers would be happy in this system. Japanese workers have dedicated themselves to this system without major resistance since the late 1960s in Japan.

Just-in-Time is an extended system of this flexible job assignment to outside subcontractors of an assembly plant. The lower the rank the subcontractor holds, the more severe its managerial environment and labor situations are. If subcontractors intend to accommodate the Just-in-Time system, they usually have to do extra investment. But Just-in-Time delivery itself creates no added value. This means Just-in-Time does not contribute to subcontractors' profits. Nevertheless, it greatly contributes to the cost reduction of an assembly plant. Without Just-in-Time delivery, an assembly plant would have to store a great number of parts in its own warehouse and then reorder them according to the production schedule by using much more expensive workers than those of the subcontractors. Are subcontractors content to deal with this system? Are the workers of subcontractors content to dedicate themselves to this system with much lower wages than those of the parent assembly plant's workers?²³ Certainly, subcontractors and their workers do dedicate themselves to this system in Japan. But how is this dedication maintained without major resistance? This is a key question to correctly understand Japanese production systems (Nohara 1991).

The conventional answer to this is that the militant labor movement was defeated and replaced with the labor-capital collaborative movement in establishing the Japanese production system (Shimoyama & Hyodo 1982).²⁴ However, to maintain worker obedience over a quarter century in spite of the severe working conditions, there must have been some substantial relations that allow workers to identify their profits with that of their companies.

Let us remember the secret strength of Japanese companies which I mentioned in the first half of this essay: the mutual stock holding system. As a result of this system, companies were able to decide their investment without taking their shareholders' opinions into account, and, therefore, without depending on short-term profits. In other words, at least ostensibly, Japanese companies' primary goal is not profit maximization but simply their own everlasting growth. Thus, companies need only work for themselves. They do not have to work for their shareholders, who are outsiders

from management's point of view. From the standpoint of the *Keiretsu* system, companies work for their group, and this is not a total fiction.

These ideological characteristics of the Japanese production system naturally reflect a sense of values of Japanese workers and labor movements. Since the late 1950s, when the Japanese production system was originally formed, Japanese enterprises have been growing without pause. This is why the Japanese production system has been functioning without the resistance of workers and subcontractors. Thus, so long as the mutual stock holding system and unbroken growth continue and remain peculiar to Japan, the Japanese production system will also be peculiar to Japan, although some elements of the system might be diffusible.

Another strength of Japanese companies is that they are likely to maintain their operation under considerably strong regulation, and this regulation could promote technological innovation. The most noticeable example in Japan is the relationship between Japan's fuel-efficient, clean engine and emission control (Miyamoto 1989). The strict emission control that was first enacted in 1975 and strengthened step by step against the opposition of the auto industry encouraged reluctant auto makers to develop fuel-efficient, clean engines.²⁵ The role this engine played to increase Japanese competitiveness in the international automobile industry is very famous.

However, the Japanese production system also has its problems. One important one is the unlimited eagerness of expansion due to a lack of market restrictions, which is derived from the mutual stock holding system. Every large Japanese enterprise always invests to keep up with what its rival does. This is one of the secrets of their strength, but it also results in enormous duplication from the national and global economic points of view. What is worse, results from investment and from research and development will never be disclosed. Considered from a sustainable-development point of view, Japanese companies might be much more troublesome than the companies of other capitalist countries.

6. Conclusion

As Japan's presence in the global market has been rapidly enhanced and the economic conflicts between the U.S. and Japan have grown, U.S.-Japan exchange has become more active both on a government and a private level. The most remarkable change in the last decade is the rapid increase of Japan's direct investment in the U.S., which has begun to have impacts on regional restructuring both in the U.S. and Japan. In the United States, facing the challenge of Japanese companies, heavy industries that once supported the American economy have declined and old industrial cities in the Midwest and the East were severely damaged. However, Japan's transplants,

which have rapidly increased in the last decade, have contributed to the restructuring of the Rust Belt to some degree and have begun to gain a good reputation that they "serve as a model of a powerful new method of economic development, one based on an integrated production network." However, the kernel of Japanese production systems is the mutual stock holding system that allows Japanese companies to decide their investment without dependence on short-term profits, and it has raised workers' loyalty to their companies. Thus, although some elements of the Japanese production system might be diffusible, the diffusion of the entire system is very difficult. Rather, I expect the emergence of more progressive systems superior to the Japanese system on the democratic soil of the United States.

On the other hand, although Japan has achieved strong international competitiveness, in the process of development it has also created such severe problems as the ultimate centralization of Tokyo and environmental degradation. Strong criticisms from foreign countries, as well as domestic problems involving labor shortage, have seemed to push Japanese policies from economic development-preferring to amenity-oriented in the fields of industrial and regional development. From this point of view, the Japanese people have begun to pay attention to the operation of Japan's transplants in the U.S., American ways of restructuring (including the Pittsburgh model of transformation from "Smog City" to "the Most Livable City in the U.S."), and American-born redistribution systems of development profits (such as commercial-residential development linkage and growth management). Those are all manifestations of the impacts of U.S.-Japan socioeconomic exchange.

My intention in the evaluation of mutual impacts is not to propose seeking a hybrid type of solution that picks up the good pieces of both the U.S. and Japanese systems. To maintain a nation's international competitiveness is surely important, but it makes no sense unless it contributes to improving the standard of living, shrinking the gaps between the rich and the poor, and upgrading amenities of urban lives. What is important is to overcome problems in American and Japanese systems and to create new systems superior to them both. Our studies of how to do these are just beginning.

NOTES

¹Department of Industrial Policy, MITI, 2000 *Nen no Sangyo Kozo: Keizai Koritsu Jushi wo Koeta Sangyo Seisaku no Tenbo (Industrial Structure in the Year 2000: The Perspective of Industrial Policies beyond the Economic Efficiency-Oriented Policies)*, 1990, p. 14. This document emphasizes the importance of taking new standpoints to improve the standard of living of the Japanese nation and to free ourselves of economic efficiency-oriented policies; it counts the following four directions for self-criticized industrial policies against companyism society: (1) giving priority to improving the standard of living of the Japanese nation; (2) switching the criteria of industrial policies from economic efficiency to comprehensive efficiency both from social and economic points of view; (3) establishing internationally harmonized industrial activities; (4) improving the foundation for long-term development. However considered its detailed policies, it does not seem earnest about them. It proposes to improve social conditions by promoting the employment of elderly people and females, taking into account the aging population and decreasing labor force in Japan. However, it also intends to create cultural life styles by industrial activities and to promote new service industries adequate to the future society. What is important is that these service industries consist mainly of leisure, health, and lifetime learning-related services and some services corresponding to the aging population and the feminization of the work force. In other words, such services where public roles have inherently been important as culture, recreation, and social welfare would be transferred to private businesses. Furthermore, regarding the internationally harmonized industrial activities and the foundation for long-term development, its major policies are economic deregulation, governmental support in information and financing, and the improvement of infrastructure by introducing so-called private sector vitality. To sum up, though it emphasizes the necessity of switching industrial policies, in terms of more detailed policies it intends to push forward with privatization more intensively than the Japanese government did in the 1980s.

²In fact, we can see many big trailers that are waiting in line on a driveway in front of a Just-in-Time factory until their designated delivery time. After all, the driveway is used as a warehouse and the Just-in-Time system is barely maintained by that. Another reason of this recommendation is the labor shortage in the transportation industry. MITI is afraid that the multi-delivery system might increase transportation costs because of the shortage of drivers and eventually raise production costs. Regarding reactions of business leaders (although the remark of one auto manufacturer is that we can no longer ignore environmental and traffic problems is carried), most business leaders complain that the recommendation to give up the Just-in-Time system is incompatible with their efforts at rationalization. *Nihon Keizai Shimbun*, February 21, 1991.

³Joseph J. Fucini and Suzy Fucini, *Working for the Japanese*, p. 219. Authors cited the figures from Takahashi Hoshino, "Japanese Manufacturers Taking Root in Local Communities of the U.S.A.," in Long Term Credit Bank of Japan, *Economic Review*, no. 96, 1989, and William J. Holstein, et al., "Japan, U.S.A.," *Business Week*, July 14, 1986.

⁴Metropolitan Areas Development Bureau, National Land Agency, *Daitoshiken no Seibi (Improving Infrastructure in Metropolitan Areas)*, 1985, II. Current Condition of Metropolitan Areas, p. 117. The figures are from research on season ticket passengers commuting to such metropolitan CBDs as Tokyo (Chiyoda-ku, Chuo-ku, and Minato-ku), Osaka (Chuo-ku, Nishi-ku, and Minami-ku), and Nagoya (Naka-ku, Nakamura-ku, Atsuta-ku, and Higashi-ku). The research was conducted as part of the Transportation Census in Metropolitan Areas in 1980. 59.6 percent of commuters to Tokyo CBD, 44.5 percent of those to Osaka CBD, and 50.1 percent of those to Nagoya CBD took over one hour each way. Further, the number of commuters by Shinkansen (Super-Express) is increasing.

⁵Although the government failed to diffuse industries, it did not suffer from the failure. On the contrary, because development projects for local industrialization successfully stimulated business, the government enhanced its political position through them.

⁶The auto industry is the most typical among industries forming a huge, hierarchical subcontracting system. Among auto-assembling companies, Toyota has a particularly intensive and multi-layered subcontracting system. Called the Toyota Production System, it has become a model for the others. Much has been written about the Toyota Production System, but Tomaru, Kubota, and Endo (eds.), *Toyota to Chiiki Shakai (Toyota and Community)*, 1987, most systematically analyzes it from various aspects among them.

⁷In explaining the contribution of suppliers to the competitiveness of the Japanese auto industry, single sourcing for each specific part, long-term commitment, and supplier's involvement in designing process have been major elements (J. P. Womack, D. Roos, and D. Jones, *The Machine That Changed the World*, 1990). However, this is true only between an assembler and its first-tier suppliers, and between a few first-tier suppliers and a few second-tier suppliers. Taking account of all the suppliers, which amount to almost 40,000 in the Toyota case, we could find that many of them were simultaneously dealing with two or more companies, even those in industries other than auto assemblers. Furthermore, the frequent change of customers of small suppliers is not unusual. Taking advantage of the competition between the thousands of suppliers, a parent company can effectively and successfully reduce the costs. (The suppliers that are located within a complete company town, like Toyota, inevitably deal only with a specific final assembler through its supply chain. In addition, in the case of suppliers that are positioned at the lowest end of the supply chain, each of them sticks with orders from a specific company because it cannot pay costs for marketing. However, their positions are extremely vulnerable.) (H. Enshu, *Toshi Sangyo Shisetsu no Haichi Kozo ni Kansuru Kenkyu [The Study on Spatial Structure of Industrial Facilities in Urban Areas]*, 1980.)

⁸Wage differentials by firm's size in Japan are significant; if we rate the average wage of manufacturing firms with over 500 employees at 100 in 1984, that with from 100 to 499 employees is rated at 80, that with from 30 to 99 employees is rated at 63, and that with under 30 employees is rated at 57. Tomaru, Kubota, and Endo (eds.), op. cit., pp. 6-7.

⁹Shin-Sangyo Toshi Kensetsu Sokushin Ho (Promoting the Construction of New Industrial Cities Law) (1962) and Kogyo Seibi Tokubetsu Chiiki Seibi Sokushin Ho (Promoting the Improvement of Special Areas for Industrial Complexes Law) (1964) are two major laws for diffusing industrial facilities in the 1960s. The government designated fifteen areas for the new industrial cities and six areas for the special industrial complexes and intensively poured public investment on them. However, both laws could not achieve their expected goals. Out of the fifteen new industrial cities only two were actually industrialized. Further, Noson Chiiki Kogyo Donyu Sokushin Ho (Promoting the Introduction of Industries into Rural Areas Law) (1971) and Kogyo Saihaichi Sokushin Ho (Promoting the Relocation of Industries Law) (1972) were enacted in the 1970s. But neither of these made noticeable improvements either.

¹⁰The decline of local small cities depending only on steel or shipbuilding industry was very severe. For instance, in Innoshima City, Hiroshima Prefecture, which had been thriving as a company town of Hitachi Zosen Co. Ltd. for 70 years, Hitachi Zosen shut down its Innoshima Dock and reduced workers at the dock from over 5,000 at maximum to only 200. This naturally affected its suppliers and other local industries, so that the city's population, which once reached over 40,000, might be under 10,000. Local steel cities such as Muroran and Kamaishi are in the same condition. However, from the entire Japanese economy point of view, both steel and shipbuilding industries still maintain their substantial production. Hitachi Zosen, who put Innoshima City on the endangered species list, is expanding its state-of-the-art Ariake Dock. Withdrawing from Muroran, Kamaishi, and Sakai, Nippon Steel Corporation concentrated its production to Kimitsu Works in Chiba Prefecture.

¹¹Land speculation is an old trick to cope with *En-daka*. Japan experienced *En-daka* four times: late 1971 after the Nixon New Economic Policy (so-called dollar crisis); 1973 after shifting to the floating exchange rate system; 1977-78; and after late 1985. As Figure 2 shows, at these *En-daka* periods urban land prices always increased sharply. However, the sharp rise of land prices after 1986 began in commercial areas of Tokyo, then spread by turns to residential and industrial areas, and finally spread over local metropolitan areas with time lags of one or two years.

¹²To stimulate business activities and buy local votes, the Japanese government has effectively used vast public investment since Toshi Seisaku Taiko (General Principle of Urban Policy) that was framed by the ruling Liberal Democratic Party (LDP) in 1968.

¹³The Japanese government stimulated the sharp rise of land prices rather than controlled it. First, the disposal of nationally owned land triggered this skyrocketing of land prices; to justify the disposal, the government insisted on the necessity for introducing private sector vitality. Second, the government assumed that Tokyo would be a world city with bulky financial functions; it approved the ultimate centralization of Tokyo and consequently stimulated the air of speculation. The National Land Agency obviously overestimated office demand at 5,100 ha in the Tokyo metropolitan area that was released in the planning process of the Fourth Comprehensive National Development Plan (CNDP); it soon revised the estimation down to one-third of the

previous one. Third, the government aggressively invested in big projects and took a low interest policy; these were causes of the rise of land prices. Fourth, the government did not adopt the means of controlling land prices (especially the permission required land trade zone) that were defined in Kokudo Riyo Keikaku Ho (National Land Use Planning Law). Fifth and finally, the government did not swiftly amend the income tax exception that allowed tax exemption to those who spent money raised from their land trades to buy alternative lands. Facing serious criticism of the nation, the government slightly changed its policies later; it modified the main concept of the Fourth CNDP to one promoting the polarized national land structure, and it restricted financing for real estate industry and amended the income tax exception. However, the government cannot avoid its responsibility for the skyrocketing land prices.

¹⁴As Figure 2 shows, annual changing rates of land prices fluctuate sharply, affected by speculation. However, the corporate property of land is seldom resold in a short period. From this point of view, when comparing its capital gain with the accumulated amount of interest on a loan after a certain period, we find the superiority of the property of land (Figure 3).

¹⁵These cities were visited as part of the three-year research project on "Urban Problems in the Transformation of Industrial Structure in the United States." This project is funded by the Ministry of Education of Japan and is being conducted by an interdisciplinary research team, including two American scholars. American Urban Economy Workshop, 1989 *Monbusho International Scientific Research Program: Urban Problems in the Transformation of Industrial Structure in the U.S.A.: The Decline and Restructuring Old Industrial Cities, Interim Report*, May 1990.

¹⁶According to the research of Yamatani, et al., in small cities in western Pennsylvania, unemployment rates are still high. Moreover, the unemployment rates of blacks, single women with children, and unskilled workers with little education are particularly serious. In short, the more severe handicaps these people have, the more strictly they are excluded from high-paying jobs. Yamatani, et al., *The Impact of Social/Economic Change on Households Among Six Communities in Western Pennsylvania*, 1989.

¹⁷Sbragia appreciates the positive side of the partnership in Pittsburgh, but she also pays her attention to the fact that the unemployment rate of blacks in Pittsburgh was the second highest in the U.S. in spite of its reputation as the most livable city. Sbragia, "The Pittsburgh Model of Economic Development: Partnership, Responsiveness, and Indifference," in G. D. Squires (ed.), *Unequal Partnership*, 1989.

¹⁸The partnership in Pittsburgh crystallized in the policy recommendation to the Commonwealth of Pennsylvania, *Strategy 21: Pittsburgh/Allegheny Economic Development Strategy to Begin the 21st Century*, 1985 (amended in 1988). The redevelopment of Mon Valley, where once-thriving mill towns are concentrated, is counted in five major policies. However, a planner of Allegheny County, who contributed to this policy recommendation, did not hide his pessimistic view of the feasibility of former mill site redevelopment projects.

¹⁹Detroit has had a tradition of black self-help movements. R. Thomas, *The State of Black Detroit: Building From Strength The Black Self-Help Tradition in Detroit*, 1987. However among various activities, Focus: HOPE is the most noticeable. J. Thomas, "Planning and Industrial Decline: Lessons from Postwar Detroit," in *APA Journal*, Summer 1990. This movement, which was founded as an interracial movement of volunteers, started its initial activity from a food supply program, and then gradually expanded its activities to provide job training. The most outstanding characteristic of this training is in the combination of non-profit job training programs with on-the-job training programs by its for-profit subsidiaries, Cycle-Tec Remanufacturing, Inc. (supplier for GM) and High Quality Manufacturing, Inc. (supplier for Detroit Diesel Corporation and Ford Motor Company). The concept of these on-the-job training programs is that "freedom must extend to the possibility of achieving one's highest aspirations" (W. T. Cunningham, Director). Focus: HOPE employs 400 persons and involves 40,000 volunteers. Focus: HOPE Industry Mall, its main facilities, is a 25-acre, 608,000 sq. ft. plant and office complex. Focus: HOPE, *Focus: HOPE is...*, 1990.

²⁰Actual production systems that Japanese companies adopt vary not only by industry but by individual company within the same industrial classification. However, we can conceptually structure the ideal model of production system in two ways. One is a collective model that picks up all noticeable features from actual production systems. The other is an essential model that is made of features that are common, reciprocal, and compatible with each other. When I say "the Japanese production system," it means this essential model of actual production systems. On the other hand, when I say "Japanese production systems," they mean various actual production systems adopted by major Japanese enterprises.

²¹When 256 kilobyte (K) memory chips were dominant in the world IC market, NEC and Hitachi were two major chip producers in Japan. Toshiba, who slightly delayed in entering the 256K market, concentrated its effort on developing the process of 1 megabyte (M) memory chips and tried to lead the 1M market. NEC and Hitachi were passive in developing the 1M processes then, because they raised huge profits from 256K trades. Thus, Toshiba successfully became the first chipmaker who commercially produced 1M memory chips. Toshiba's profits as a pioneer of the 1M market were enormous. This was the beginning of the evil competition of memory development. Now, all Japanese chipmakers, NEC, Hitachi, Toshiba, and Fujitsu, try to lead the 4M and 16M market. However, the construction of a standard 16M factory whose production capacity is 3.5 or 4 million chips per month requires about \$700 million, which is three times expensive as the costs of constructing a standard 256K factory. What is worse, the product lifetime of IC memories is only two and half or three years. As a result they have to use uncompleted processes to make memories because of the shortage of development time. This means that the process that they use now will not be able to use to make the next generation of memories, contrary to their official announcement. At least \$700 million have to be spent only for fixed costs to make at most 140 million chips; it is natural that there are no winners in the IC market.

²²We cannot ignore the intensity of manufacturing work as well. In the industries that still include labor-intensive processes like the automobile industry, extraordinarily hard work more directly contributes to the profitability of Japanese manufacturers than the flexible job assignment system. Regarding actual labor conditions of Toyota Motor Corporation, see S. Kamata, *Jidosha Zetsubo Kojo*, 1972 (English version, *Japan in the Passing Lane: an Insider's Account of Life in a Japanese Auto Factory*, 1982).

²³According to the research of Kenney and Florida, the wage differentials of hourly workers of auto suppliers with auto assemblers are from five to seven dollars per hour. Florida and Kenney, "How Japanese Industry Is Rebuilding the Rust Belt," *Technology Review*, February/March 1991.

²⁴In labor disputes of Japanese leading industries in the 1950s and the early 1960s, especially in those of the auto industry, the attack of companies on their militant unions to break their solidarity was very severe and crafty. As is reflected by the fact that some union leaders at the time of the Toyota dispute became executive board members of Toyota Motor Corporation, unions have practically been playing the role of labor management in Japanese heavy industrial companies since the 1960s. S. Kamata, op. cit.

²⁵In fact, the resistance of Japanese auto makers to the regulation was so strong that the government had to suspended the implementation of the 1978 regulation until 1980. Eiji Toyoda, former president of Toyota Motor Corporation, complains that the regulation seemed as if the person who could not swim had been thrown into the sea to learn swimming. S. Matsushita, *Toyota Endaka Norikiri Senryaku: "Cyakuhu no Jidai" no Tettei Gorika Sakusen (Toyota's Strategy for Surviving Endaka [Sharp Rise of Exchange Rate of the Yen])*, 1987.

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