A Note on the Global Challenges and Local Regional Responses in the Tohoku District before the Collapse of the Bubble Economy

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I. Major Economic Indexes on the Tohoku District before the Collapse of Bubble Economy

1. Outlook

I would like to show you major economic indexes of the recent Tohoku District by Figure 1. From this Figure 1 we can understand that although Tohoku covers 17.7% of total land of Japan, the share of population and labor force are only around 8%. The relatively high ratio (18%) of the labor force of primary sector shows us that from a historical point of view the major industry in the Tohoku District has been agriculture itself of which paddy farming is a main crop. Besides, we can find out some regional features among these statistics: first "plant location," "GDP (primary)," and "electrical power" are between 15% ~17% which belong to the large share group. Secondly "manufacturing," "retail business" and "GDP (total)" are between 4% ~7%. These latter figures are relatively low; they are around 3% which are still low; they in proportion, although export and travel abroad in the Tohoku District have recently increased year by year. It may be because the export-oriented companies have increased even in Tohoku and the life style of Tohoku's inhabitants has changed and they have gotten the long vacation to go abroad.

![Figure 1: Major Economic Indexes of the Tohoku District](image-url)
2. The Change of Tohoku’s Population

Figure 2 shows us the change of population in the prefectures of Tohoku and the Tohoku's share of population of total Japan. The total population of Tohoku since 1940 continued to increase until 1960 when it was just the starting point of the first High-speed Economic Growth Age in Japan. After this census year the total population of Tohoku has declined until 1970. The reason of this declining trend is the gravitation of young population from the Tohoku Region to the Kanto Industrial region including Tokyo as labor powers. Since 1970 Tohoku's population has increased again until 1985, but after that Tohoku's population has declined once more, though the declining ratio it self was small.

Although the Tohoku District consists of 6 prefectures, we must point out that among these 6 only Miyagi and Fukushima, which are located in the southern part of Tohoku District, have increased in their population. On the contrary, the other three of prefectures located in the northern part of Tohoku District, that is, Aomori, Akita, and Iwate have declined in their population by census years. Besides, Yamagata has also lost population though it is advantageously located in the southern part of the Tohoku District.

This changing pattern of Tohoku's population especially after World War II has been closely related with the business cycle of Japanese economy and the regional development policies in Tohoku. If we consider the increasing trend of Tohoku's population after the latter half of 1970's, we can detect an economic and social effort of the regional development even in Tohoku strongly promoted by the so-called "Domestic Demand Leading Policy".

However, if we examine the age structure of Tohoku's population, we must be very surprised by the fact that in Tohoku the most local governing bodies have already become the aged societies. Moreover, in mountainous and rural districts, a lot of young people have continued to leave their home towns and moved into the big cities like Tokyo and Osaka to get bigger money than their native villages or towns would be able to offer. Today, most mountainous regions in Tohoku used to be the depopulated regions without exception.
II The Changes of Infrastructure in the Tohoku District

Since the latter half of 1970's the infrastructure of the Tohoku District, has considerably changed, because the high-speed transportation system has been gradually constructed mainly along the Pacific Ocean side. An epoch of this big structural transition began at the opening of Tohoku Expressway (Iwatsuki in Saitama prefecture to Sendai in Miyagi prefecture) in 1975 and of Tohoku Shinkansen (Tohoku Super Express Train, Omiya in Saitama prefecture to Morioka in Iwate prefecture) in 1982. The introduction of these two high-speed transportation systems into the underdeveloped areas of Tohoku has attached a revolutionary significance to a long history of the Tohoku District.

Besides, local air ports have one by one constructed in the 6 prefectures of the Tohoku District since Yamagata Air Port in 1981, and especially both Yamagata and Akita have their two air ports.

Figure 3 shows us the transportation network of the Tohoku District. Nowadays, the Tohoku Expressway have expanded to the northern end of Honshu (mainland of Japan), that is, Aomori prefecture. As will be seen later, a lot of firms and capitals have been transferred from Kanto Area (megalopolis area) into the underdeveloped areas of Tohoku along this Tohoku Expressway and some convenient access roads with this expressway.

It had offered, however, very severe regional problems to three Japan Sea side prefectures (Aomori, Akita, and Yamagata) and their inhabitants. They have been disappointed very much because of this infrastructure priority which has promoted the concentration in the only Pacific Ocean side. They were afraid that the social and economic disparity between both sides might expand more and more.

Even in the western Tohoku, a new wave on the infrastructure policy has occurred since the latter of 1980's. One of the most typical movements is a fact of constructions of the Rokkotsu-Doro (so-called
"Rib type road") which will combine both of the western and eastern sides to reduce the regional disparity. So far, the policy of Tohoku's traffic roads has been promoted only to connect with Tokyo as soon as possible, and accordingly nobody has considered or promoted aggressively to connect each other with transverse regions in Tohoku. Of course, we never think that the present situation of Tohoku's transportation network will be enough to promote the regional activities. However, it is important for us to recognize that during the past one decade the infrastructure adjustments have accomplished revolutionary development, and that the areas getting direct or indirect benefits from these high level lines or roads are not yet so many.

We have to indicate, in addition, that in the Tohoku District, the sea ports have not kept industrial importance as the international trade or the industrial ports. At the same time, the Tohoku District has not had the real international air ports unlike the Kyushu District in spite of the existence of trade-related companies.

III Present Situation and Prospect of the Industrial Structure in the Tohoku District

1. The Business Cycle of Tohoku District

Figure 4 shows us the changes of economic growth rates of Japan and Tohoku after 1975. First of all, we can find that after the second oil crisis in 1979 the Japanese economy had fallen into the serious recession which lasted until 1983. At the same period the Tohoku economy had also continued to be below the normal, and besides the Tohoku's economic growth rate was lower than that of all Japan. Since 1984, however, as the Japanese economy took the rising tendency, the economic condition in Tohoku was also reversed. After 1987 both of the economic growth rates have kept the relatively high level of over 4% in contrast with other developed countries.

2. Conversion of the Regional Industrial Structure

We can understand the change of industrial structure by Figure 5 and Figure 6. Figure 5 shows us the changes of the proportion of population employed by industrial sectors. Among some features of this fig-
ure, first "Agriculture" has declined by census from 60.3% in 1950 to 18.3% in 1985. Secondly, on the contrary, "Manufacturing," "Wholesale," and "Service" sectors have increased by census. This figure shows that even Tohoku has gradually changed from the pure agricultural region to the mixed societies.

Figure 6 teaches us the change of GDP of Tohoku District by Industry since 1975. Unlike the result of Figure 5, the primary industry has become fairly at low rate (5.9%) until 1988 even in Tohoku compared with GDP proportion (2.3%) of Japan in the same year. By this comparison we can propose that since 1980's the industrial structure in Tohoku has obviously changed from the pure agricultural region to the more industrialized and urbanized region.

When we attempt to refer to Japanese agriculture and the rural society after World War II, first of all, we may recognize that the year of 1960 was the decisive turning point in the long history of Japan. The reasons why I stress on this point are as follows:

1. The agricultural productivity has decisively changed by the introduction of agricultural machines at this point.
2. Both of the working style and the life style have changed after this point, that is, households have transferred from the style of real full-time farmer to that of mainly part-time farmer.
3. Consequently after this point, the rural communities have formed a new age of co-existence with farmers and workers in a same community, even in a same household.
4. The total farm income including non-agricultural income has increased gradually. And therefore
Tohoku's farmers have also got many kinds of durable consumption goods including cars and have been able to build up new houses in spite of the heavy debts from agricultural cooperative associations (Nokyo in Japanese) and so on.

3. The Accumulation of the High-Tech-related Firms in Tohoku

(1) General Trend

Before the end of World War II the Japanese Industry went still backward and the Japanese had to depend on the imported machines from developed countries. It was as late as around 1955 that the machinery industry in Japan established the system of modern production and got international competitive power.

After around 1960 the Japanese economy experienced so-called "The High-Speed Economic Growth Age" and gradually the pattern of export products changed from the pattern of ships, transistor radios, trucks, buses, and construction machines to that of cameras, watches, tape recorders, motorcycles, television sets, automobiles, and machine tools.

Figure 7 proves the changes of number of applications for the constructions of new factories since 1976 in the Tohoku District. The development of such systems of transportation network as the Tohoku highway (opened in 1975), the Tohoku Shinkansen (super express train) and airports has encouraged the aggressive transfer of a lot of factories into Tohoku. The share of Tohoku's new factory number has increased year by year and in 1990 the Tohoku's share of total number was 16.6%. Especially since 1988 the absolute number of new factories has rapidly increased and Tohoku has raised more its share of total for Japan.

Besides, from Figure 7 we can read that the High-Tech industries have concentrated on the Tohoku District. Since 1976 the ratios of these High-Tech and High-Tech-related factories have been over 25% except only one year (1977). Then four years (1976, '79, '83 and '88) accounted for over 30% which is tremendously high compared with other districts. This shows us obviously that nowadays Tohoku have sufficiently got a social position as the very important High-Tech-related area in present Japan.
Figure 8 shows us the value of shipments of manufactured goods in Tohoku. The value itself has certainly increased every five years, and the Tohoku’s share of total for Japan has also steadily increased 3.8% in 1975 to 4.9% in 1989 when the value of shipment was 14.6 trillion Japanese yen, an increase of 9.9% over the previous year. In 1989, the District had 27,699 factories, 6.6% of total Japan and 858,839 employees, 7.8% of total Japan. Among the Tohoku District the largest is Fukushima prefecture, the second is Miyagi pref., the third is Yamagata pref. and these three are located on the Southern Tohoku District nearer to Tokyo.

On the contrary, the share of the Northern Tohoku District (Aomori, Iwate, and Akita) is not as large as the former. However, we have to pay attention to the movement of Iwate prefecture which has a little bit increased especially since 1985. According to the order list of shipments by prefecture, among 47 prefectures the best in Tohoku is Fukushima (the 23rd), the 2nd is Miyagi prefecture (the 25th), the 3rd is Yamagata (the 29th), the 4th is Iwate (the 35th), the 5th is Akita (the 39th), and the 6th is Aomori (the 43rd).

(2) The Distribution of New Factories established in the Tohoku District

As a reason of this recent phenomenon, we can indicate that the year of 1985 was just the opening year of The Tohoku Shinkansen from Ueno to Morioka, capital of Iwate prefecture. At the same time Hanamaki Air Port was opened in 1985. Namely we can regard it as the most useful policy to adjust the infrastructure for underdeveloped regions. The ministry of Construction of Japan has recently changed the fundamental policy on the construction of new main road as highway. So far, the decision standard on the construction order of new highways had made by the past actual results of the existing road itself. On the contrary, it has recently changed to the "profit-leading" standard, and it has become not so difficult to construct new highways even in the Tohoku District in comparison the former situation of construction.

Figure 9 is the distribution map of new factories (Tokutei-Kojyo in Japanese) established in Tohoku in 1991. "Tokutei-Kojyo" means the factories with a site for factory over 9,000m² or an area of building over 3000m². This map teaches us some interesting trends:

①Basically the new factory zones are concentrating along The Tohoku Expressway and The Tohoku Shinkansen as is mentioned above.

②The most concentrating area is an inland central area along these highway and Shinkansen in Fukushima.
(3) The second concentrated area is the southern one between Ichinoseki city and Kitakami city along the same highway and supper express train in Iwate prefecture.

(4) Generally speaking, even in Akita and Aomori, especially in and around Hachinohe city in Aomori, the High-Tech and High-Tech-related firms have gradually been established.

(3) The Diversion of Industrial Structure in the Tohoku District

The main industry of Tohoku until around 1975 had been Food Manufacturing. From Figure 10 we can infer that the leading industry in Tohoku has obviously changed to the electrical machinery which accounted for 30% in 1989. According to data regarding the application for construction of specific factories in 1990, among so-called advanced industries the largest is "Electronic Parts" (38.1%). At the head of this, "Communication and related" (29.8%), "Electronic Applied Equipment" (16.7%), and "Medical Appliances" (3.6%) have followed.
About 35% of Japan's high technology manufacturing facilities are located in Tohoku (include Niigata prefecture, in this case) which is far higher than any other district of Japan. This includes the domestic and foreign affiliated companies like Sony, Fujitsu, NEC, Motorola, etc. The reasons why they decided to establish their companies in Tohoku are the following reasons: ① reasonable land costs, ② high quality labor and relatively cheap labor compared with megalopolis areas, ③ well developed transportation and other infrastructure, and ④ cooperative local authorities and attractive incentives.

Tohoku boasts ten institutes of technology and ten junior colleges of technology. Also in Tohoku there are many universities including Tohoku University which has formed the major sources of Japan's technological innovation. (Source: *Japan's High Technology Frontier*, ed. by Tohoku Electric Power Co., Inc.)

As I have pointed out, the social and economic changes are the social phenomena which have just recently generalized in Tohoku. The fundamental social structure in Tohoku until around 1980 has essentially depended on the primary industry, especially on paddy farming. Consequently the industrial structure and the life styles of most inhabitants in Tohoku have basically depended on this traditional paddy farming. Therefore the regional commercial activities have also had very deep relationships with paddy farming.

The Japanese government has already indicated, in the "Agricultural White Paper, 1960" that in future Japanese agriculture should be diverse from the small monoculture type depending on the only paddy farming to the multiple types as dairy farming, horticulture, fruits, livestock farming, etc. In spite of such strong political incentive, however, the rural structure in Tohoku, in fact had never changed until the beginning of the 1980s, that is, an epoch of diversion of Tohoku's main industry. Generally speaking, as a lot of firms have transferred from the Kanto District to Tohoku, the working styles of most farmers have basically changed from the pure farmer type into that of the part-time farmer in which they have got money mainly from non-agricultural sectors as permanent workers or temporary workers. Nowadays, the income per head in Tohoku was around 2 million yen (U.S.$ 15,802, in 1988) a year which was on approximately same level with U.S.A. and former West Germany. (Source: Taketsugu Okawa," The present Agricultural Situation of Tohoku District for Theoretical Development on the Differentiation of Peasantry," *Bulletin of the Yamagata University (Social Science)*, Vol. 17, No. 2, Jan. 1987.)
IV The Internationalization in the Tohoku District

1. New Movements of the International Trade in the Tohoku District

Figure 11 shows us a recent change of international trades in the Tohoku District.

![Figure 11: Imports and Exports in Tohoku](image)

In 1980 Tohoku's imports amounted to 1,736 billion yens, while exports ran into only 598 billion yens, 34.4% for the imports. In 1985 we can find out that the situation of Tohoku's International trade have fairly changed, that is, although imports decreased 137 billion yens, exports expanded to 1,417 billion yen (U.S.$11 billion), 3.0% of the total for Japan, of course, which is still not so big share compared with other districts.

Figure 12 shows us the respective percentages of Tohoku's exports of machinery products of the total for Japan in 1985.

First of all, the percentage of Tohoku's total of exports was still only 3% of the Japan total. If we will pick up some items over this 3% in Figure 12, we can indicate as follows: the largest one was "household electronic products" (9.2%), the second was "precision instruments" (8.7%), the third was "electronic machinery" (6.0%). In contrast with them, cars, other transportation equipment, and industrial machinery were very low.

As for the proportion of exporting products and equipments of Tohoku's "machinery industry," the same data show that the largest one was "household electronic product" with 37.9%, and the second was "electronic equipments" with 17.3%, and in conclusion the both accounted for 55.2%.
2. The Location of Factories of Foreign Affiliates in Tohoku

In 1990, the number of factories and research institutes of foreign-affiliated companies (with a foreign capital ratio of over 50%) totaled to 39. Explained in detail, the largest is Fukushima (14), followed by Yamagata (13), Miyagi (7), and Iwate (5). We can suggest by these numbers that 87% of the total area located in southern Tohoku prefectures.

On the proportion by industry of foreign affiliate’s factories, "chemical facilitates" make up the largest share with 30.8%, followed by "electrical machinery" (25.6%), "industrial machinery" (15.4%), "ceramics, stone, and clay" (10.3%) and "transportation industry "(5.1%).

Figure 13 shows us the proportion by related country. The largest country was U.S.A. with 51.3%, the second was Germany (18.0%), followed by France (10.3%), U.K. (5.1%), Switzerland (5.1%), Sweden (5.1%).


3. The Sister City Relationship and Other International One in the Tohoku District

In the Tohoku District around 60 sister cities relationships have concluded with towns of 24 countries. Generally speaking, the common pattern of friendship has been promoted only through human exchange. However, that has gradually changed recently. Namely, the promotion of economic relationships has been hoped more than mere human exchange. (Source: Ibid., P. 26.)

Besides, the number of Tohoku residents' traveling abroad has been rapidly increasing since 1987 mainly due to the appreciation of the yen. The number in 1990 ran into for 369,000, 3.4% of Japan total. At the same time, many international conferences have been held in Tohoku (Sendai City, Miyagi prefecture etc). Since 1988 participants of international conferences held in Sendai have been around nine thousands. On the contrary, the number of foreign guests stayed in hotels in Tohoku amounted to 35,180 in 1989, 1.3% increases over the preceding year. (Source: Ibid., Economic Facts, P. 23, Tohoku-no-Shuyo-Keizai-Shihyo in Japanese, The Major Statistical Indexes on The Tohoku District, supervised by Tohoku Bureau of International Trade and Industry, 1991, P.41.)
V The Transition of Japanese National Development Policy and the Regional 
Responses in the Tohoku District

1. Brief History

In Japan the local and regional development policy used to be basically prescribed by The National Development Policy because of the traditional "Centralism" since the Meiji Era.

After World War II, Japanese Government has made the following four National General Development Plans. The (First) National General Development Plan decided by the Cabinet Council in 1955 promoted the giant capital investment into the key industries such as iron industry, shipbuilding, electric power, chemical industry, electrical machine manufacturing, automobile industry, etc. That is to say, at that time the main concept of this policy was the construction of "industrial complex" equipped by so-called the heavy industries. Especially a feature of this stage can be said as a period led by the New Industrial Cities Plan ordained in 1962. Under this legal plan, Sendai Bay (Miyagi prefecture), Jyoban-Koriyama (Fukushima prefecture), Akita Bay (Akita prefecture), and Hachinohe (Aomori Prefecture) were the main objects for development, and these four industrial city zones have been highly developed after that. Although these industrial regions have not always been exploited with success, in Hachinohe and Jyoban-Koriyama the ventures have been regarded as successful.

The New National General Development Plan was decided by the Cabinet Council in 1969. The main concept of this plan was made under the strong political effects of the "Retto-Kaizo-Ron" (a development theory advocated by Mr. Kakuei Tanaka, Prime Minister of those days) which means "The Japanese Islands Reconstruction Theory". During this plan the Big-Scale Projects as the Shinkansen and the expressways were promoted by the giant capital investments. In this period, however, there arose some severe social and economic problems, that is, the overpopulation and depopulation issues, the pollution issues and the recession by the first oil crisis in 1973.

The Third National General Development Plan was decided in 1977. The main concept of this plan was the "Teijyuken-Koso" (The Promoting Theory of Settlement especially in the local areas). The concept was made from the following point of view. Namely, since the latter half of the 1960s, as the population of Tohoku, especially young people continued to flow out from the Tohoku District into the Kanto Megalopolis, Japanese Government had to maintain the regional population as much as possible to avoid the inactive local activities. In order to realize this policy's aim the government has promoted some kinds of detail development policies transferring firms and capitals into the Tohoku District.

The main concept of The Forth National General Development Policy decided by the Cabinet in 1987 is the "Takyoku-Bunsan-Gata no Kunizukuri" (The Diversion of Leading Policy on the National
Development: from the Excessive Centralization Concept toward a Single Pole of the Kanto Region into the Multi-polarized Decentralization Concept). At present this national policy has been further promoted.

2. The Regional Responses in the Tohoku District

As I have mentioned above, it is not too much to say that so far the internationalization in Tohoku have not always been promoted actively in the every field. Since the latter of 1980's, however, the international trade of the Tohoku District has obviously changed, in particular in the exporting side. The largest reason was the diversion of the High-Tech industrial structure of the Tohoku District which was characterized by the High-Tech industries accumulating along the Tohoku Super Expressway, the Tohoku Shinkansen, the convenient access roads with the Expressway like the Route 13th (National Roads in Yamagata) and around the Air Ports.

So far in Japan the valuable information has not been gotten by the local governments and the affiliated companies, because in Japan only the central government and the head offices (companies) used to monopolize that information.

The other side, the social and cultural exchange with foreign countries was not made so much in Tohoku, and these international relationships were very few compared to other districts. It is just recently that common inhabitants have been able to go freely to foreign countries on the personal level. It is not too much to say that the newest information of the world has been monopolized by the privileged classes in Tohoku. That is to say, politicians, higher bureaucrats and professors kept the vital information to themselves. But nowadays, a lot of people come to go abroad sometimes because everybody could get their passports and visas more easily than before. Namely many people can get international information directly even in Tohoku. The people themselves in Tohoku have had a lot of concerns with the foreign countries.

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A Note on the Global Challenges and Local Regional Responses in the Tohoku District before the Collapse of the Bubble Economy

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This is a brief of "A Note on the Global Challenges and Local Regional Responses in the Tohoku District before the Collapse of the Bubble Economy." In this Note I would like to think about how the Tohoku District moved just before the collapse of Bubble Economy in the beginning of 1990's, that is, during the 20 years from 1970's to 1990's.

This Note is composed of the following five chapters. Chapter I is on Major Economic Indexes on the Tohoku District before the Collapse of Bubble Economy, Chapter II on The Changes of Infrastructure in the Tohoku District, Chapter III on Present Situation and Prospect of the Industrial Structure in the Tohoku District, Chapter IV on The Internationalization in the Tohoku District and Chapter V The Transition of Japanese Development Policy and the Regional Responses in the Tohoku District. In this Note I would like to emphasize the followings problems:

① Since the latter of 1970's the infrastructure network of the Tohoku District has considerably changed because of construction of the high-speed transportation system.

② Since 1980's the industrial structure in Tohoku has obviously changed from the pure agricultural region to the more industrialized and urbanized region.

③ Since 1976 the number of new factories constructed in Tohoku has increased year by year, especially in High-tech-related industries.

④ The working styles of farmers have basically changed from pure farmer type into that of the part-time farmer type to get a money outside of paddy farming.

⑤ In Japan the policy of local and regional development is basically prescribed by the National Development Policy (Zenkoku-Sogo-Kaihatu-Keikaku in Japanese).