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THE RESEARCH INSTITUTE FOR
ECONOMICS AND BUSINESS ADMINISTRATION
KOBE UNIVERSITY

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CONTENTS

REGIONAL DEVELOPMENT POLICIES OF JAPAN IN RECENT QUARTER OF THE TWENTIETH CENTURY

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I. Introduction

The regional development policies of Japan are now confronted with a serious situation and have reached a turning point not only due to environment conditions, natural resources, and urban problems, but also due to the problem-consciousness of the "limits of growth." The writer intends to look back at the characteristics and problems of the regional development policies of Japan in these twenty or thirty years after the Second World War.

The subject is to consider the following three points.

1. The recent quarter of this century can be divided to the following five periods from the view point of regional development.
   (1) The restoration period of the War damage — from 1945 (after the War) to 1950 (the Korean War)
   (2) The economic reconstruction period — from 1951 to 1955 (the time it recovered the prewar economic level)
   (3) The first period of economic growth — from 1956 to 1960
   (4) The period of the double national income increase policies from 1961 to 1970
   (5) The environment-conscious period (the reaction period to high economic growth) — from 1971 to the present
2. In the five periods, the regional development policies are to be investigated on the three levels: regional development, industrial location and urban problems.
3. A comparative research between the post-Second World War Japan, and England and America from the beginning of this century, with regard to their regional development policies and actual accomplishments. The subject to be studied here, is inter-connected with the above three view points.

II. The First Period (1945-1950)

For several years after the end of the War, the restoration of the War damage was the most urgent regional problem in Japan. In this period, the policies for

democratization, such as the dissolution of the "Zaibatsu," the agrarian reform, the legislation of several laws related to labour unions and so on, were enforced in succession by the Allied Forces with the establishment of a new Constitution (1946). At the same time, welfare policies which had been neglected before and during the War, were gradually put into reality on a minor scale. It was the time when most drastic changes took place in Japan. Some examples of the newly enacted laws for welfare policies, were the Livelihood Protection Law (1946), the Employment Security Law (1947), the Child Welfare Law (1948) and Disabled Persons Welfare Law (1950). In this period, important works on the regional level were the reconstruction of the damaged cities, and the settlement of the food shortage problems.

(1) Regional Development

Comprehensive regional development policies in original meaning of the term could not be adopted for a few years after the War, because one of the most urgent problems was to secure food for the whole population of almost one hundred million. Therefore, though the national land planning for reconstruction was tentatively set up, it had little effect. The development planning for food security and emigration of repatriates was framed and worked well to some extent, only in Hokkaido, the northern largest island of Japan.

(2) Urban Problems

As stated before, one of the most urgent problems after the War was the reconstruction of some one hundred War-damaged cities. The public reconstruction works were gradually carried out under severe economic conditions on the base of the Temporary Special City and Town Planning Act (1946). The larger part of the temporary reconstruction planning had been nearly completed by 1958, except for the six representative larger cities. But real state of the reconstruction works were on a low level from the view point of the original city planning. The reasons for this situation were not only the severe economic conditions after the War, but also unskillfulness in the realization of city planning, to which we will refer later. Rather good results have been obtained in road improvement and in creating green tracts in some cities. To this, we shall add here some formal comments. The Special City and Town Planning Act was abolished in 1954, because its function came to end. The original City and Town Planning Act had been established in 1919 and was revised wholly in 1968. Moreover, it must be added that the Local Self-government Act was established in 1948 for the development of democratic and efficient local government.

◎Regional Development in Anglo-American Countries during This Period(1945-1950)

Regional development, industrial location and urban problems in Anglo-American countries during this period are briefly compared to those in Japan as stated above, the writer admitting limited knowledge and information in this regard.

(1) The United Kingdom

The United Kingdom adopted regional policies for industrial decentralization soon after the War and enacted the Distribution of Industry Act of 1945. These policies were set up on the base of many experiences in development policies made already before the War. The Town and Country Planning Act of 1947 seems to have promoted the regional policies. These acts have restricted further plant locations in the highly industrialized districts, and encouraged new industrial plants to be built in other development districts by creating industrial estates in the northern part of England, Scotland and Wales.

Moreover, New Town projects were planned by the New Town Act of 1946. The New Town Development Corporations started to construct about twenty towns, respectively thirty or forty miles apart from the existing large cities. It is well-known that the New Towns of the United Kingdom were comprehensively planned to have industrial, residential and other functional urban areas, for preventing population increases in the existing large cities. These new towns having industrial and residential functions are different from the so-called "new towns" of Japan which are chiefly bed towns adjacent to existing large cities as we will demonstrate later.

It is very impressive for us Japanese that the regional development and new towns policies which were planned and started promptly after the War, were founded on the grave experiences made in the latter half century before the War.

The regional policies for industrial decentralization started with the Special Areas Act of 1934 which intended to decrease regional unemployment after the World Depression of the 1930's. The physical system of the industrial estates which was an important mean for industrial decentralization, began with the first attempt in Manchester in 1897. The attempt was an experimental mean to avoid the blame that industrialization had brought urban landuse disorder during the one hundred years since the industrial revolution. The New Town projects also sprang from the ideas and experiences of the Garden City Movement by Ebenezer Howard in the early part of this century.

(2) The United States of America

While the regional development problems were tackled on the nation-wide level only in the 1960's and the environmental pollution problems in the 1950's, the policies for these problems had already been put forward on the level of the State, Counties and Cities. The policies for air pollution in Pittsburg, and the control system of air pollution in Los Angeles County are some of the typical cases. Moreover, some urban renewal projects in principal cities had been started with the Housing Act of 1949 etc., in the same period. A comparison will be made later.

III. The Second Period (1951-1955) — Economic Reconstruction

The Japanese Economic White Paper of 1956 characterizes the year of 1955 in as far as the prewar economic level has been recovered. Therefore, the second part of this article is limited to the economic reconstruction period from the Korean War (1951) to the year of recovery (1955).

The General National Land Development Law was established in 1950. In the same year, the reform of the taxation system included the fixed property tax system by which the local governments could get the new revenue. The system allowed most local governments to attract rapidly and competitively new industrial plants. This period includes several years after the start of these regional policies.

(1) Regional Development

The General National Land Development Law of 1950 prescribes its object in Article I, that is, it aims to use, develop and conserve the whole national land comprehensively, and to realize a reasonable industrial distribution, taking into consideration from natural conditions, and to improve social-welfare, from the synthetic view point of economic, social and cultural policies. The Article II prescribes to set up the comprehensive planning on each level; the national, prefectural, local and special areas level. But in reality in this period, the planning was set up only on the special areas level, and not on the other levels.

As increase of food production, development of power resources, development of unused resources, and prevention of natural desasters in mountains and river districts were the most urgent works to undertake in economic reconstruction during this period, the development of the main river basin districts in the whole country was to be given preference in regional development policies. Accordingly, twenty-one main river basin districts were specified as Special Areas, and given successively a complete development planning, which was to be carried out with the assistance of the central and local governments. Besides, the primary whole

regional development planning was prepared for 1952 to 1957 in Hokkaido, laying emphasis on the food production increase.

Such form of the regional development focused on the water basins was not only aimed at a most efficient utilization of natural resources for maintaining the lives of nearly one hundred million people, but also stimulated by the idea of the TVA (Tennessee Valley Authority) which had been put into reality in the United States of America. The system of the TVA was introduced to Japan a few years after the War.

The TVA was established in 1933 for the development of the Tennessee basin, as one of the projects of the New Deal. It was one of the experiments of comprehensive planning of regional development. It had multi-goals; these included the development of power resources, dam building, river transportation, flood control, production of fertilizer, improvement of agri-business, forest conservation and social development of the relating districts. Some literatures on the TVA were introduced to Japan a few years after the War, and was fairly popular. Therefore, the idea of the TVA also seemed to promote the development planning with emphasis on river basins in Japan.

While the idea of the TVA is based on "Unification of Nature" and "Participation by People," and it aims at multi-goals, nevertheless, in our case, the regional development policies for Special Areas in main river basins seemed not always to succeed according to the real meaning of multi-goals. The multi-goals of the projects were hampered by the conventional vertical practice of administration. Development projects of water power generation were successively realized, but the many related projects in the basins remained insufficient.

(2) Industrial Location

As stated before, the fixed property tax was provided as one of the local taxes to give assistance to local governments of 1950. The movement by many local governments to attract new industrial plants became active after that, with encouragement policies through reduction or exemption of local taxes and providing plant sites etc. 32 prefectures and 243 cities had enacted regulations for industrial attraction at the beginning of 1956.

The central government, too, gave assistance for arranging industrial sites and related public facilities, based on the Law for Promotion of Industrial Rationalization (1952). In those days, "industrial location" which had attracted little interest before, was given unexpectedly attention. Accordingly, theoretical studies for the industrial location were undertaken in Japan by a few specialists, and some informations for industrial location could be obtained. A few scholars were engaged in the study of location problems under poor conditions.

In this period, the sites of the former munition factories and War-relocated factories of the War time, had the main industrial attraction in local districts. One of the representative cases is the iron works of Chiba city in the suburbs of Tokyo where in 1951, the forerunner of the new iron works located in three bays of the central industrial districts; Tokyo, Ise and Osaka Bay was founded. Some sites of the former military fuel factories were also considered as petro-chemical industrial complexes. The realization of the latter projects took place in the next period, 1955 and thereafter.

(3) Urban Development

The reconstruction works of the War-damaged cities were continued by the Temporary Special City and Town Planning Act in this period. It is interesting to note that in this period the government established some specified city construction acts for several cities in order to carry out their own future visions. They were the Construction Acts, of the Peace Memorial City of Hiroshima(1949), of the International Cultural City of Nagasaki (1949), of the International Port City of Yokohama, and Kobe (1950), of the International Cultural and Tourist City of Kyoto, and Nara (1950), and others. Each of them was enforced after a vote by the inhabitants. This was a characteristic phenomenon of the immediate postwar time, although its actual efficiency was questionable. In the later period of high economic growth, the vision of individuals of the city tended to be overlooked. It was only in the period of the environment-consciousness that importance was attached once again to the individuals of cities.

◎Regional Development in Anglo-American Countries during This Period

The writer intends here to make a comparative study of regional and urban problems in Anglo-American countries during this period (1951-1955).

(1) The United Kingdom

Regional and urban policies which had emerged in the latter half of the 1940's were gradually carried out by restricting the industrial location in the already highly industrial districts of the south of England and by the promotion of industrial decentralization to the depressed areas of the north of England, Scotland and Wales. Though it had been disputed that these regional policies to decrease the regional gap of the unemployment rate would be able to solve the internal social problems to any extent and that they might bring a lowering in the international competitiveness of industries, the actual experiences of these policies during several years seemed to prove that they did not always have the feared results. The regional policies changed the regional structure of dense

localization of certain industries to a relatively diversified structure. At the same time, the actual results promoted theoretical studies in the relation between management problems and location factors.

The construction of New Towns, including industrial estates, was continued in this period, and some results were obtained in the following period.

(2) The United States of America

In the 1950's, an enormous development of technological innovation changed the industrial structure of the United States of America. The technological development brought economic prosperity as well as severe unemployment. Unemployment appeared in the regional industrial structure. Regional unemployment was one of the foremost local problems in the ten years after 1950. In the U.S.A., unemployment problems used to be attacked on local levels; in state, city or community. Needless to say, it is a rule that the Federal Government avoids meddling in local problems. It was, however, in 1961, that the Federal Government challenged actually the local unemployment problems with a related law, as unemployment had become a national-wide problem. It was a kind of regional development policy on the national level.

Moreover, the construction of highways promoted not only rapidly the development of the suburbs in the metropolitan regions, but also brought depressed downtown districts. In this period, many planned industrial districts were developed in suburbs of the whole country, and they were called industrial parks. They were based on the attempts made in Chicago in 1905, which resembled the Manchester industrial estates of 1897, which we mentioned above. These attempts of managed estates for industry intended to attain multi-goals making it easy for industrial firms to select new suitable industrial sites, and for the communities to maintain good environmental conditions. Because the industrial revolution of the nineteenth century had brought a disordered landuse and an undesired community climate, and later industrial plants had gradually become unwelcome by the communities. The new type of planned industrial districts has improved their own quality and the environment, and had their own management in the U.S.A. and was a unique experiment of park-like planned industrial districts especially in Dallas, Texas in 1938. Such industrial parks developed rapidly nation-wide, in the 1960's. TVA, to which we referred above, was developed in this period.

IV. The Third Period (1956-1960) ——Restoration and Growth

Around 1955 when our economic conditions passed the prewar level, it entered a period of growth. National planning for regional development began to be

investigated, but the plans could not be carried out at that time, due to the conflicts between national, regional and local view points, and the conflicts among various functions of the administration. The first conclusion for a national regional planning was finally reached in 1962, in the following period.

(1) Regional Development

During this period, the regional development policies laid more emphasis on heavy and chemical industries in the coastal districts than on the development of the river basins as in the former period. The movement by local governments of attracting new industrial plants to local districts continued as actively as before. The arrangement of conditions for industrial location was promoted actively in the various coastal districts by the central and local governments. Various public works for industrial development started in this period, on the base of the newly established Water Works for Industry Act, the Principal Drive Way Construction Act, the National Expressway Act and other related acts.

Some acts for regional development of this period are the Capital Metropolitan Regional Act (1956), the Tōhoku (northeastern part) Development Act (1957), the Kyūshū (western large island) Development Act (1959), the Shikoku (middle-western island) Development Act (1960), the Chūgoku (western part) Development Act (1960), and the Hokuriku (norther part of middle districts) Development Act (1960). These acts aim at the planning of regional development projects and the promotion of their realization with the financial help of the central government.

Above all, the Tōhoku (northeastern part) region which is a forerunner for regional development planning, had been confronted with a serious depression by the world economic panic and the damage from cold weather in the early 1930's, and had already started a kind of development planning before the War.

During this period, the philosophy and policies for the regional development of Japan were in the conflict between economic efficiency in international competition, and the prevention of excessive concentration of industries and the promotion of their decentralization. For this reason the general national regional development planning could not be accomplished in this period.

(2) Industrial Location

The movement by many local governments of attracting new industrial plants had been competitively active since the former period. It led gradually to inefficiency of landuse and difficulties of local finances. The Ministry of International Trade and Industry of the Central Government began to provide nation-wide information for the industrial distribution and industrially suitable sites to prepare some control of industrial location. In 1959, new industrial locations

were restricted in the highly industrialized sections of the Capital Metropolitan Region. The Ministry of International Trade and Industry encouraged new plants to be located at specified sites based on the research for industrial location, avoiding as much as possible other sites. These policies were inspired by the experiences made by the United Kingdom.

The national research for suitable sites for industrial location during this period has brought some results and problems.

(a) It threw light to some extent, on the locational conditions of most of our land for industries through continuous research over the years.

(b) Though it supplied only information of the conditions for industries independent of the proprietorship of the sights, it has been one of the bases for the industrial location policies of the government.

(c) Most of the sites selected for these investigations were outside the districts concerning the City Planning Act, and no landuse planning had yet been undertaken. Therefore, the selection of suitable sites for industries was necessarily tentative and it had a little effect only on the competitive landuse between the manufacturing industry and agriculture.

(d) As the selection was based on the current needs and administrative feasibility, it was often contradictory to a long range expectation for regional development.

(e) Accordingly, the research for a suitable location of industry has not always brought the expected results, but it has been helpful in supplying information for industrial location, and has promoted the formulation of landuse planning.

(f) Moreover, the local governments, which had not well grasped the real conditions of their districts, were gradually able through the research to know them better. As the problems of landuse and urbanization have become more pressing since then, the Act for the research for suitable industrial location has gotten insufficient.

Actually, a remarkable industrial development during this period was achieved in the petroleum refining industry to which soon the petrochemical industry was added. These plants for petroleum refining developed in various former sites of national military fuel plants. The early petrochemical industrial complexes were developed on these coastal sites. Moreover, some new essential petrochemical industrial complexes were built on large new coastal sites.

(3) Urban Development

Urban development has been gradually achieved, but only in the large metropolitan regions. Some projects for urban renewal and suburban develop-

ment for housing were carried out. On the one hand, smaller projects for urban renewal at station plazas and in shopping streets were planned and experimented with by readjusting town lots. On the other hand, new residential sections on a small scale were planned and experimented with in suburban districts of larger cities by the Japan Housing Corporation and the local public corporations.

Aside from these, the first major project for a big new suburban residential town was undertaken, namely the Senri New Town, by the prefectural government of Osaka. Though it was called "New Town," it is very different compared to the "New Towns" of the United Kingdom. While the latter are multi-functional (residential and industrial) satellite towns, independent of the large cities as mentioned above, the former has only a residential function and is a larger sized town, having a population of 200 or 300 thousand. This experimental project of Osaka brought the new Act of development of residential town in 1963 and new residential towns of the same type were constructed thereafter in the suburbs of Tokyo and Nagoya as well as in Osaka.

In this period (1956-1960), the problems of urbanization were to some extent challenged seriously in Japan, but confined to the large metropolitan regions and these projects of development and renewal have tended to be planned mono-functionally. The idea of "industrial estates" or "industrial parks" as in Anglo-American countries also has been introduced to Japan in this period, and some projects have been carried out, but they have been corrupted to mono-functional systems, ignoring multi-goals.

◎Regional Development in Anglo-American Countries in this period (1956-1960)

(1) The United Kingdom

The progress of the ten years of regional development policies since the end of the War, had such effects as a relative decrease of unemployment rates and the introduction of new kinds of industries to the depressed areas. The policies have become more flexible and applied also to less depressed districts. Therefore, the Development Areas which had been specified by the Distribution of Industry Act of 1945, included now smaller Development Districts due to the new Local Employment Act of 1960. At the same time, the kinds of industries were enlarged to include not only industrial plants but also offices and warehouses.

Three Industrial Estates Management Corporations were established in England, Scotland and Wales, to manage more efficiently industrial estates, which had been the base for the diversified industrial structure in depressed areas.

The experimental projects of flatted factories for small business in downtown districts were completed in 1960 in the central district of Birmingham, be-

cause there were not a few small businesses which could not move from the central districts to the industrial estates of suburban districts.

Some New Towns were approaching completion. Queen Elizabeth II visited Stevenage, one of the New Towns in April, 1959. Though it could not be answered at this time, whether the project would be able to prevent the concentration of the population of Greater London, the building of New Towns themselves seemed to be a success.

(2) The United States of America

It was in 1961, that serious problems of regional unemployment due to technological innovation were first challenged by the Federal Government, as stated above. In that period (1956-1960), the construction of industrial parks was remarkably active and their number amounted to 1,000 or over in the whole country by 1960. Their sponsors were of real estate companies, railway companies and community bodies such as chambers of commerce and local governments. The industrial parks in the United States of America include not only industrial plants, but also warehouses, shops and business offices. So to speak, they are a kind of industrial communities. Moreover, some of industrial parks, chiefly consisted of research firms, so-called research parks, which were found in the principal cities especially in the 1950's.

In the latter half of the 1950's, when many projects of urban renewal and construction of express ways were carried out, effects and side effects began to be investigated, their merits and demerits. This is equivalent to the now so-called assessment of projects. In these assessments importance was attached to the problems of smaller businesses.

V. The Fourth Period (1961-1965) ——from the Period of High Economic Growth to the Period of Reconsideration

The ten years of national planning to double the national income began in 1961. The actual national planning for the regional development was formulated in 1962. An enormous economic growth was realized, but the result was not always satisfactory from the view point of regional development and moreover in 1965 and later, the economic growth brought undesired environmental problems. The regional development policies had soon to be reexamined.

(1) Regional Development

After many years of discussions about the development philosophy and policies on central and local levels, since the latter half of the 1950's, the na-

tional planning of regional development was formulated in 1962.

It aimed at preventing the excessive economic concentration in a few central districts and at decreasing the regional income gap in the local districts. In order to attain these aims, the public investment policy intended not to adapt the all round principle, but gave the priority to a few new industrial development districts aside from three central industrial districts. To enforce these policies, some acts were established between 1962 and 1964. They were the Act to promote the construction of new industrial districts, the Act to promote industrialization of poorly developed districts, the temporary development Act of coal-mining areas and some other related acts. The policy of designation of new industrial districts stimulated most local prefectural governments to request that their own districts should be given priority, though at first only a few districts had been expected to get the designation. All except one of the designated districts for new industrial development, were in coastal regions, and expected to develop heavy and chemical industries.

In these new districts the whole industrial development planning was carefully formulated, but its realization lasting several years, has not always brought the desired results.

(a) Each designated region attained the aimed growth rate of industrialization, but not all were able to increase rate of their population.

(b) The rate of economic growth of the whole country was higher than that of the designated districts. Therefore, it is obvious that industrial activities are relatively concentrated in the already existing central districts.

(c) A remarkable unbalance of industrial development was found in twenty new industrial development districts.

As the result, the policies were reexamined in about 1965. The interim report of the committee for the reexamination of the Economic Planning Agency indicated some problems.

(a) The concept of the regional income gap was the base of these development policies. But the real problems were not merely the regional income gap, but essentially the regional gap of living conditions. The problem was not a fundamentally statistic gap, but concerned regional actual conditions. The statistics was somehow a reflection of the real conditions, but they were only a key to deeper problems. However, the regional development policies aimed at decreasing directly the statistic gap, and so big projects such as the iron or petrochemical industrial complex in the coastal areas were meant to attain these aims. These policies seemed to succeed in a few districts, but they could not be adapted well to the others. They led not only to the economic concentration in the existing central districts, but also to the gradual increase of the environment problems.

(b) As the policies adhered to the statistical gap rather than to the real problems with which each district was confronted, a uniform pattern of regional development was apt to be applied, and individuality or real problems tended to be overlooked.

(c) The relations between the nationally expected industrial location and the decision-making of industrial locations by individual industrial firms were theoretically and realistically not understood well.

(d) Though the regional statistical gap was one of the problem-consciousness approaches in Japan, it was less serious than the regional unemployment problems in Anglo-American countries as we have stated above. The extent of the severity of regional problems characterized the policies and their realizations.

(e) The development policies of the new industrial districts aimed to promote their projects through respective well-planned urbanization. But actually the industrial development tended to precede a comprehensive planning including social and physical development.

(2) Industrial Location

In the first half of the 1960's, heavy and chemical industries developed on the reclaimed land of the coastal industrial districts; namely three central coastal bay areas of Tokyo Bay, Ise Bay and Osaka Bay, and Pacific belt coastal areas linking the three Bays. However, high-added-value industries such as the electronic and electric machinery industries developed chiefly in the surrounding districts of the three central industrial districts, especially the metropolitan regions. They are related to the phenomenon of so-called doughnut-like urbanization. These regional patterns of industrial development were characteristic in Japan and were reexamined in about 1965.

From the view point of industrial location of Japanese industries, the locational patterns are of two types. One includes the foot-tight industries such as the iron and petrochemical, chemical and other heavy raw-material oriented industries, and the other type includes the foot-loose industries such as engineering, electronic and other high-added-value industries. The first type tends to locate in coastal districts, conveniently situated, and is found in both the central and rural districts, several of which were designated as new industrial development districts. The second type is found chiefly in the surroundings of central districts. This type is to be generally found in various districts, and called foot-loose due to the characteristic of high-added-value. However, in this country, this is not so. It seems to be one of principal reasons why the regional income gap could not be decreased through industrial development policies, while the so-called foot-tight industries contributed to decrease the regional gap, more or less. Why

were these foot-loose industries located near the central districts and not in distant rural districts? It seems to be related to an environmental and historical pecuriality in Japan and a characteristic business feature of Japanese industrial firms. The writer thinks that the way to solve this problem needs not only the recognition by policy makers of the real business features in individual industrial location, but also the decision makers to change the existing business feature in order to prevent an excessive industrial concentration.

The development of the heavy and chemical industries in the coastal districts rose the level of the low-income regions, but it could not realize some other expectations as we shall see.

(a) The expectation for increasing local employment could rarely be realized, because these new apparatus industries did not need local employment to the extent it was expected.

(b) The same reason applies to the allied industries. The heavy industries attracted not as many allied industrial plants as expected. Fundamentally, the forward integration of the basic industries does not bring as many allied industries as the backward integration of the assembly industries. Moreover these foot-tight industries brought the new environmental problems to the rural districts.

(c) Urban development

The urban problems had not been given much attention in the policy making for regional development in Japan. Due to the severe conditions after the War, the priority was accorded to the macroscopic standpoint in regional development. In addition, technology and knowhow of urban development had been introduced to some degree in Japan before and after the War, but our country had fewer urban problems than the European and American countries, where they appeared already at the beginning of this century.

Urban problems surfaced gradually and some projects related to urban renewal were tried in part, but they were limited to the central metropolitan regions. Moreover, they were challenged rather mono-functionally, while these problems were essentially multi-functional and needed a highly systematic approach.

(a) The National Planning of Regional Development (1962) aimed to develop new industrial development districts aside from the existing central industrial districts including the planning of urbanization of these new districts. But in fact, industrial development only was emphasized and the planned urbanization was overlooked. In other words, industrial development preceded social development and thus both of them were not fully synthesized in physical projects. It might be perhaps inevitable under the environment conditions of that time and due to inexperience.

(b) Some projects of urban renewal and suburban development were undertaken in the central metropolitan regions, though they were rather mono-functional projects. Since the beginning of 1955, urban renewal was carried out, based on the already existing act of readjustment of town lots, and a new act for urban redevelopment was established in 1961, based on these experiments. Project of redevelopment in station districts and shopping areas in the principal big cities as Tokyo, Osaka and Kobe were carried out and, in the suburbs of Tokyo, Osaka and Nagoya, mono-functional towns as "bedroom towns" or residential towns were built. These test projects served as models for other bedroom towns.

(c) A considerable number of industrial and commercial estates were planned and realized one after the other. These were two types. One included estates as physical means for the cooperation of small businesses, and the other estates for reasonable landuse of industries. The first type consisted chiefly of the same kind of industries and the second of different kinds of industries. Both were mutually related with each other, but they had distinct purposes. Especially the industrial estates for the cooperation of small businesses were some of the unique Japanese projects. They began in 1961 and are still built now. The industrial estates aimed originally to realize the coexistence of industry and community through physical projects and achieved this to some extent, but they were apt to incline to whether economic side or physical side in Japan. Moreover, the projects of the second type lacked the management bodies of the estates in most cases, another problem of the industrial estate.

(d) A multi-functional approach or interdisciplinary approach to urban and suburban problems was gradually promoted in this period. One of the stimulations for this approach was the joint study of the team of the United Nations and Japan in the Hanshin (Osaka-Kobe) region in 1960 and 1962. This cooperation stimulated not only the systems approach for urban and suburban problems, but also it was helpful to advance regional development in the metropolitan regions.

In the lapse of several years in this period, multi-functional physical systems for urban problems were developed where the macroscopic standpoint was given priority in regional development and the urban and suburban problems were apt to be overlooked, even if the systems approach was still insufficient.

◎Regional Development in Anglo-American Countries in This Period (1961-1965)

(1) The United Kingdom

After the War, regional development policies were established by the government of the Labour Party and handed over to the Conservatives in 1951, and

then taken over again by the Labour Party between 1964 and 1970. However, it seems to the writer that these regional policies were revised rather according to the changes in environment than according to the policy difference of the two parties.

In 1964, the government of the Labour Party reexamined the regional policies and established in 1966 the Industrial Development Act, which aimed at a more reasonable distribution of industries rather than to overcome the regional unemployment which had been the principal problem before. Accordingly the Act designated a greater number of small areas as Development Areas, in place of the Development Districts of the former Act. Because, in the middle of the 1960's, industrial activities had grown in the United Kingdom, and yet the technology gap between England and America brought the international competition, and so international aspect was needed more than national social aspect in the regional development policies.

(2) The United States of America

In Japan, so-called knowledge-intensive industries or research and development industries had attached the interest of the public administration and the industrial world since 1970. Prior to it, in the United States of America, industrial development policies in the principal metropolitan regions had begun to be oriented to R & D around 1960, and then in 1965, the concept of science-based industries replaced that of the R & D industries. Of course, this development was related to the space development projects of the Federal Government. However, civilian industries also had been research-and-development oriented, or information oriented. It was related to the problems of the technology gap between the U.S.A. and the European countries.

The allied industries of the space development projects have gradually begun to contribute to the urban problems, since the Federal Government began to decrease the financial expenditure of the space development projects in the second half of the 1960's. Just at that time, the heavy and chemical industries were interested in the regional development policies of Japan.

VI. The Fifth Period (1966-1975) — Reconsideration Era

Beginning with the year 1965, the Government felt the need to reconsider its national regional development plan, due to the discrepancy of the plan and the actual conditions. As the result, the new national regional development plan was established in 1969.

However, the continuous occurrence of the environmental problems required

a more fundamental reconsideration for regional development, at the turning point of EXPO'70 (1970).

Internationally, environmental pollution and urbanization, as the side effects of the high economic growth over many years, were the focus problems in the industrialized countries. There were more serious problems in Japan, since our land was not only small and mountainous, but also our country had less experience in challenging the environmental and urban problems.

(1) Regional Development

The New National Regional Development Plan was made in 1969 by reconsidering the old plan. It aimed to rearrange the national landuse in order to overcome the regional problems of unbalance between excessive concentration and extremely low density of population, through a new national network of transportation. The principal characteristics of the plan are the following:

(a) The new plan attached more importance to the problems of urbanization than to the orientation for the development of heavy and chemical industries. Therefore, the functions of the nerve center for decision making and information and physical distribution in the metropolitan regions occupied the core place in the regional development policies.

(b) The regional real living conditions were the main point in the policy making, while the statistical regional economic income index had been the starting point of the old plan.

(c) The network of transportation and communication was set as the key to overcome the problems of excessive concentration and extremely the low density of population.

(d) As the coastal heavy and chemical industries had brought severer environmental pollution problems than the inland industries according to the old planning, the former types of industries were planned to be located in a countryside districts on a larger scale, but with greater environment consciousness. The so-called foot-loose industries, that is inland and urban types of industries, were planned to be located in more remote districts from the central metropolitan regions, by the improvement of locational conditions.

These changes in the national regional development policies mean, as for the writer, that the problem-consciousness of urbanization and the standpoint of the local community had more weight now in regional development than the national landuse. This view point seems to have been relatively neglected in Japan before.

In this period, several laws for industrial location and relocation were established to promote the regional development. In urban districts, a new act

was legislated for industrial plants to relocate to suburban or countryside districts in 1972. For that purpose, removal-promoted districts in the urban districts, and induce-promoted districts in the rural districts were specified respectively. In rural districts, a new act was legislated in 1971 so that new industrial plants should be built in agricultural districts for preventing the decrease of their population. Since 1973, the new industrial plants have been obliged to maintain a certain percentage of green tracts on their site and set up facilities for maintaining a good environment.

These plans and their realization brought the new difficult problems of the 1970's. A new concept for regional development was published in 1971 under the title "Nihon Rettō Kaizōron" (Remodeling the Japanese Islands) by Prime Minister Tanaka of the then cabinet. It intended to promote the new national regional development plan, but it had literally reverse and undesired consequences by stimulating speculative land buying. At the time of the dollar shock caused by President Nixon in the summer, 1971, unproper national financial policies also contributed to these consequences.

These policies had to be changed drastically not only because of the increasingly severe environmental problems, but also because of the international energy and natural resources problems caused by the Fourth Middle East War in October, 1973. The national regional development policies were now re-examined.

(2) Environmental Problems

Environmental problems have come to the surface in Japan since EXPO'70. The Fundamental Law for Environmental Pollution Control was established in 1967, but at the end of 1970, when the Law was basically revised, became the starting point for essential policies for environmental problems. The development of environmental problems and policies, traced back to the end of the War, is briefly shown in the following:

(a) For several years after the end of the War, the policies for environmental pollution (chiefly air pollution) had been taken on the level of local public administrations, since pollution was limited at that time, chiefly to the central industrial districts. For example, prefectural and municipal ordinances were legislated in the Metropolis of Tokyo (1949), in Osaka Prefecture (1950), in Kanagawa Prefecture (1951), and then in some of the suburban cities in the 1950's.

(b) On the national level, laws for water pollution control were legislated in 1958. They were prompted by incidents in a certain river of Tokyo which seriously damaged the activities of the fishing industry. A law for air pollution also

was enforced in 1962, necessarily because of high industrial growth.

(c) The Fundamental Law for Environmental Pollution Control was established in 1967. The Law defined the philosophy for preventing environmental pollution, the responsibilities by the parties concerned, the criteria for pollution control, expense bearing and conflict treatment. These activities of the government were promoted by the expanding environmental pollution not only in central industrial districts but also in rural industrial districts.

(d) At the same time, the United Nations proposed an international conference for global environmental pollution problems and the Secretary General published in 1969 a report on the human crisis caused by environmental pollution. The conference took place in June, 1972 and attended by many countries. In Japan, the Fundamental Law for Environmental Pollution Control was basically revised in December 1970, at the extra session of the Diet. One of the most important revised points was that "balance of the sound economic development and the preservation of healthy environment for human lives" was replaced by "priority of the preservation of healthy environment for human lives." Moreover, it provided that the expenses for preventing pollution should be borne by the industrial firms responsible for pollution. It regulated the punishment for the crime of health injury by environmental pollution, and the responsibility for the disposal of industrial wastes. These policies were promoted by several cases of severe pollution diseases such as the Minamata disease, the Itai-itai disease, and the Yokkaichi asthma. The Agency of Environment was established by the Government in 1971. These problems of environmental pollution are closely related to industrial location and urban development.

(3) Industrial Location

In the 1970's, the problems of industrial location and industrial distribution related to the national regional development concentrated on the problems of industrial structure, because of international consideration of industrial specialization, and internal consideration of environmental problems.

In the 1950's, the policies of regional development in the United States were already much concerned with research and development industries or science-based industries. Now, in Japan, these industries became an important subject in development policies. They have been generally called "knowledge-intensive industries" in Japan.

(a) "Knowledge-intensive industries" have been given importance in regional development in the 1970's, while coastal heavy and chemical industries constituted the core of regional policies in the 1960's. It is a striking contrast by the changes of the inside and outside environment.

The committee in the Ministry of International Trade and Industry for the industrial structure suggested in May, 1971 that "knowledge-intensive industries" consisted of research and development, high-assembly, fashion and information industries, and that income elasticity, productivity, natural environment, and work environment were experimental criterions of judgement for the desired industries in regional development.

The concept of the knowledge-intensive industries is not clear, but it seems to suggest the way of the future industrial structure. It is at present an important problem, how to realize the reorganization from the current industrial structure to the future type.

(b) The way to realize the desired landuse in industrial location seems to be the type of industrial estate or industrial park as in American and European countries. In the 1960's, industrial location in Japan also has often this type. Some industrial estates promoted by local governments were called industrial "parks" aiming at a good inside and outside environment. But the realization has been difficult till now, because industrial parks are expensive to maintain, they need considerable space of green tracts of land, and the ownership of individual industrial firms in estates is regarded as a obstacle for the management and control. However, conditions have been changed by serious environmental pollution problems. Maintaining a certain percentage of a green tracts of land is compulsory by law now during the high economic growth period. Severe environmental problems have obliged to individual firms to cooperate in order to maintain good environment.

(4) Urban Development

The national policies of regional development had been more interested in land as a whole, than in urban development and the local community. It seemed to be right, but brought some important problems, because Japan has had less experience in urban and community problems before this national planning. In this period, urban and community problems were gradually given importance, nationally and regionally.

In 1969, the Local Self-government Act (1947) was revised and the local governments were obliged to formulate their own basic visions and then to make their fundamental plans and action programs.

In 1968, the new city planning act also was established in place of the old act (1919). In the act, authority to formulate city planning was transfered from the central government to the local governments. In its execution, urban, suburban and surrounding areas were divided into three sections; the urban section, the non-urbanizing section and the non-designated section. The non-urbanizing sec-

tion means not to be newly urbanized for industrial and residential use for the time being. It aims to prevent disorderly landuse.

This legislation and orientention was prompted by actual environment. Realization of the regional development policies has caused many direct and indirect side effects and various urban problems; such as engine exhaust on expressways, noise, various other environmental problems at airports, lack of sunshine because of high buildings, etc.

This period is characterized by the fact that the local self-government bodies, especially municipalities, began to challenge these problems actively.

(5) Current and Future Problems

The above-mentioned is chiefly limited to the history before the outbreak of the Fourth Middle East War. The environmental conditions have suddenly changed after October, 1973. Natural resources and energy have become the focus of world problems. High economic growth seems to be replaced by low growth. Under these conditions, the expenses to solve environmental pollution problems have to be borne by industrial development. Moreover, national and local welfare policies must be given priority in regional development planning.

The regional development policies which have been reconsidered since the second half of the 1960's, have to be reexamined once more in middle of 1970's owing to these environmental changes. These problems are to be studied in the near future.

VII. Characteristics of Regional Development in Japan in Recent Quarter of the Twentieth Century

The above-mentioned progress in regional development, industrial location and urban development in Japan in recent quarter of the twentieth century, compared with Anglo-American countries, can be summarized to the following characteristics:

(a) In the three-quarters of this century, the England and America were confronted with various urban problems in their industrial development for the first time and had some experiences of a systems approach of these problems and then were gradually compelled to challenge a wider range problems of regional development since the World Depression, and again after the Second World War, they had to solve new regional and urban problems owing to technology innovation on both the national and local level. In contrast to them, Japan was confronted, first of all, with national problems to reconstruct the economic conditions for one hundred million population in the War-damaged land

after the War. Therefore, regional development problems were needed priority over urban or local problems with few experience of a real integrated physical systems approach. As the result, planning techniques advanced considerably in regional development, but their realization was often hampered by less experi ence in urban and local problems and lacked full consideration for them. In the last ten years, Japan has tried to solve the local and urban problems.

(b) Several new systems such as the planned multi-considered physical system or multi-purpose and multi-functional physical system have been created in process of regional and urban development in England and America in this century. These new systems have been introduced and applied in Japan, through rearrangement for the national conditions.

In some cases, some unique systems have been developed in Japan, based on these foreign systems. However, they tended to become often mono-functional systems, in spite of the original multi-purpose, and had less effects to regional or urban problems. The cause is less experience in the past in challenging urban and local community problems, not only on the level of public administration, but also in the business world.

(c) In Japan, the planning technique to synthesize regional development policies has considerably progressed through repetitive experiences in this quarter of the century, but the techniques of integration into action programs and their realization are not yet satisfactory due to less experience on the urban and local levels. Since about 1955, econometric analysis and the related techniques have contributed to regional development planning, especially comprehensive and integrated planning, but the actual systems approach for the realization of these plannings, including the grasp of real facts and the extraction of actual problems, is not yet developed as much as the planning level.

(d) Recently, urban development and the local community have been paid more attention in regional development policies. At least, these problems have been accepted in the regions around the major cities. Experiences in systems approaches for these problems have been gradually developed.

(e) Development and redevelopment in cities and towns in the local districts have become important current problems, as for these several years experiences in the central metropolitan regions have been acquired.

(f) Necessarily, the future industrial structure of Japan must be visualized in relation to the changing policies of regional and urban development.

These new problems in regional development must be challenged now, in spite of the current severe recession which set in last year.

NATIONAL INCOME AND EXPENDITURE AT FACTOR COST IN JAPAN 1955-1970: A MACRO-ACCOUNTING FOR GROWING ECONOMY

Nobuko NOSSE

I. Introduction

The rate of economic growth of the Japanese economy in 1955-1970 is extremely high, it is about 10 percent in the average and thus higher than at any time in the past history of Japan and also higher than in any Western country for the corresponding years. How the economic forces worked together in these years is, thanks to the recent improvements made in Social Accounting, well illustrated by the set of key-accounting figures, such as GDP, Investment, and Personal Savings, etc. Here we intend to show a set of the key-accounting figures arranged in macro-accounts for every five years, i.e., 1955, 1960, 1965 and 1970. Some figures are calculated on a dual basis, i.e., on the market price basis and the factor cost basis in order to trace all sorts of transfers. And for the sake of inter-temporal comparison, all accounting figures are revalued to a near basis of the 1970 yen. Finally, we intend to compare some accounting ratios derived from their key-accounting figures in some Western countries in the 1955-1970 period with the ratios in Japan for the corresponding years. Both comparisons, the intertemporal and the inter-national, will give us an idea of the aspects of the income and outlay of the household sector and of the general government which is the real counterpart of the aspects of the company sector with its very rapid accumulation in Japan during growing years.

II. A Set of Macro-Accounts for Comparing Purpose

Before analysing the economic picture of 1955-1970, we must first build up a set of macro-accounts for depicting the circulating flow of the factor income share created in the production sphere in the nation as a whole, its transformation through distribution, redistribution by transfers, consumption in the successive income appropriation sphere and savings and investment in the accumulation sphere. The most ideal set of accounts for this purpose is, as we know, a fully articulated and sectored three-accounts system. The present statistical data in the national accounting field in Japan, however, makes it difficult to use fully such

a system of accounts. The Japanese National Accounts[1] on which we have to rely as a main source of statistical materials in this paper provide only an articulated set of non-sectored macro-accounts with supporting detailed information classified on a dual point of view, i.e., the point along the line of income categories and the point along the line of institutional categories. In these two types of classification there is no consistency and their accounting items in each have no correspondence. Because this limitation, our key-accounting figures in the Production Account and the Income Account are classified under the income categories such as wages, mixed income, etc., while the key-accounting figures in our Income and Outlay Account and Saving and Investment Account are classified under the institutional categories such as personal consumption and company investment, etc. These accounting figures, therefore, not to be arranged in the fully sectored three-accounts system, but only in a series of simpler tables where the key-figures are tidely arranged but some of them having loose ends.

We must mention here farther two things. One concerns the Statistical Discrepancy, the discrepancy between the figures calculated by the Output Method and those by the Income Method. As our analysis intends to draw the picture of the whole transaction flow from the income side, we deduct (or add) this item from (or to) the figures of the fixed asset formation calculated by the Output Method. The other concerns the valuation problems, far more important, but difficult to treat. As our object is to analyse the structure of real resources created and of the allocation between final destinations, the factor cost basis must preferably be used. The published National Accounts figures, however, have never provide the figures for the expenditure items on the factor cost basis nor the sectored indirect taxes. Thus in this paper we must introduce a device for separating net indirect taxes[2] for every expenditure category in each sector. After that the flows of expenditures are shown on dual basis, i.e., at the market price and the factor cost respectively. Then a last snag has to be overcome. Leaving the problem of insufficient information which becomes serious in the international comparison, the big snag comes from the value of money during the years 1955-1970. There had been rises of prices and wages during these years. The rise of the former was less than double and that of the latter was four times. Also, there had been an about 8 times increase of national income during 1955 and 1970 while national income in 1970 is $4\frac{1}{2}$ times of national

(1) Economic Planning Agency, *Annual Report on National Income Statistics*, 1972 edition. The 1955-1960 figures are estimated from the *Revised Report on National Income Statistics* (1951-1967) by Econonomic Planning Agency. In this paper we call these reports as 'National Accounts' as an abbreviation.

(2) My estimation on sectoring indirect taxes has not allowed to calculate indirect taxes and subsidies separately yet, but only their netted amounts, i.e., the indirect taxes minus subsidies.

income in 1960 and $2\frac{1}{4}$ of that in 1965.[3] To overcome the snag in the way of inter-temporal comparison, we decide to introduce an accounting ratio for adjustment, the ratio of national income in the base year divided by national income in the comparative year. According to this method originated by Prof. Hicks,[4] all Key-accounting figures in the 1955-1970 is to be multiplied by national income ratio, for instance, figures in 1955 must be multiplied by 8, as shown above and for the figure of 1960 they must be multiplied by $4\frac{1}{2}$, the ratio shown above and those of 1965, must be multiplied by $2\frac{1}{4}$.

This macro-accounts system measured on the dual basis is our tool for comparison work and shall be used in the following sections.

III. Inter-Temporal Comparison of Key-Accounting Figures in 1955-1970

Following our device of the comparative three-accounts systems shown in the previous section, first of all we are making a comparison for the 1955-1970 period. The figures of 1955, 1960 and 1965 in the tables are arranged by multiplying them with 8, $4\frac{1}{2}$, and $2\frac{1}{4}$ respectively in order to compare them with those of 1970 and in this paper we call them as 'figures arranged in 1970 yens'.

Table 1 shown below indicates the key-accounting figures in th Production Accounts in '1970 yens.'

Labour Balance (Japan, 1955 and 1970)

(thousand)

	Total	Self Employed and Family Workers	Employees
1955	39,154 (100%)	21,325 (54.5%)	17,829 (45.5%)
1970	52,042 (100%)	18,490 (35.5%)	33,540 (64.5%)

Table. 1: National Output and its Factor Income Shares in Japan

in 1970 yens
¥H

	1955	1960	1965	1970
Wages and Salaries	283	290	322	311
Mixed Incomes	211	153	135	113
Operating Surplus of the Company Sector	68	125	113	142
Operating Surplus of the General Government Sector	$4\frac{1}{2}$	$9\frac{1}{5}$	$4\frac{2}{3}$	7

The table shows the factor·income shares of the Japanese net domestic product for every five years. In the table a rise of the wage income is accompanied by a big fall of the mixed income. The former increases during 1955-1970 by 28, while the latter drops by 98, a bigger change than for the former. The contradictional movements of the two income shares are the result of the Japanese economic growth in those years and we find corresponding data in some labour statistics[5] where the increase of wage earners and the decrease of independent producers emerge as shown below. On the other hand, the operating surplus of profits of the company sector, after a temporal fall in 1965, records a big rise and the surplus in 1970 is higher by 74 than that in 1955 while the surplus of the general government sector shows a slight rise of $2\frac{1}{2}$ as a result of the gradual expansion of its activity in 1955-1970.

Next, we must look how changes occured in the income shares during these years. Table 2, shown below, indicates the incomes received by individual persons or the household sector, companies or the company sector and central and local governments and public undertakings or the general government sector. The figures in the Table 2 are before taxes and arranged in 1970 yens. As for the household sector, incomes are classified into wage incomes, mixed incomes, interest, dividends and rents. The former two have been shown in the Table 1 and need no further explanation while the latter three, which I take al-

Table 2: Composition of National Income (before tax)

in 1970 yens
¥H

	1955	1960	1965	1970
Wage Income	283	290	$322\frac{2}{3}$	311
Mixed Income	211	153	135	113
Interest, Dividends and Rents	37	55	$65\frac{1}{3}$	65
Undistributed Profit in Company Sector	37	$72\frac{1}{5}$	50	80
Net Public Income	$\frac{2}{3}$	$6\frac{1}{3}$	$2\frac{1}{3}$	3

(3) The figures of the Japanese national income in 1955, 1960, 1965 and 1970 are ¥7,112.6 billion, ¥12,816.5 billion, ¥25,537.6 billion and ¥57,173.7 billion respectively. National Accounts, op. cit.
We obtain these 8, $4\frac{1}{2}$ and $2\frac{1}{2}$ by dividing the figure of the national income of 1970 by that of 1955, 1960 and of 1965.

(4) J. R. Hicks, *The Social Framework*, 4th ed. 1971, Chap. 19 and Appendix G.

(5) Source: Bureau of Statistics, Office of the Prime Minister, Japan, 1955 and 1970 *Population Census of Japan, Prompt Report*, Vol. 2, Part 2, p. 66, p. 61 and p. 120 respectively.

together into one 'interest etc.' group, are new items. There are new income categories too — companies' undistributed profits and public income which are residuals of operation surpluses of them.

It will be seen that the income of 'interest etc.' rose continuousely in the years under review and in 1970 it recorded 28 higher than in 1955. Undistributed profits and public incomes show some oscilation in the intermittent years and at the end year of 1970, the former recorded a considerable rise — a rise by 43 compared with its 1955 level — and the latter show far less increase — a rise by $2\frac{1}{3}$ compared with its 1955 level. This situation shows that even after 'interest etc.' payment, most profits originating in the production sphere, still have been carried over to the income sphere.

Then we look at the redistribution in Table 3 below. Here we take all taxes directly imposed, i.e., income tax, property tax, local taxes directly imposed, corporation tax, fees and contributions for social insurance to the general government, into one 'direct taxes'. Among this 'direct taxes', those imposed on household, after falling in 1960, increase again, and in 1970, the end of the years under review, they are higher by 12 than the taxes of 1955 while those imposed on companies are, after fluctuating in the intermittent years, higher by 30 than their 1955 level. The increase of corporation tax was bigger than the increase of the income tax imposed on household. The resulting increase is shown in the rise of the government sector's receipts from $40\frac{2}{3}$ to 67.

Table 3: Redistribution of National Income

in 1970 yens
¥H

	1955	1960	1965	1970
Wages & Salaries	283	290	$322\frac{2}{3}$	311
Mixed Income and Interest, Dividends & Rents	248 } −50=481	208 } $-44\frac{1}{2}=453\frac{1}{2}$	$200\frac{1}{3}$ } −61=461	178 } −62=427
Transfer Incomes	0+29=29	$0+26\frac{1}{3}=26\frac{1}{3}$	0+32=32	0+30=30
Undistributed Company Income	37−19=18	$72\frac{1}{5}-29\frac{1}{5}=43$	$50-28\frac{1}{2}=21\frac{1}{2}$	80−32=48
Public Income	$\frac{2}{3}+40=40\frac{2}{3}$	$6\frac{1}{3}+47\frac{2}{5}=53\frac{2}{3}$	$2\frac{1}{3}+58=60\frac{1}{3}$	3+64=67

As a corollary of Table 2, we can make an Income and Outlay Account for the Household Sector. Table 4 indicates that personal income expanded in 1965 but fell to 489 in 1970, and the income in 1970 was lower by 42 than that in 1955. The transfer income from the general government sector recorded only a slim increase by 1, thus the Household Sector's receipts after the transfer in-

come fell by 41. As for the outlay side, direct taxes in 1970 yens have been increasing after 1965 and the personal consumption in the 1970's have been decreasing through the years.

Table 4. Income and Outlay Account for Personal Sector at Market Price

in 1970 yens
¥H

	1955	1960	1965	1970
Personal Income before tax	531	498	523	489
Transfer Income	29	$26\frac{1}{3}$	32	30
	560	524	555	519
Direct Taxes	50	$44\frac{1}{2}$	61	62
Disposable Income at Market Price	510	$479\frac{5}{6}$	494	457
Consumption at Market Price	442	396	407	363
Savings	68	84	86	95

The fall of personal consumption—notice here that this item is measured at the market price because the indirect taxes have not been deducted yet — during amounts to 79 and personal savings show a rise over the years. Here we show the indirect taxes imposed on the personal consumption and all the other items. The sectoring of the indirect taxes which have never been provided by the National Accounts as mentioned above is now roughly done[6] and shown in the Table 5 below. Based on this Table 5, we estimate the Personal Consumption, the household sector's consumption, at factor cost in 1970 yens as shown below in Table 6 on Personal Income and Outlay Account at Factor Cost. As the table shows, net indirect taxes imposed on personal consumption in 1970 yens decreased from 49 to 33 and there was a fall by 16 in 1970 compared with the level of personal consumption in 1955. And Personal Consumption at Factor Cost in 1970 yens decreased by 63 in 1970. This is a tendency. Although there was a temporal bulge in 1965 it was still smaller than the figure in 1955. Savings show the same amount as in the Table 4 need no further comment.

With the aid of Table 5, we consider the other macro-accounting figures at factor cost in Table 7. Table 7 indicates the National Income and Outlay Ac-

(6) I derive the figures of each item based on the information of indirect taxes and subsidies imposed on all Japanese industry products in 1955, 1960, 1965 and 1970, all those given by the Input-Output Tables for 1955, 1960, 1965 and 1970 and of indirect taxes shown in the tax statistics, central and local. About documentation of this, see my paper "Comparative Major Components of National Income of Japan and the UK delineated by Hicksian Format," *Annual Report on Economics and Business Administration*, Vol. 25, No. II, 1975.

Table 5: Sectoring Net Indirect Tax by Transaction Categories

in 1970 yens
¥H

	1955	1960	1965	1970
N. i. t. on Personal Consumption	49.3	45.6	40.3	33.2
N. i. t. on Govt. Consumption	2.3	5.1	3.2	3.2
N. i. t. on Personal Investment Stock	0.4	0.4	0.1	0.05
N. i. t. on Company Investment Stock	0.7	2.6	1.0	2.2
N. i. t. on Govt. Investment Stock	0.4	0.3	0.2	—
N. i. t. on Fixed Capital Investment by Persons	1.4	0.8	1.1	1.3
N. i. t. on Fixed Capital Investment by Company	2.0	2.2	2.0	2.6
N. i. t. on Fixed Capital Invest ment Govt.	1.3	1.0	1.3	1.2
N. i. t. on Export	2.5	1.3	1.4	1.5
Total (net indirect tax)	60.4	59.0	22.5	45.5

Note: N. i. t. in the table denotes 'net indirect tax' (indirect tax minus subsidies).

Table 6: Income and Outlay Account for Personal Sector at Factor Cost

in 1970 yens
¥H

	1955	1960	1965	1970
Personal Incomes	560	524	555	519
Direct Taxes	50	$44\frac{1}{2}$	61	62
Indirect Taxes (after Subsidies)	49	$44\frac{1}{2}$	$40\frac{1}{4}$	33
Disposable Income (at Factor Cost)	461	435	453	424
Consumption (at Factor Cost)	393	352	367	330
Savings	68	84	86	94

count at factor cost in 1955-1970 in '1970 yens'. Public consumption in the years shows a decrease and a fall in 1970 by 14 of its 1955 level. Thus, corresponding to the decrease of personal consumption and of the government collective consumption, there were a series of increases in savings. And in 1970 personal savings were higher by 27 than in 1955, company savings were higher by 30 than in 1955 and the general government savings were higher by $24\frac{1}{2}$ than in 1955. When proceed in the same way for the other item of expenditure, we obtain the domestic investment figures calculated on factor cost as shown in Table 8 below. Figures have been adjusted for 'statistical discrepancy' for each year, as menti-

Table 7. Income and Expenditure Accounts at Factor Cost

in 1970 yens
¥H

	1955	1960	1965	1970	1970-1955
C_H	393	351	367	330	−63
C_G	69	57	63	55	−14
S_H	68	84	86	95	27
S_B	$17\frac{3}{4}$	43	$21\frac{1}{2}$	$47\frac{2}{3}$	30
S_G	$30\frac{1}{6}$	$49\frac{1}{4}$	$43\frac{2}{3}$	$54\frac{2}{3}$	$24\frac{1}{2}$

Note: C, S denote Consumption and Savings while subscripts H, B, G denote Household Sector, Company Sector and the General Government Sector respectively.

Table 8: Domestic Investment Account at Factor Cost

in 1970 yens
¥H

	1955	1960	1965	1970	1970-1955
I_H	44.9	44.8	56.6	65.2	20.3
I_B	67.2	137.9	106.9	155.5	88.3
I_g	53.5	75.6	79.6	57.6	4.1
$I_{FH}+I_{iH}$	35.9+9.0	42.4+2.4	55.1+1.1	64.6+0.6	28.7−8.4
$I_{FB}+I_{iB}$	53.0+14.2	120.7+17.2	95.0+11.9	125.9+29.6	72.9+15.4
$I_{FG}+I_{iG}$	44.5+9.0	51.1+24.5	62.4+7.2	58.0−0.4	13.5−9.4

Note: I, H, B, , F denote Investment, Household Sector, Company Sector, General Government Sector respectively and subscript F, i denote fixed capital and inventry, i.e., I_F means fixed capital investment.

oned in the previous section, and have been arranged in '1970 yens.' There is an enormous increase of total domestic investiment, an increase of 113 in 1970 compared with the level of 1955. Above all, a great rise, amounting to 88 in Investment in the Company Sector, is most remarkable. The Company Sector increased its fixed capital investment by 73 in the years under review which is big too. The investments made by the Household Sector and the Government Sector show a smooth increase even in 1965 when the company sector's investments fell.

In 1970 they show higher levels by 20 and 4 (in 1970 yens) respectively than their 1955 levels.

Thus the aspects of the Japanese economy which are derived from these accounts can be summarized as follows: i) A rising proportion of wages and operating surpluses with a falling proportion of mixed income — seen in the

Production Account — ii) A relatively small personal consumption and government consumption with a small incidence of taxation and transfer income payment — seen in the Income and Outlay Account and the Sector Appropriation Accounts — , high investment and corresponding high saving — seen in the Income and Outlay Account and the Investment Account. They are so characteristic that they need further analysis.

IV. International Comparison of the Macro-Accounting Figures of 1955-1970

We turn to the Western countries and intend to make a comparison with the Japanese economy by means of the macro-accounting approach.

We take up here a few Western OECD countries, i.e., the United States of America, The United Kingdom of England & Wales, West Germany, France and Sweden for the same 1955-1970. When we look at their national accounts, we notice that in these OECD countries the making of macro-accounts over 15 years in a logical and consistent manner[7] seems even less impossible in the inter-temporal comparison than in our Japanese experience. We must content ourselves to make a series of main accounting ratios for comparison instead of constructing a set of tables which would accomodate constituent key-accounting figures like those in the previous section. Although series of accounting ratios involve some inconvenience which we shall see soon, we must use a ratio analysis as a substitute for a set of accounting figures. The accounting ratios which we use in this section are calculated as follows: we make an accounting ratio in one country by dividing the key-accounting figure of 1970, the base year, by the key-accounting figure of the comparative year, say 1955. For example, the personal savings ratio in the U.S. in the years 1955-1970 is got by dividing 58,864 millions by $15,831 millions., and the result is 3.7. We calculate the other accounting ratios, for instance, the Company Investment ratios of U.S., and by the same token we can calculate all the other accounting ratios of these countries based on the OECD National Accounts.

These accounting ratios are internationally comparable and in this section we must proceed with the ratio analysis of these accounting ratios.

A snag in the international comparison still remains. The OECD National Accounts don't give any information on sectoring indirect taxes and subsidies nor on expenditures measured on the factor cost basis. Against this, the in-

(7) Our statistical sources used here are two volumes of the OECD National Accounts. Although OECD National Accounts provide fairly well standarized national accounting figures, there is no complete consistency between the two volumes. OECD, *National Accounts of OECD Countries*, 1950-1968 and 1960-1970.

formation on the imposition of indirect taxes in these countries is at present very scarce,[8] so our ratio analysis is limited to the accounting figures at the market price.

Despite this limitation our tables of the main accounting ratios shown below provide a notion of the chracter of the Japanese economy in the 1955-1970 period in contrast to the other economies in the same years.

Table 9-1—9-4, shown below, indicates a series of main macro-accounting ratios in the 1955-1970. When we look at the accounting ratios in Table 9-1, we

Table 9-1: Ratios in Production Account

Countries	GDP ratio	Wage Income ratio	Depreciation ratio
Japan	8.3	8.8	12.1
U.S.A.	2.5	2.7	1.4
U.K.	2.6	2.7	2.8
W. Germany	3.8	4.3	5.5
France	4.8	5.2	5.0
Sweden	3.6	3.8	—

notice first that there is some correspondence between the GDP ratios and Wage Income ratios — an economy with a high GDP ratio is accompanied by a high Wage Income ratio, while an economy with a low GDP ratio is the highest and the French ratio follows and both have high Wage Income ratios, while the GDP ratio of the U.S. and the U.K. are smaller and their Wage Income ratios are also smaller. This is the common result of a higher growth of the former. Germany and Sweden show medium GDP ratios and Wage Income ratios according to their medium rates of growth. Against this pattern of Wage Income ratios, the corresponding Mixed Income ratios are far more irregular; they are smaller than the Wage Income ratios and the GDP ratios is Japan and France, where the GDP ratios are high, and in the U.S. where the GDP ratio is low. And they are bigger than those of the U.K. and Sweden where the GDP ratios are low, that is to say, the rates of growth are low.

Next we look at the accounting ratios concerned with incomes and outlays in Table 9-2 below.

Table 9-2: Ratios in Income Account

Countries	Personal Income ratio	Company Profit ratio	Direct Tax ratio	Indirect Tax ratio	National Income ratio
Japan	7.4	17.2	11.0	6.8	8
U.S.A.	2.7	1.3	3	2.9	2.4
U.K.	2.8	1	3.7	3.1	2.6
W. Germany	4	3.9	4.9	3.4	3.8
France	4.9	8.1	6.6	4.2	4.9
Sweden	3.6	$1\frac{1}{4}$	5.6	4.7	3.6

Table 9-3: Ratios in Household Sector's Income and Outlay Account

Countries	Direct Tax imposed on Household Sector ratio	Transfer Income from Government ratio
Japan	10.1	8.6
U.S.A.	3.6	4.7
U.K.	4.7	4.2
W. Germany	5.4	4.6
France	6.7	6.1
Sweden	6.9	6.2

At a glance the Japanese Personal Income ratios is the highest compared with the same ratios of the Western Countries. When we look more carefully, we notice that the ratios of the Western countries except for Sweden, are higher than their GDP ratios; and even the Swedish ratio is at least equal to her GDP ratio, while the Japanese Personal Income ratio behaves quite contrary to this and is lower than her GDP ratio. This is likely attributable to a higher ratio of her other income categories such as the company sector's profit ratio under the prosperous expansion of business and a high Depreciation ratio, shown in Table 9-1. Both emerged in the years during which Japan attained a high growth. From the same table 9-2 we see ratios concerned with the redistribution in these countries. Among the tax ratios we recognize that all the Direct Taxes ratios in the table are bigger than all the Indirect Taxes ratios. This means that in these countries the proportions of direct taxes tend to rise more than those of indirect taxes in the years under review. By comparison, the tax ratios, both direct and indirect, those are the highest in Japan and the Swedish ratios follow, while the U.S. ratios are the lowest. As for the Transfer Income ratio in Table 9-3, it shows that the biggest is again the Japanese ratio. This may cause a little confusion; a confusion which sometimes occures in applying the ratio analysis. These ratios which actually stand against the picture derived from the international statistics on 'cost of social security' need to be explained. As the ILO information on this subject[9] suggests, the Japanese transfer income from the government sector in 1955 was far more lower than in the countries cited here and was then improving. The high ratio of the transfer income which reflects the transfer income of 1955 was very low and it is improved later that does not explain the greatness of the present amount, nor does it imply at all the relative greatness compared with the national income. Remembering this we should make referrence to the national income ratio in each country in

(8) About the U.K. we have a work done by Prof. Hicks. See J. R. Hicks, *The Social Framework*, op. cit. As for the U.S. before 1955 the estimates were provided by J. R. Hicks, A. G. Hart and J. W. Ford in *The Social Framework of the American Economy*, 1955.

order to reckon the relative greatness of transfer incomes in the national incomes and then compare. The result is given in the table below. As Table A shows, despite its greatness, the Transfer Income ratio divided by the National Income ratio in Japan is the least and the ratio itself is relatively the smallest in the countries under review.

Table A: Ratios for Comparing Transfer Income and Taxation

Countries	Transfer Income ratio / National Income ratio	Direct Tax ratio / National Income ratio
Japan	108	138
U.S.A.	196	125
U.K.	162	142
W. Germany	121	129
France	124	135
Sweden	172	156

Under the same consideration, when we reexamine the Direct Tax ratio which greatness we found in Table 9-2, the Japanese direct tax ratio is relatively not high. As shown in the right column of the same Table A, the Japanese ratio, obtained by dividing the Direct Tax ratio by the Japanese National Income ratio, is average among the ratios in this column. This fact suggests that the Japanese economy of the 1955-1970 was confronted by a relatively 'cheap government' and that there had been a relatively small redistribution by the hand of the government.

We look then at the Consumption ratios of both, personal and government, and the Saving ratios separately by sector. We recognize that in these countries (except for Sweden) the Personal Consumption ratios in 1955-1970 are actually smaller than the Personal Income ratios of the same years. This phenomenon likely corresponds to the general statement on the 'Propencity to Consume' in a normal situation (the Swedish ratio is a bit difficult to understand. As the

(9) According to the ILO's publication, the countries percentages of the cost of Social Security to the GNP are as follows:

	1955-56	1966-67
Japan	5.6	8.2
U.S.	5.5	8.1
U.K.	10.0	13.0
W. Germany	15.7	17.9
France	13.3	15.7
Sweden	11.2	19.1

(The U.S.A.'s figures are those of 1954-55 and of 1965-66.)
Source: ILO, *Cost of Social Security*, 1966-67, 1972, pp. 326-27, 329-30.

figures of her personal savings have not been provided, it is difficult to find the reason.) The ratio of the Japanese Personal Consumption is the biggest among the ratios shown in the same column in Table 9-4. But if we investigated it by considering her higher GNP ratio and her National Income ratio (shown in Table 9-2 respectively) and as I did before for the Transfer Income, the idea which we got from its bigness would change also soon. For comparing the relative bigness of the ratio, when we divide the Personal Consumption ratio by National Income ratio, it is recognizable that the Japanese Personal Consumption ratio is relatively small, even smaller than in any other country in the Table. As for the Government Consumption ratio, where the Japanese ratio is the biggest among in Table 9-4, we have to investigate it again under the light of her GDP ratios and the National Income ratios. When we consider this as before, it is understandable that the ratios of Sweden, the U.S., W. Germany, and of the U.K. are relatively higher than the ratio of Japan and even in France where the Personal Consumption ratio is relatively low, the Government Consumption ratio is relatively higher than the Japanese ratio. From these comparisons, which have been summarized in Table B, we may conclude that the Japan consumption ratios — both those of private individuals and the collective public — are relatively lower than those in Western countries and in spite of their bigness, the relative increase, especially that of government consumption, is far smaller than in the Western countries.

Table B: Ratios for Comparing Consumption in Japan and Some Advanced Countries

Countries	Personal Consumption ratio	Government Consumption ratio	Government Consumption ratio
	National Income ratio	GDP ratio	National Income ratio
Japan	82.5	78.3	81.3
U.S.A.	100.0	152.0	158.3
U.K.	92.3	103.8	103.8
W. Germany	92.1	118.4	118.4
France	85.7	93.8	91.8
Sweden	116.7	127.8	127.8

On the contrary, when we look at Saving ratios and Investment ratios on the right hand side of Table 9-4 and Table 9-5, there are difference. As is easily discernible, the Japanese Saving ratios of both household and business, and her Domestic Investment ratios and Fixed Asset Formation ratios are higher than those ratios of the Western countries. If we make a further comparison in considering their GDP ratios (shown in Table 9-1) and their National Income ratios, the relative highness of the Japanese ratios is also most obvious, as Table C below indicates clearly.

Table 9-4: Ratios in National Income and Outlay Account

Countries	Personal Consumption ratio	Government Consumption ratio	Personal Saving ratio	Company Saving ratio	Government Saving ratio
Japan	6.6	6.5	11.0	21	14.6
U.S.A.	2.4	3.8	3.7	0.8	3.9
U.K.	2.4	2.7	—	—	6.6
W. Germany	3.5	4.5	4.3	0	13
France	4.2	4.5	7.8	9.8	7
Sweden	4.2	4.6	—	—	—

Table 9-5: Ratios in Saving and Investment Account

Countries	National Saving ratio	Domestic Investment ratio	Fixed Capital Investment ratio
Japan	13.6	13	14.6
U.S.A.	1.7	2.1	2.3
U.K.	3.8	3.3	3.1
W. Germany	3.6	4.0	4.5
France	8	7.5	7.1
Sweden	2.5	4	—

Table C: Ratios for Comparing Savings and Investment in Japan and Some Advanced Countries

Countries	Investment ratio / GDP ratio	Fixed Investment ratio / GDP ratio	Savings ratio / National Income ratio
Japan	157	176	170
U.S.A.	84	92	$70\frac{1}{2}$
U.K.	126	119	148
W. Germany	105	118	94
France	156	148	164
Sweden	111	—	69

V. Concluding Remarks

Our finding which we got in the previous two sections can be summarized as follows: In the 1955-1970 period of rapid economic growth, there was a relatively small Personal Consumption and an even smaller Public or Collective Consumption and a relatively small sized government. Under such aspects of growth, it may be thought that the whole distribution from profit to labour must have been quite small for all these years under review. In the Japanese economy the working population had not been required to bear a considerable

part of the costs of their state. They had pushed their earnings higher up, spent less and saved more instead. Undoubtedly their whole receipts and benefits had been limited and were far smaller than those which were received in the Welfare States of some Western countries to which we referred in the previous section. The Japanese working population have behaved in the years from 1955 to 1970 as if they had had some thought of 'Self Help' as their own philosophy.

From such a consideration some question arise: one concerns the relation between growth and welfare and another concerns propensity to save.

As for the first, it can be restated as follows: Is the mechanism in a society of high economic growth antagonistic to the economy of a welfare state or not? When we compare the Japanese experience with that of the Western countries, as we did in the previous section, one of the distinct features of Japan was found to be her relatively 'cheap government'. So this question arose. But is this idea generally acceptable or not?

Then second, by through comparison, it becomes evident that the personal savings had been very highly sustained. But how can we explain this high propensity to save? During the years prices had gone up as the implicit deflator was rising about 90 per cent, but the personal savings still increased. There might be various causes: confidence in the continuance of higher income, scarce liquid assets which induce high savings and a strong intension to preparing for old age or some emergency not covered by sufficient social insurance, etc. To analyse this problem is obviously important and we intend to do it in the future. We must, however, have plenty of information in detail on the Household Sector expenditure, on the taxation structure and on the distribution of income and capital by income classes, before we can solve the problem.

It may be added that the aspects of the Japanese economy in 1955-1970 according to our set of macro-accounts, indicate that Japan took an ultra-rational way when she set out in 1955, one year after the postwar period.

EFFICIENCY AND ACCEPTABILITY IN OPTIMAL GROWTH PATH

Hikoji KATANO

I. Introduction

We have many theoretical examples of optimal growth approach for development planning of the developing country. It is theoretically natural that the optimal growth approach concentrates its weight mainly on efficiency of the growth path. However, actually, there might be so many and so severe oppositions against the efficiency. High efficiency in the long-term perspective planning does necessarily induce sacrifices in increase of welfare level of the economy. In a low level situation of welfare in the developing economy, there may be a certain limit to sacrifice the welfare level on a process of economic development. For example, a maximum capital accumulation or a full employment attainment with minimum time horizon does necessarily cause a low growth rate of employment in the early stage of development. This sort of planning shall be intolerable for a developing economy with the mass of unemployment. Problem in this paper will be focused on a balance between efficiency in optimal growth and the acceptability for the economy.

II. Model of Growing Economy

We consider a closed two-sector developing economy with the mass of unemployment, where sector 1 produces investment goods and sector 2 consumer goods. In sector i, X_i units of i-th goods is produced by K_i units of capital facilities and N_i units of labour: these production factors are combined in the normal technological level.

(1) $X_i = \beta_i K_i$, $i = 1, 2$

(2) $N_i = \alpha_i K_i$, $i = 1, 2$

(3) $\alpha_1 < \alpha_2$

where β_i is output-capital ratio, and α_i is labour-capital ratio. α_i does also stand for labour-intensity in i-th sector, and (3) means that the labour-intensity in consumer goods sector is larger than in investment goods sector.

We suppose that demand for each product is always equal to the supply.

(i) The produced investment goods are allocated to both sectors. (ii) The produced consumer goods are distributed to employment.

$$X_1 = \dot{K}_1 + \dot{K}_2, \quad \dot{K}_i \geqq 0 \tag{4}$$

$$X_2 = R(N_1 + N_2) \tag{5}$$

where $\dot{K}_i$ stands for investment in i-th sector, and R for real wage rate.

We define an investment allocation ratio (to the investment goods sector) as follows:

$$u = \frac{\dot{K}_1}{X_1} \tag{6}$$

Then we have

$$\dot{K}_1 = u\beta_1 K_1 \tag{7}$$

$$\dot{K}_2 = (1-u)\beta_1 K_1 \tag{8}$$

where u does naturally move between 0 and 1.

$$0 \leqq u \leqq 1 \tag{9}$$

Demand for labour (total employment) depends on the units of capital facilities in both sectors.

$$N(t) = \alpha_1 K_1(t) + \alpha_2 K_2(t) \tag{10}$$

On the other, supply of labour grows at a certain rate n.

$$L(t) = L(0)e^{nt} \tag{11}$$

Here we assume that

$$n < \beta_1 . \tag{12}$$

In our consideration, labour supply is larger than demand for labour at initial stage.

$$N(0) < L(0) \tag{13}$$

III. Full Employment Attainment in Minimum Time Horizon

As a basic strategy, we consider a problem of full employment attainment in minimum time horizon. For the convenience, we do not consider the growth path after the full employment attainment. Then our problem is to determine the time path of investment allocation ratio $u(t)$ that makes

$$\int_0^{T^*} dt \tag{14}$$

minimum, subject to the conditions

$$\begin{aligned} &\dot{K}_1 = u\beta_1 K_1 \\ &\dot{K}_2 = (1-u)\beta_1 K_1 \\ &0 \leqq u \leqq 1 \\ &L(t) \geqq \alpha_1 K_1(t) + \alpha_2 K_2(t); \ K_i(0), \ L(0) = \textit{given} \\ &0 \leqq t \leqq T^* \end{aligned} \tag{15}$$

Hamiltonian of this problem is defined as

$$(16) \qquad H_1 = -1 + p_1 \dot{K}_1 + p_2 \dot{K}_2 .$$

In order to find $u(t)$ that satisfies the above problem, the following three conditions have to be filled.

(a) $u(t)$ is to be chosen so as to make Hamiltonian H_1 maximum, subject to the conditions (15).

(b) There are the auxiliary variables p_i that satisfy the equations

$$(17) \qquad \dot{K}_i = \frac{\partial H_1}{\partial p_i}, \quad \dot{p}_i = -\frac{\partial H_1}{\partial K_i}$$

(c) Transversality condition

$$(18) \qquad \frac{p_1(T^*)}{p_2(T^*)} = \frac{\alpha_2}{\alpha_1}$$

is to be satisfied.

Optimal time path of investment allocation ratio $u^*(t)$ is

$$(19) \qquad u^*(t) = \begin{cases} 1 & for \quad 0 \leqq t \leqq \tau^* \\ 0 & \qquad \tau^* \leqq t \leqq T^* \end{cases}$$

On the optimal path, investment concentrates to the investment goods sector at the first stage and to the consumer goods sector at the second stage. And, at the end of the second stage, full employment is attained.

When $u(t)$ moves ón the optimal time path, τ^*, T^*, $K_1(T^*)$ and $K_2(T^*)$ are determined by the relations

$$(20) \qquad \begin{aligned} & K_1(T^*) = K_1(0) e^{\beta_1 t^*} \\ & K_2(T^*) = K_2(0) + \beta_1 K_1(0) e^{\beta_1 \tau^*} (T^* - \tau^*) \\ & \beta_1 (T^* - \tau^*) = 1 - \frac{\alpha_1}{\alpha_2} \\ & L(0) e^{nT^*} = \alpha_2 K_2(0) + \alpha_2 K_1(0) e^{\beta_1 \tau^*} \end{aligned}$$

Where (3) and (12) are the necessary conditions for the unique solution.

Now, let us consider the following numerical example:

$$\begin{aligned} \beta_1 &= 0.2 & \beta_2 &= 0.4 \\ \alpha_1 &= 0.3 & \alpha_2 &= 1.0 \\ n &= 0.03 & & \\ K_1(0) &= 10 & K_2(0) &= 20 \\ L(0) &= 120 & & \end{aligned}$$

The optimal time path of investment allocation ratio is

$$u^*(t) = \begin{cases} 1 & for \quad 0 \leqq t \leqq 14.635 \\ 0 & \qquad 14.635 \leqq t \leqq 18.135 \end{cases}$$

And the related time paths of respective variables are shown in Table 1, that we call "Basic Solution".

In this basic solution, investment concentrates to the investment goods sector for the period ($0 \leqq t \leqq 14.635$). As we suppose, the investment goods sector has less labour-intensity than the consumer goods sector. Then, during the period, the employment grows at lower rate. Here we can not expect a rapid decrease in unemployment ratio. For the period ($14.635 \leqq t \leqq 18.135$), investment concentrates to the consumer goods sector. In this stage, the employment begins to grow at higher rate, basing on the highly accumulated capital facilities in the preceding stage. Only for 3.5 periods, 59.2% of unemployment ratio decreases to 0%, and full employment is attained.

On the first stage of growth, investment concentrates to the investment goods sector. There is no increase in production of consumer goods. On the other hand, employment is growing, even though at lower rate. Thus, the real wage rate is decreasing.

The basic strategy, that the basic solution stands, guarantees the full employment attainment in minimum time horizon. However, the economy has to bear (i) the low rate growth of employment and (ii) the decreasing real wage rate on the first stage of growth. It should be quite doubtful whether the basic strategy is acceptable or not for the economy.

IV. Maximum Employment in A Certain Time Horizon

As described in section III, the basic strategy guarantees the maximum efficiency in attaining the full employment. But, at the same time, this strategy sacrifices the welfare levels (in terms of employment level and real wage rate at the first stage of economic development) at the maximum degree. The point to be examined in this section is to show that the shorter planning time horizon makes less sacrifices in the welfare levels.

The problem that we consider in this section, is to determine the time path of investment allocation ratio $u(t)$ that makes

$$(21) \qquad \int_0^T [\alpha_1 K_1(t) + \alpha_2 K_2(t)]\, dt$$

maximum, subject to the conditions

$$\dot{K}_1 = u\beta_1 K_1$$
$$\dot{K}_2 = (1-u)\beta_1 K_1$$

(22) $0 \leqq u \leqq 1$
$L(t) > \alpha_1 K_1(t) + \alpha_2 K_2(t)$; $K_i(0)$, $L(0) = given$
$0 \leqq t \leqq T = given$; $T \leqq T^*$

Hamiltonian of this problem is defined as

(23) $H_2 = [\alpha_1 K_1 + \alpha_2 K_2] + p_1 \dot{K}_1 + p_2 \dot{K}_2$

In order to find $u(t)$ that satisfies the above problem the following three conditions have to be filled.

(a) $u(t)$ is to be chosen so as to make Hamiltonian H_2 maximum, subject to the conditions (22).

(b) There are the auxiliary variables p_i that satisfy the equations

(24) $\dot{K}_i = \frac{\partial H_2}{\partial p_i}$, $\dot{p}_i = -\frac{\partial H_2}{\partial K_i}$

(c) Transversarity condition

(25) $p_i(T) = 0$

is to be satisfied.

Optimal time path of investment allocation ratio $u^*(t)$ is

(26) $u^*(t) = \begin{cases} 1 & for \quad 0 \leqq t \leqq \tau \\ 0 & \qquad \tau \leqq t \leqq T \end{cases}$

where

(27) $\frac{1}{\beta_1}(1 - \frac{\alpha_1}{\alpha_2}) \leqq T$.

On the optimal path, investment concentrates to the investment goods sector at the first stage, and to the consumer goods sector at the second stage. And, at the end of the second stage, the employment becomes the maximum level attainable within the given time horizon. This pattern of investment allocation (26) is similar to the pattern of investment allocation in the basic strategy (19). Here we have a certain relation between τ and T,

(28) $T - \tau = \frac{1}{\beta_1}(1 - \frac{\alpha_1}{\alpha_2})$.

This means that the time period of the second stage has constant horizon for given output-capital ratio and labour-capital ratio. Therefore, the time period of the first stage becomes shorter for the shorter planning time horizon T. This makes less sacrifices in the welfare levels on the first stage of growth.

When $u(t)$ moves on the optimal time path, τ, $K_1(T)$ and $K_2(T)$ are determined, together with $p_1(0)$ and $p_2(0)$, by the following relations

$K_1(T) = K_1(0) e^{\beta_1 \tau}$
$K_2(T) = K_2(0) + \beta_1 K_1(0) e^{\beta_1 \tau}(T - \tau)$

$$
\begin{aligned}
(29)\quad & -\frac{\alpha_1}{\beta_1}+\left[\,p_1(0)+\frac{\alpha_1}{\beta_1}\right]e^{-\beta_1\tau}=-\alpha_2\tau+p_2(0)\\
& \beta_2\alpha_2(T-\tau)^2-\left[\alpha_1+\beta_1(p_2(0)-\alpha_2\tau)\right](T-\tau)\\
& \qquad\qquad +\left[-\frac{\alpha_1}{\beta_1}+(p_1(0)+\frac{\alpha_1}{\beta_1})\,e^{-\beta_1\tau}\right]=0\\
& -\alpha_2 T+p_2(0)=0
\end{aligned}
$$

where (3) and (12) are the necessary conditions for the unique solution.

Now, let us consider the following three cases of numerical examples. We use the same numerical values for β_i, α_i, n, $K_i(0)$ and $L(0)$ as used of the basic solution in section III. And we define the three cases as follows:

Case I : T= 15,
Case II : T= 10,
Case III : T= 5.

The optimal time paths of respective state variables in these respective cases are shown in Table 2 for Case I, Table 3 for Case II, and Table 4 for Case III. Comparative illustrations of these cases and of the basic solution are shown by Figures 1～4.

Comparative analysis of these cases, basing on the basic solution, shows:

(i) The optimal paths of respective state variables in the first stage are the same as the optimal paths of the basic solution.

(ii) The optimal paths of respective state variables in the second stage become less effective as the time horizon in the first stage becomes shorter, because the accumulated capital facilities in the investment goods sector at the end of the first stage are smaller and the rates of capital accumulation in the second stage become lower.

(iii) However, as the time horizon in the first stage becomes shorter, the sacrifices in the welfare levels become less and less, the time horizon with low rate growth of employment becomes shorter, and the decrease in real wage rate gets off with the small loss.

V. Concentration of Investment to the Consumer Goods Sector

The characteristics, that are described in section IV, can be held for the limited time horizon of planning

(30) $3.5 \leqq T \leqq 18.135$.

That is, the optimal growth for employment maximization can be scheduled only for the above-mentioned time horizon. The upper limit shows, as explained in section III, the attainment of full employment. And the lower limit means that

the optimal growth path can not be guaranteed for the time horizon that is shorter than the limit.

The final state of the optimal growth path is a tangent-point of the following curve and straight-line,

$$(31) \qquad K_2(T) = K_2(0) + \beta_1 K_1(T)\left[T - \frac{\log \frac{K_1(T)}{K_1(0)}}{\beta_1}\right],$$

$$K_i(T) \geqq K_i(0),$$

$$(32) \qquad N(T) = \alpha_1 K_1(T) + \alpha_2 K_2(T).$$

The locus of this point is to be shown by

$$(33) \qquad K_2(T) = K_2(0) + (1 - \frac{\alpha_1}{\alpha_2}) K_1(T).$$

No growth path can reach on the straight-line (33) before $\frac{1}{\beta_1}(1 - \frac{\alpha_1}{\alpha_2})$ period; i.e., 3.5 periods. Thus we have no optimal growth path for

$$(34) \qquad T \leqq \frac{1}{\beta_1}(1 + \frac{\alpha_1}{\alpha_2}).$$

To attain the maximum employment for planning time horizon less than $\frac{1}{\beta_1}(1 - \frac{\alpha_1}{\alpha_2})$, the investment has to be concentrated to the consumer goods sector, that is more labour intensive sector. However, as mentioned above, this growth path does not guarantee the optimality.

VI. Multi-Stage Optimal Growth Path

Considering the characteristics of the optimal growth paths mentioned in section IV, a plausible growth path, that has no severe sacrifices in welfare levels, will be composed of the multiplication of optimal growth path with short-term planning horizon.

Now, let us consider a multi-stage optimal growth path, in which each stage is made up of 5 periods. The optimal time paths of respective state variables are shown in Table 5. And these are illustrated by Figure 5.

In this multi-stage optimal growth path, we can not expect the effective capital accumulation and employment over the long time horizon as guaranteed by the basic strategy. However, on the other hand, we may expect the increase in employment and real wage rate within the short time horizon. This may help to secure against social unrest due to unfavourable reputation for planning that is effective for long-term perspective but enforces severe sacrifices in welfare level

in short-term horizon.

VII. A Related Problem

A similar problem, as discussed here, has been already solved. Considering a lower limit of real wage rate, the optimal growth path has been modified. In this modified optimal growth path, the real wage rate is to be decreased for the first stage, and to be kept at constant level of the lower limit for some time. Even though the real wage rate is to be recovered afterwards, the recovery can not be expected in the short time horizon. We consider that this sort of solution can not help a developing economy, more or less, to protect from the social unrest due to the severe sacrifice in standard of living. For the security against social unrest, the developing econmy needs an increase or recovery in real wage rate within the short-term horizon. In this concern, we prefer the multi-stage optimal growth path mentioned above rather than the modified optimal growth path just mentioned.

VIII. Concluding Remarks

In this paper, we have considered the multi-stage optimal growth path for avoiding the unfavourable reputation from the long-term perspective optimal growth path. However, we have no criterion how to determine the time horizon of each stage of the multi-stage optimal growth path. The informations concerned may be rather qualitative than quantitative. The time horizon of each stage has to be determined by a limit that the developing economy can bear the sacrifices in welfare levels. And the limit depends on the actual situation that the developing economy has.

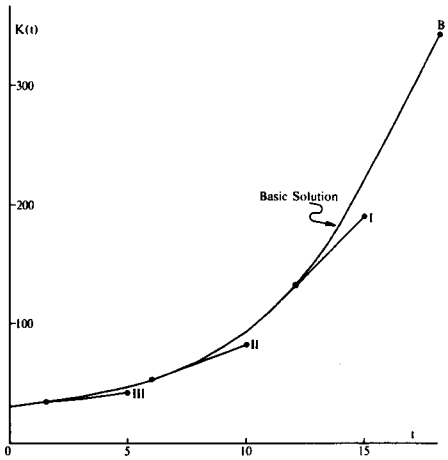

Figure 1: Capital Accumulation

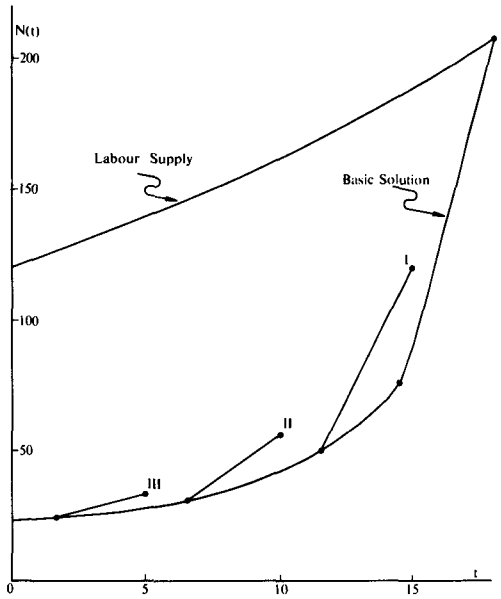

Figure 2: Labour Supply and Employment

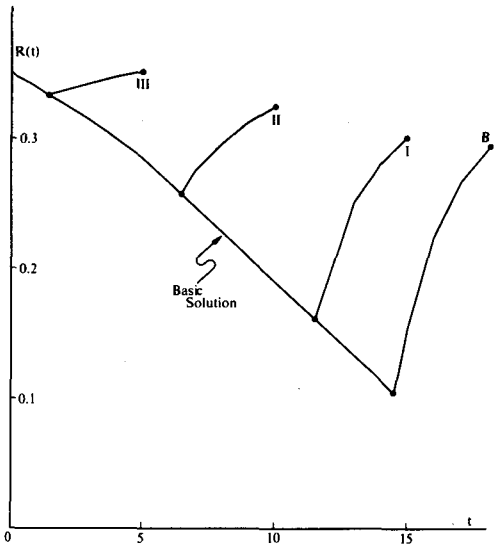

Figure 3: Real Wage Rate

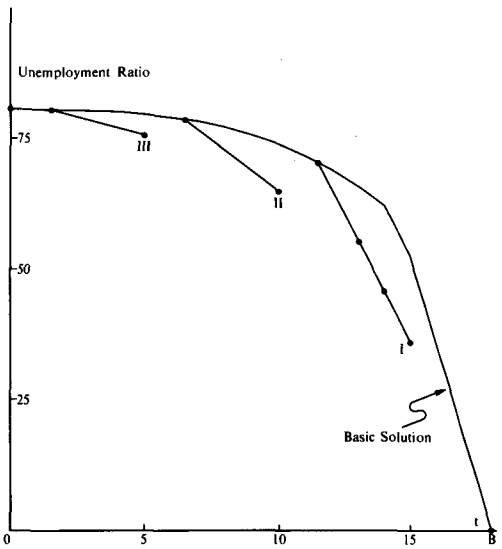

Figure 4: Unemployment Ratio

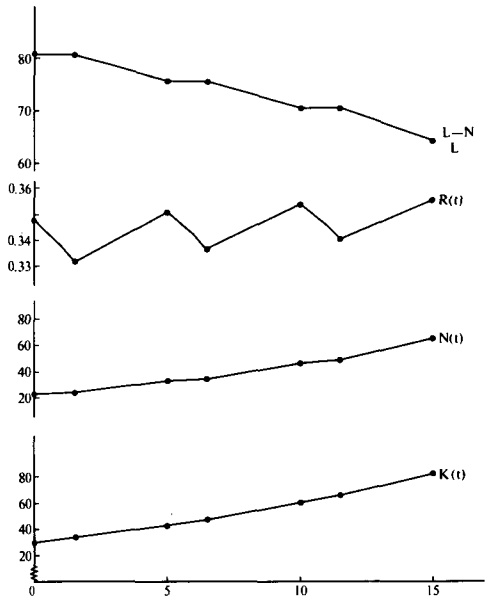

Figure 5: Multi-stage Optimal Growth Path

Table 1 : Basic Solution

	Capital			Employment			Labour Supply	Real Wage	Unemployment Ratio
	$K_1(t)$	$K_2(t)$	$K(t)$	$N_1(t)$	$N_2(t)$	$N(t)$	$L(t)$	$R(t)$	$\frac{L-N}{L}$ (%)
0	10.0	20.0	30.0	3.0	20.0	23.0	120.0	0.348	80.8
1	12.2	20.0	32.2	3.7	20.0	23.7	123.7	0.338	80.9
2	14.9	20.0	34.9	4.5	20.0	24.5	127.4	0.327	80.8
3	18.2	20.0	38.2	5.5	20.0	25.5	131.3	0.314	80.6
4	22.3	20.0	42.3	6.7	20.0	26.7	135.3	0.300	80.3
5	27.2	20.0	47.2	8.2	20.0	28.2	139.4	0.284	79.8
6	33.2	20.0	53.2	10.0	20.0	30.0	143.7	0.267	79.1
7	40.6	20.0	60.6	12.2	20.0	32.2	148.0	0.248	78.3
8	49.5	20.0	69.5	14.9	20.0	34.9	152.5	0.229	77.1
9	60.5	20.0	80.5	18.2	20.0	38.2	157.2	0.209	75.7
10	73.9	20.0	93.9	22.2	20.0	42.2	162.0	0.190	74.0
11	90.3	20.0	110.3	27.1	20.0	47.1	166.9	0.170	71.8
12	110.2	20.0	130.2	33.1	20.0	53.1	172.0	0.151	69.1
13	134.6	20.0	154.6	40.4	20.0	60.4	177.2	0.132	65.9
14	164.4	20.0	184.4	49.3	20.0	69.3	182.6	0.115	62.1
$\tau^*(14.635)$	186.7	20.0	206.7	56.0	20.0	76.0	186.1	0.105	59.2
15	186.7	33.6	220.3	56.0	33.6	89.6	188.2	0.150	52.4
16	186.7	71.0	257.7	56.0	71.0	127.0	193.9	0.224	34.5
17	186.7	108.3	295.0	56.0	108.3	164.3	199.8	0.264	17.8
18	186.7	145.6	332.3	56.0	145.6	201.6	205.9	0.289	2.1
$T^*(18.135)$	186.7	150.7	337.4	56.0	150.7	206.7	206.7	0.292	0.0

Table : 2 : Case I

	Capital			Employment			Labour Supply	Real Wage	Unemployment Ratio
	$K_1(t)$	$K_2(t)$	$K(t)$	$N_1(t)$	$N_2(t)$	$N(t)$	$L(t)$	$R(t)$	$\frac{L-N}{L}$ (%)
0	10.0	20.0	30.0	3.0	20.0	23.0	120.0	0.348	80.8
1	12.2	20.0	32.2	3.7	20.0	23.7	123.7	0.338	80.9
2	14.9	20.0	34.9	4.5	20.0	24.5	127.4	0.327	80.8
3	18.2	20.0	38.2	5.5	20.0	25.5	131.3	0.314	80.6
4	22.3	20.0	42.3	6.7	20.0	26.7	135.3	0.300	80.3
5	27.2	20.0	47.2	8.2	20.0	28.2	139.4	0.284	79.8
6	33.2	20.0	53.2	10.0	20.0	30.0	143.7	0.267	79.1
7	40.6	20.0	60.6	12.2	20.0	32.2	148.0	0.248	78.3
8	49.5	20.0	69.5	14.9	20.0	34.9	152.5	0.229	77.1
9	60.5	20.0	80.5	18.2	20.0	38.2	157.2	0.209	75.7
10	73.9	20.0	93.9	22.2	20.0	42.2	162.0	0.190	74.0
11	90.3	20.0	110.3	27.1	20.0	47.1	166.9	0.170	71.8
$\tau^*(11.5)$	99.7	20.0	119.7	29.9	20.0	49.9	169.4	0.160	70.5
12	99.7	24.0	123.7	29.9	24.0	53.9	172.0	0.178	68.7
13	99.7	49.9	149.6	29.9	49.9	79.8	177.2	0.250	55.0
14	99.7	69.9	169.6	29.9	69.9	99.8	182.6	0.280	45.3
15(T)	99.7	89.8	189.5	29.9	89.8	119.7	188.2	0.300	36.4

Table 3: Case II

	Capital			Employment			Labour Supply	Real Wage	Unemployment Ratio
	$K_1(t)$	$K_2(t)$	$K(t)$	$N_1(t)$	$N_2(t)$	$N(t)$	$L(t)$	$R(t)$	$\frac{L-N}{L}$ (%)
0	10.0	20.0	30.0	3.0	20.0	23.0	120.0	0.348	80.8
1	12.2	20.0	32.2	3.7	20.0	23.7	123.7	0.338	80.9
2	14.9	20.0	34.9	4.5	20.0	24.5	127.4	0.327	80.8
3	18.2	20.0	38.2	5.5	20.0	25.5	131.3	0.314	80.6
4	22.3	20.0	42.3	6.7	20.0	26.7	135.3	0.300	80.3
5	27.2	20.0	47.2	8.2	20.0	28.2	139.4	0.284	79.8
6	33.2	20.0	53.2	10.0	20.0	30.0	143.7	0.267	79.1
$\tau(6.5)$	36.7	20.0	56.7	11.0	20.0	31.0	145.8	0.258	78.7
7	36.7	23.7	60.4	11.0	23.7	34.7	148.0	0.274	76.6
8	36.7	31.0	67.7	11.0	31.0	42.0	152.5	0.295	72.5
9	36.7	38.4	75.1	11.0	38.4	49.4	157.2	0.312	68.6
10(T)	36.7	45.7	82.4	11.0	45.7	56.7	162.0	0.323	65.0

Table 4: Case III

	Capital			Employment			Labour Supply	Real Wage	Unemployment Ratio
	$K_1(t)$	$K_2(t)$	$K(t)$	$N_1(t)$	$N_2(t)$	$N(t)$	$L(t)$	$R(t)$	$\frac{L-N}{L}$ (%)
0	10.0	20.0	30.0	3.0	20.0	23.0	120.0	0.348	80.8
1	12.2	20.0	32.2	3.7	20.0	23.7	123.7	0.338	80.9
$\tau(1.5)$	13.5	20.0	33.5	4.1	20.0	24.1	125.5	0.332	80.8
2	13.5	21.4	34.9	4.1	21.4	25.5	127.4	0.337	80.0
3	13.5	24.1	37.6	4.1	24.1	28.2	131.3	0.340	78.5
4	13.5	26.8	39.3	4.1	26.8	30.9	135.3	0.346	77.2
5(T)	13.5	29.5	43.0	4.1	29.5	33.6	139.4	0.351	75.9

Table 5 : Multi-Stage Optimal Growth Path

	Capital			Employment			Labour Supply	Real Wage	Unemployment Ratio
	$K_1(t)$	$K_2(t)$	$K(t)$	$N_1(t)$	$N_2(t)$	$N(t)$	$L(t)$	$R(t)$	$\frac{L-N}{L}$ (%)
0	10.0	20.0	30.0	3.0	20.0	23.0	120.0	0.348	80.8
1	12.2	20.0	32.2	3.7	20.0	23.7	123.7	0.338	80.9
τ_1(1.5)	13.5	20.0	33.5	4.1	20.0	24.1	125.5	0.332	80.8
2	13.5	21.4	34.9	4.1	21.4	25.5	127.4	0.337	80.0
3	13.5	24.1	37.6	4.1	24.1	28.2	131.3	0.340	78.5
4	13.5	26.8	39.3	4.1	26.8	30.9	135.3	0.346	77.2
5	13.5	29.5	43.0	4.1	29.5	33.6	139.4	0.351	75.9
6	16.5	29.5	46.0	5.0	29.5	34.5	143.7	0.342	76.0
τ_2(6.5)	18.2	29.5	47.7	5.5	29.5	35.0	145.8	0.337	76.0
7	18.2	31.3	49.5	5.5	31.3	36.8	148.0	0.340	75.1
8	18.2	35.0	53.2	5.5	35.0	40.5	152.5	0.346	73.4
9	18.2	38.6	56.8	5.5	38.6	44.1	157.2	0.349	71.9
10	18.2	42.2	60.4	5.5	42.2	47.7	162.0	0.354	70.6
11	22.2	42.2	64.4	6.7	42.2	48.9	166.9	0.346	70.7
τ_3 (11.5)	24.6	42.2	66.8	7.4	42.2	49.6	169.4	0.341	70.7
12	24.6	44.7	69.3	7.4	44.7	52.1	172.0	0.344	69.7
13	24.6	49.6	74.2	7.4	49.6	57.0	177.2	0.347	67.8
14	24.6	54.5	79.1	7.4	54.5	61.9	182.6	0.352	66.1
15	24.6	59.4	84.0	7.4	59.4	66.8	188.2	0.356	64.5

AN EQUITABLE DISTRIBUTION OF THE COSTS AND BENEFITS OF ECONOMIC INTEGRATION

Yoshiaki NISHIMUKAI

I

It is widely accepted that economic integration is a useful means of accelerating the growth of developing countries. Many economic integration schemes. however, are confronted with important difficulties. Among the many problems obstructing developing countries' efforts for economic integration, the greatest difficulties arise in relation to the devising of policies that will bring about an equitable distribution of the costs and benefits of integration.

This problem is closely linked with that of the disparity of the level of economic development within the participating countries. It has been shown, both theoretically and empirically, that in the absence of special measures in favour of the less developed countries of a grouping, the benefits of economic integration are likely to be concentrated in the more developed countries while a disproportionate share of costs will be borne by the less developed ones.

Therefore, special measures are required to solve this problem and to make developing countries promote their integration schemes. Recent UNCTAD reports[1] throw light upon this problem and give us some important suggestions. The more fundamental problem, however, is to make clear what an equitable distribution of the costs and benefits of economic integration is. If this problem remains unsolved, the integration process will be unable to lead to progress.

An equitable distribution of the costs and benefits of economic integration insolves some important problems. In the first place, the notion of costs and benefits varies from one country to another. In the second place, the measurement of costs and benefits for each participating country has the difficulties inherent in this kind of estimate. In the third place, it is not easy to define precisely what is meant by an "equitable" distribution of the costs and benefits

(1) UNCTAD series *Current Problems of Economic Integration*; Peter Robson, *Fiscal Compensation and the Distribution of Benefits in Economic Grouping of Developing Countries* (E. 71. II. D. 6), J. Mario Ponce and H. Brewster, *Agricultural and Industrial Co-operation among Developing Countries* (E. 72. II. D. 6), and Eduardo Lizano, *The Distribution of Benefits and Costs in Integration among Developing Countries* (E. 73. II. D. 12).

within an integration scheme. Lastly, despite these difficulties, some practical measures must be sought to achieve a better distribution of costs and benefits among the participating countries.

II

The costs and benefits which economic integration schemes bring about for the participant countries are well known through the arguments for integration as a means of accelerating development. The benefits relate to greater economies of scale, greater specialization and division of labour, higher efficiency in industry, reduced external vulnerability and increased bargaining power with third countries.[2] The costs of integration relate to the losses caused by the trade diversion and what is known as the "polarization effect."[3] These benefits and costs, however, have been considered with relation to the integration area as a whole. There have been few attempts made to estimate precisely how the benefits and costs of an integration scheme have been distributed among the participating countries.[4] In considering an equitable distribution of benefits and costs, the emphasis must be placed on the consequences for each particular country rather than the effects on the integrated area as a whole.

But the accurate determination of benefits and costs for each participant country is accompanied by the difficulties connected with the actual notion of benefits and costs and their assessment by each country. The notion of benefits and cost is not a single notion applicable generally to all member countries of an economic integration scheme. It depends on each country's economic characteristics and circumstances. For instance, the influence of the emigration of workers as a polarization effect may differ for a country with a serious unemployment problem and a country with full employment. For the former, emigration of workers might alleviate its economic and social tension and would not mean a cost, whereas for the latter the loss of manpower might entail a disadvantage.

In addition, the objectives pursued by countries in participating in an economic integration scheme may be different, and this affects the notion of benefits and costs. For example, if a member country's objective is to complete its infrastructure, the integration process would mean a significant cost or benefit, according to whether it did or did not attract capital investment to finance work on the

(2) UN, *Trade Expansion and Economic Integration among Developing Countries* (67. II. D. 20), Chap. II, A.

(3) Peter Robson, *op. cit.*, pp. 4-7.

(4) As example of global analyses, we can cite D. H. McClelland, *The Central American Common Market: Economic Policies, Economic Growth, and Choice for the Future*, Praeger, 1972, Chap. 2 and Jeffrey B. Nugent, *Economic Integration in Central America*, Johns Hopkins, 1974, Chap. 3

infrastructure. However, for another country whose objective is to maximize its rate of growth, this effect would depend on the extent to which a better infrastructure enables it to maximize its growth rate. Otherwise, it would lay stress on the development of such other activities as industries or agriculture.

It must be noted that the notion of benefits and costs varies not only from one country to another but also in the course of time in a single country. At the early stage of the integration process, a country might have a certain amount of idle capacity and would therefore be able to expand the production of some goods without having appreciably to sacrifice the production of others. But as this idle capacity becomes exhausted and the over-all supply becomes inelastic, the position changes. Then, the alternative use of resources assumes far greater importance and the benefits and costs of decision also become more significant. It is therefore possible for the benefits and costs of the process to change in a single country over a period of time with the changes in the circumstances of its domestic economy.

Besides the different criteria mentioned above, the problem of the distribution of the benefits and costs of integration involves other more complex issues. The magnitude of benefits and costs can be affected by many factors among which the nature of the integration scheme and the economic policy adopted by the participant countries have great importance. As regards the integration scheme, the effect of the external common tariff on all the member countries, for instance, is not precisely the same, because national tariffs are not usually alike before the integration process begins and custom duties have to be changed to an extent differing in each country in order to establish a common external tariff. This means that the establishment of a common external tariff entails costs for each country differing with the tariff in force in each country before integration.

As regards the economic policy, some policy measures applied in member countries can give rise to additional costs and can also determine how they are distributed among the member countries. This applies to inflationary fiscal and monetary policies, fixing the price of production factors or particular goods and the inadequate treatment of foreign investment and rates of exchange. Such measures can have an appreciable effect on the size of the benefits and costs of integration and the way in which they are distributed among member countries.

III

Despite the difficulties described above, some attempts have been made to measure the benefits and costs of economic integration and their distribution among the member countries. Although they are partial approaches and have

not produced the hoped for results, it is useful to review them briefly according to their criteria of measurement.[5]

In the first place, some attempts have been focused on the effect on the national income and the volume of employment. A. J. Brown believes that account must be taken of both increases of income of a country A resulting from the new activities established there because of the protective external tariff, and the benefits derived by country B from the increase of its exports to country A because of the increase of the latter's income.[6] This approach has the following two important limitations, as Brown himself pointed out: (1) this model assumes an over-all elastic supply in both country A and country B, so that both countries can increase production without having to decrease production of any product, and (2) an emphasis is placed on the short-term benefits, without consideration of the long-term benefits, especially those related to the polarization effect, which may greatly influence the results of the distribution of benefits and costs.

D. Segal adopted a different approach from that of Brown.[7] He attempts to measure the benefits and costs of integration in terms of the increase in the value added in each country that results from the intra-regional trade expansion. Moreover, as he assumes that the opportunity cost of the factors used in the production of the goods traded in the integrated area is zero, or very close to zero, the result is that the benefits derived by each member country are in direct relation to the volume of employment created as a result of the increase of intra-regional trade. His approach also raises some serious problems: (1) if the assumption on the opportunity costs of factors is abandoned, then not only will the benefits of intra-regional trade be less, but it will be very difficult to measure them, since there must be an estimate of the loss of value added due to the displacement of the factors of production, and (2) since the only goal established in this model is to optimize the distribution of the increase in value added resulting from integration, the model does not enable member countries to modify their objective in the course of time.

In the second place, some attempts have been made to measure the benefits and costs in terms of the intra-regional trade. The method employed by D. P. Ghai[8] is akin to the one which has been widely applied to the problem of assessing the benefits and costs of integration in developed countries and in-

(5) For a detail, see Y. Nishimukai "Keizai-Tôgô-Rieki-no-Keisoku-o-meguru-Shomondai (Problems of the Measurement of Benefits and Costs of Economic Integration)," *Kokumin-Keizai-Zasshi*, Vol. 123, No. 5, May 1971 and Eduardo Lizano, *op. cit.*, Annex II.

(6) A. J. Brown, "Customs Union versus Economic Separatism in Developing Countries (Part II)," *Yorkshire Bulletin of Economic and Social Research*, Vol. 13, No. 2, November 1961.

(7) David Segal, "On Making Customs Union Fair: An East African Example," *Yale Economic Essays*, Vol. 10, No. 2. Fall 1970.

volves employing margins of protection as an indicator of the benefits and costs. Specially, the benefits are indicated by each country's categories of intra-regional exports weighted by the relevant nominal degree of protection, while the costs are measured by each country's intra-regional imports similarly weighted.

This approach also raises certain serious problems, as A. Hazlewood, R. R. Wood and others pointed out.[9] The main criticisms that have been made of this model are the following:

(1) A substantial portion of the intra-regional trade is independent on the tariff preference. Therefore this trade must be distingished from other intra-regional trade.

(2) The costs involved for one member country in importing from another correspond not to the value of the imports, but to the difference between the world price and the internal price prevailing in the integrated area, multiplied by the increase in the volume of intra-regional imports.

(3) In view of the impact of trade on the rate of economic growth, the main issue in the measurement of the benefits and costs of integration is the value added content of intra-regional trade rather than the absolute value of such trade. In other words, a deficit in absolute terms in intra-regional trade might in these terms be more than compensated for by a higher value added content of intra-regional exports compared to intra-regional imports.

(4) A country which can obtain goods at a lower price by trade creation effect may suffer costs, because it must transfer the factors of production and use them for producing other items. Thus there must be an estimate of the costs of the transfer and of any possible difference in productivity between the old activity and the new one. Therefore it is impossible to determine the benefits and costs of intra-regional trade by analysing only the prices of intra-regional imports.

(5) The intra-regional trade approach does not take into account other important aspects, such as the fact that some activities that could have been located in the country if there had been no integration scheme, can no longer be established because of the opportunity of importing them from other member

(8) D. P. Ghai, "Territorial Distribution of the Benefits and Costs of the East African Common Market," *East African Economic Review*, June 1964, reprinted in Colin Leys and Peter Robson (ed.), *Federation in East Africa : Opportunities and Problems*, 1965.

(9) A. Hazlewood, "The East African Common Market: Importance and Effects," *Bulletin of the Oxford University Institute of Economics and Statistics* (*B. O. U. I. E. S.*) Vol. 28, No. 1, February 1966, R. N. Wood, "The East African Common Market: A Reassessment", *B. O. U. I. E. S.*, Vol. 28, No. 4, November 1966, A. Hazlewood and D. P. Ghai, "The East African Common Market: Importance and Effects, A Comment," *B. O. U. I. E. S.*, Vol. 29, No. 3, August 1967.

countries.

In the third place, there are some attempts which determine the benefits and costs of integration that a country obtains in terms of specific developments, particularly in industrial sectors, which are directly or indirectly related to the operation of the scheme. W. T. Newlyn's analysis approaches the problem by taking the actual situation of the industrial sector of a country and comparing it with a hypothetical situation which would have been obtained if that country had not participiated in the integration scheme.[10] In making this comparison, Newlyn considers the following four elements, leaving aside spill over effects:

(A) the industries established in country K which are exporting to country T, and that could have been established in T if there had not been free trade between K and T (shiftable industries);

(B) the industries established in K which depend on its exports to T, and would not exits if there were no integration (common-market-based industries in K);

(C) the industries established in T which depend on its exports to K, which also would not exist if there were no integration (common-market-based industries in T);

(D) the exports of industrial products from T to K which would not exist if there were no common market. Newlyn concludes that the overall gain to T (G_t) would be equivalent to: $G_t = A - C - X(B + A) - D$, where X is the spill over ratio, that is, the percentage growth of the income of T in relation to the increase in production in country K resulting from the common market.

An important characteristic of this model is the incorporation of the concept of shiftable industries. Assuming that products whithin an industry are homogeneous, and that external economies of industrial concentration in country K can be offset by country T's tariff which is no higher than that of the existing common market, shiftable industries at present established in K area identified by comparing the annual average value of output per plant with the value of exports from K to T. Whenever the average value of output is less than the value of exports, this industry is selected as a shiftable industry, and the value added in this industry causes for T a product increase under protection.

Various criticisms have been made of this approach, especially by Hazlewood and P. Robson.[11] The main criticisms are the following:

(1) The possibility of establishing an industry does not mean that it will be established in fact, because the size of the market is necessary but not sufficient

(10) W. T. Newlyn, "Gains and Losses in the East African Common Market," *Yorkshire Bulletin of Economics and Social Research*, Vol. 17, No. 2, November 1965.

condition. Thus, country T leaving the common market is not sure of being able to obtain rapidly the shiftable industries;

(2) The assumption that the output of an industry is homogenous is doubtful. In fact, the same industrial category includes a number of establishments which produce different goods;

(3) The industries could each have plants with an output smaller than the market size, as well as plants with a larger output, but in some industries the average output could be smaller and in the others larger than the market size. The former would therefore be classified as shiftable and the latter as nonshiftable, although in reality there was no significant difference between the two industry groups in the relevant respects;

(4) The technical possibility of producing a merchandise on a smaller scale production does not imply that it is economical to do so. Technically shiftable industries can only be viable in country T in the following cases: (i) where the technically shiftable industries of K need the full protection of the tariff but T's industries can produce as efficiently as K's (even though at a higher cost than imports from the rest of the world) ; (ii) where the technically shiftable industries of K do not need the full protection of the tariff, and where any higher cost of production in T still leaves the local price below that of comparable products imported from the rest of the world. In other words, except where T can produce at the same cost as K, only K's industry which is both shiftable and not fully dependent on the tariff would be viable in T;

(5) The value added by the industries shifted away from K would not necessarily lead to an equivalent increase in the national income of T, because the factors of production that would be used in the shifted industries carry a certain opportunity cost. Only where T had all the factors of production at the same costs as those prevailing in K, could it be considered that the increase in the value added by the shifted industries would correspond to the increase in the national income, but this situation is highly unlikely.

In contrast with Newlyn's approach which compares the hypothetical industrial development if there had been no integration with the industrial situation where integration exists, D. M. Schydlowsky[12] tries to estimate the benefits and

(11) A. Hazlewood, "The 'Shiftability' of Industry and the Measurement of Gains and Losses in in the East African Common Market," *B. O. U. I. E. S.*, Vol. 28, No. 2, May 1966, W. T. Newlyn, "The Shiftability of Industry and the Measurement of Gains and Losses in the East African Common Market: A Reply," *B. O. U. I. E. S.*, Vol. 28, No. 4, November 1966, Peter Robson, "The Shiftability of Industry and the Measurement of Gains and Losses in the East African Common Market: Some Further Considerations," *B. O. U. I. E. S.*, Vol. 30, No. 2, May 1968.

(12) Daniel M. Schydlowsky, "Allocating Integration Industries in the Andean Group," *Journal of Common Market Studies*, Vol. IX, No. 4, June 1971.

costs of each of a set of integration industries which will be newly established in the integrated area, assigning a special value to the production factors used in the integration industries. He then tries to determine the country in which each of the integration industries must be located to ensure that the benefits and costs estimated in terms of foreign exchange saved and / or earned are satisfactorily distributed. This model, however, is a partial one because it calculates the benefits and costs of only integration industries decided *a priori*, and neglects the consequences of the allocation of other industries.

IV

Even if the difficulties in the measurement of benefits and costs can be overcome, a still remaining problem might be what is to be understood by an equitable distribution of benefits and costs. All recent agreements for economic integration among developing countries give much emphasis to equity in the integration process. But none of these agreements defines is what meant by equity.

The Cartagena Agreement, for instance, states that the objectives of the Agreement are " to promote the balanced and harmonic development of the member countries, to accelerate their growth through economic integration ---" (art. 1) and continues "the balanced and harmonic developments should lead to an equitable distribution of benefits derived from integration among the member countries, so as to reduce the existing difference among them"(art. 2). But it is not crear whether the drafters of the Agreement had in mind narrowing the absolute or the relative gap.

It is not easy to define precisely what is meant by an equitable distribution of benefits and costs within an integration scheme. Clearly it is inequitable that a member country is not as well off inside the integration scheme as it would be if it were to refrain from participating. But it is virtually impossible to compare how the country would have developed in the absence of the integration with its actual progress. This would involve not only assessing the forces which emerge as a result of the integration and their quantitative importance, but also the alternative paths and the alternative opportunity for the country outside the integration. Even if economic analysis were able to provide an adequate answer to this comparison and to prove the inequity, it would provide no guide to the concept of equity.

There still remains a broad range of possible definitions of an equitable distribution of benefits and costs, that is, from concentration of all benefits in one member country to more or less equal shares among all member countries.

The case of all benefits being concentrated in one member country may be rejected as inequitable if relative welfare is an element in the welfare function of the member countries. Several special cases may appear to have particular appeal: equal absolute benefits, equal proportional benefits to population, gross national product and per capita income and so on. However, as D. Morawetz insists, "while each of these possibilities may be defended pseudoscientifically as the 'right' definition of equitable benefit distribution, the conclusion is the same as that which emerged from the attempt to develop a scientific basis for the progressive income tax: the decision as to which benefit distribution is 'the most equitable' ultimately rests not on logical argument but on value judgement. "(13)

However, as the base of value judgement, it is important for the member countries to recognize the distinction of two aspects of equity. P. Robson makes a distinction "between the minimum requirement of *equity* in an integration scheme, which is a matter which raises primarily economic consideration, and the promotion of *balance*, which may be regarded as a political objective."(14)

If the operation of market forces in an integration scheme would render the position of a member country less satisfactory than it would be outside, equation measures may be required to bring the partner at least up to the level it could reach in the most favourable alternative situation. If this requirement is not conceded by its partners, the country concerned would not, on economic grounds, join, or if it were already a member, it would not indefinitely remain so. In other words, the concept of equity relates to the minimum net benefits (benefits minus costs) which each country needs if it is to participate or remain in an integration scheme.

After the minimum requirements of each member country are satisfied, there remains the question of how any remaining net benefits should be distributed among the member countries. This raises a question of balance. The concept of balance, therefore, must be thought of, not in terms of such an objective criterion as the concept of equity, but in terms of what is acceptable to the member countries, and this will be arrived at by political bargaining. It is possible to conceive various principles of balance, according to which the member countries might be prepared to distribute the remaining net benefits. For instance, it might be regarded as equitable that the net benefits should be distributed among the members, equally or in proportion to their national income of their population.

Although the adoption of any of them would not necessarily imply a re-

(13) David Morawetz, *The Andean Group: A Case Study in Economic Integration among Developing Countries*, MIT Press, 1974, p. 73.

(14) Peter Robson, *Fiscal Compensation and the Distribution of Benefits in Economic Groupings of Developing Countries*, 1971, p. 6.

duction in disparities among the member countries, they are consistent with the basic criterion of equity. Alternatively, principles of balance might be defined in terms of the reduction of intra-regional disparities. For instance, the principle of balance might be considered in terms of equalizing the growth rates of the members, or in terms of narrowing the gap between the relatively less developed countries and relatively more developed ones.

This approach which considers an equitable distribution not as only a single concept but as one which has both conceptual and operative aspects, can be useful to promote integration schemes. The first point is that it is relatively easy to determine the minimum requirement of equity for each country, since it is the more manageable question to ask what benefits and costs would be involved for the members of the integration if it were to be broken up, on comparative static assumptions. To arrive at an answer to this question it is necessary to take the actual situation in the integration as it is now and to compare it with a hypothetical alternative position which differs from it in the existence of separate national markets. This comparison, however, is not so difficult as comparing the actual situation with a hypothetical position resulting from not belonging to the integration in the past.

The second point is that although the principles of balance can not be thought of in terms of an objective criterion, it is not difficult for the member countries to agree on a principle of balance, because the minimum requirement of equity would be ensured by the conceptual aspects of equity. With this approach, a relatively less developed country, for instance, would be able to agree to participate or remain in an integration scheme even if no special measures were taken to narrow the gap separating it from the other countries, provided that such participation enabled it to grow at a rate faster than it would attain if it were not a member of the integration.

JAPANESE BUSINESS ABROAD: PAST, PRESENT AND FUTURE

Hideki YOSHIHARA

I. New Strategic Problems of Japanese Firms

Today the advanced industrial nations are said to be underdoing a great change, which is discussed from various points of view using various terminologies such as the change from civilized to post-civilized society, from industrial to post-industrial society, or from the age of manufacturing industry to that of knowledge industry.(1) Japanese firms, in this changing situation, are being forced to face new business problems in addition to old ones which are more or less familiar to them. Among the new business problems the following four seem to be predominantly important:

(1) how to maintain the growth of firms in the domestic market by diversifying their business activities
(2) how to realize the growth of firms in the foreign market through carrying out international business activities
(3) how to cope with the new social and political environment which is characterlized by such factors as industrial pollution, consumers' movements and general anti-business attitudes
(4) how to deal with the energy crisis and the shortages of various raw materials

These new business problems are not problems of an internal procedure and its working of the firm, but are commonly concerned with either altering the existing relationship between the firm and its environment or setting up a new relationship between them. Thus, they are what Dr. H. Igor Ansoff has called the "strategic problems" of the firm.(2)

Considering the nature and the trend of recent changes in the environment of Japanese firms, the four strategic problems mentioned above are anticipated to become of central concern to Japanese firms. And the international business

(1) Kenneth E. Boulding, *The Meaning of the Twentieth Century: The Great Transition*, Harper & Row, 1964.
Peter F. Drucker, *The Age of Discontinuity*, Harper & Row, 1969.
(2) H. Igor Ansoff, *Corporate Strategy*, McGraw-Hill, 1965.

problem which is treated in the present paper is an important component of these new strategic problems of Japanese firms.

II. Features of Japanese Foreign Direct Investment

With the exception of these twenty years, the international business activities of Japanese firms, especially Japanese manufacturing firms, had been mostly restricted to the export of their products to foreign countries. For nearly one hundred years since the beginning of the Meiji era, Japanese firms had been putting in consistently all their efforts to expand their exports in order to grow beyond the narrow limits of their domestic market.

In the latter half of the 1960's, however, a great change took place in the international economic environment of Japanese firms. The balance of trade which had been mostly unfavorable for almost one hundred years turned to be favorable since 1965. The amount of excess of exports over imports has shown a rapid increase since then. On August 15, 1971, the Japanese economy was hard hit by President Nixon's Declaration of his new economic policy. And it has presently become apparent that the international economic environment has undergone a drastic change. The emerging new environment has entirely novel features such as the accumulation of ample amount of international reserves, revaluation and then floatation of the yen, and the shift of emphasis of the Japanese Government's trade policy from the export promotion to the import promotion.

With the emergence of a new international economic environment, foreign direct investment has acquired a great importance in the overall international business strategy of Japanese firms. Operation of overseas subsidiaries is considered by many Japanese firms as reinforcement of or even substitution for their traditional export activities.

As a matter of fact, many Japanese firms were extensively engaged in foreign operations even before the Second World War. There is an estimation which shows that the average annual amount of Japanese foreign direct investment during the period of 1934-36 evaluated at the price level of 1955 reached 178 billion yen or 500 million dollars.[3] Most of the investment, however, was made in those areas and countries which were more or less under the control of Japanese political power like the Korean Penninsula, Taiwan, and the Chinese Continent. This prewar Japanese foreign direct investment died out completely with the end of the War.

(3) Tsūshōsangyō-shō (the Ministry of International Trade and Industry), *Keizai-kyōryoku no Genjō to Mondai-ten* (White Paper on Economic Cooperation), 1958 edition, pp. 113-114.

Postwar Japanese foreign direct investment was first made in 1951. Next, let us attempt to shed light on some of the important features found in its development over nearly twenty years up to the recent time.[4]

The stock, that is, the accumulated amount of Japanese foreign direct investment at the end of 1972 has reached 6,773 million dollars.[5] In terms of the size of stock of foreign direct investment, Japan ranks fifth after U.S.A., U.K., West Germany and France. The ratio of the stock of foreign direct investment to GNP is only 2.3% in the case of Japan and smallest among the five major industrial nations.

As for the rate of increase of investment, however, Japan stands first among these five countries. The average annual rate of increase over the years 1967-72 is 36.0% in the case of Japanese foreign direct investment, and it by far exceeds 9.6% of the U.S.A. and 7.8% of U.K.

In short, Japanese foreign direct investment has been increasing at a rapid pace since the latter half of the 1960's, but still remains relatively small at the present stage compared with the foreign direct investment of U.S.A. and Western European major industrial nations.

Let us next examine the industrial composition and the geographical distribution of Japanese foreign direct investment.

As for the industrial composition, the following features seem to deserve our attention. First, in terms of the accumulated values of investment, the investment in the primary industry stands first (32.0%), the investment in the manufacturing industry comes next (31.7%) and the third position (12.0%) is occupied by the investment in commerce. More than 90% of the primary industry investment has been made in the mining industry.

Turning our attention to the number of investment projects, we find a different pattern. One third of all the foreign direct investment projects has been made in the manufacturing industry (33.1%) and commerce (30.4%) respectively. Investment projects made in the mining industry represents only 3.4%.

Based upon the above two features, we may draw the third feature which is concerned with the size of investment projects. Straightforward calculation of the average size of investment projects using the above figures tells us that the average investment project of the mining industry is 9.3 times as large as that of the manufacturing industry, and 22.5 times as large as that of commerce. As a matter of fact, one of the main features of Japanese foreign direct investment,

(4) See a similar kind of attempt made by Professor Koichi Hamada. "Japanese Investment Abroad," in Peter Drysdale, ed., *Direct Foreign Investment in Asia and the Pacific*, Australian National University Press, 1972, pp. 173-200.

(5) At the end of March, 1974, it has reached 10,270 million dollars.

compared with that of other advanced industrial nations, is that overseas manufacturing investment projects have been small in size and that many of them have been made by medium and small-sized enterprises.

Turning our attention to the geographical distribution, we may point out the following features. First, in terms of the accumulated values of investment, the bulk of Japanese overseas investment has been made in the following five areas: (1) North America (24.0%), (2) Latin America (17.6%), (3) Asia (23.3%), (4) the Middle and Near East (14.6%) and (5) Europe (11.9%). The shares represented by the other two areas have remained relatively small: Africa (2.5%) and Oceania (6.2%).

That more investment has been made in developing countries than in advanced countries is a salient feature found in the geographical distribution of Japanese foreign direct investment. This feature is evident in the following figures which compare the share of investment made in developing countries of major industrial nations by 1970: U.S.A. (26.0%), U.K. (33.3%), West Germany (29.0%) and Japan (50.8%).

As host countries for Japanese foreign direct investment, United States and Western European countries have mainly received the investment in commerce, and banking and insurance. Many of the subsidiaries and branch offices established in these countries are sales companies and the like engaging in marketing activities with the view of expanding the exports of their parent companies to these areas.

On the other hand, in developing countries like those in Asia and Latin America, manufacturing investment projects have been predominant. Many manufacturing subsidiaries have been established by Japanese parent companies in order to cope with various import regulation policies of these countries as well as to take advantage of their abundant and low-cost labor force.

United States foreign direct investment shows a marked difference with respect to these points. First, the investment in the manufacturing industry has occupied a predominant position in the overall foreign direct investment. Second, Canada and advanced industrial countries in Western Europe have been major host countries for U.S. manufacturing investment.

As mentioned earlier, nearly one third of Japanese foreign direct investment has been made in the mining industry. Although Japanese overseas mining investment is scattered all over the world, with respect to the three areas of the Middle and Near East, Africa and Oceania, the mining investment is far more important than other investment.

III. Recent Developments of International Business Activities

From now on, we shall focus our attention upon manufacturing firms and attempt an examination of the nature of recent developments of their international business activities.

As a general trend, we may say that the export of finished goods is relatively losing its importance in the overall international business strategy, and that the export of technology and whole sets of plants, and especially foreign direct investment are rapidly getting more importance. This trend is reflected in the rapid increase of overseas manufacturing investment in the recent past. During the two fiscal years of 1972 and 1973, overseas investment of 5,835 million dollars was approved and this figure represents approximately 60% of all the accumulated values of Japanese foreign direct investment. And the manufacturing investment has also increased rapidly during these two years.

A major reason for setting up overseas manufacturing subsidiaries was to defend local markets in host countries on account of difficulties in exporting goods from the Japanese parent companies. So, markets of overseas sudsidiaries were naturally limited to local markets of host countries. Since the end of the 1960's, however, a change has been taking place. According to the recent investigation of the Export-Import Bank of Japan, "exports to third countries" and "exports to Japan" from overseas subsidiaries have become increasingly important as motives for establishing overseas subsidiaries.(6) The strategy of "exports to Japan" is extensively carried out by subsidiaries set up in such countries as South Korea, Taiwan, Hong Kong and Singapore. The strategy of "exports to third countries" is being carried out most energetically by those subsidiaries which produce textile products and electric appliances.

The change observed in the market orientation of overseas subsidiaries may be termed as a shift from "local market orientation" to "local-plus-export market orientation." It may also be called a changed from a "single-country approach" to a "multi-country approach."

The following two factors may be pointed out as main forces contributing to bring about this recent change. The first factor is a change of government policy of host countries. Many developing host countries have recently shifted the emphasis of their industrialization policy from import-substitution to export-promotion. Overseas subsidiaries located in these countries are generally expected and sometimes even required to adapt themselves promptly to this change of

(6) The Export-Import Bank of Japan, *Japanese Private Investments Abroad: The Summary of Third Questionnaire Survey*, 1972.

government policy and make serious efforts to export their goods. The second factor is a sharp rise in the manufacturing costs of Japanese parent companies. Such recent factors as revaluation and floatation of the yen, a sharp rise in the wage level, a severe regulation of industrial pollution and the oil crisis have rapidly deprived Japanese manufacturing companies of their comparative cost advantages over U.S. and European competitors. In this situation they have begun to assign a new role to their overseas subsidiaries: manufacturing basis designed for exporting their products to third country markets previously supplied by the parent companies.

Some newer trends are observed among a relatively small number of manufacturing firms which have been exceptionally ambitious in their international business activities. A textile company has started a subsidiary in England and is collecting the latest information on fashion in Europe through it. An electronics company has established a subsidiary in the center of the American electronics industry with the view to gain direct access to the latest research information in the United States. Still another textile company has set up a sudsidiary in Hong Kong to raise funds in the financial market there.

Some firms in such industries as textiles, electric machines, and foodstuffs have begun to establish an elaborate network of production and marketing on a global basis: first exporting equipments and half-finished goods to subsidiaries in developing countries from parent companies; secondly working upon them at the subsidiaries using relatively cheap labor force; and then lastly exporting the finished goods to markets of advanced industrial countries from those subsidiaries through the international marketing channels of the parent companies.

If we forecast the future of international business activities of the Japanese manufacturing firms with these recent developments in mind, how would it be? To the author it would be as follows: the leading Japanese companies will establish and manage an elaborate network of their logistic functional activities such as research and development, purchasing, manufacturing, marketing, fund raising, etc., on a global basis. These Japanese firms pursuing a "global approach" would fully deserve the label of "multinational enterprises."

IV. Obstacles to Emerging Japanese Multinational Enterprises

Is there any possibility that a considerable number of Japanese firms will develop to be genuine multinational enterprises just as the U.S. multinational enterprises ?(7) Let us examine this possibility by paying attention to a few important features of Japanese firms.

(7) Raymond Vernon, *Sovereignty at Bay*, Basic Books, 1971, Chapter 1.

(1) Predominance of Joint Ventures

There exists a marked difference between U.S. overseas manufacturing subsidiaries and Japanese counterparts with respect to the ownership pattern. While the majority of the former is wholly-owned by the U.S. parent companies, joint ventures are predominant in the case of Japanese overseas manufacturing subsidiaries. And in many instances joint ventures consist of three kinds of investors: Japanese manufacturing companies, Japanese trading companies and local manufacturing or trading companies in the host countries. Professor Yoshihiro Tsurumi, who is studying Japanese multinational enterprises as a member of the Harvard Multinational Enterprise Project has called this particular form of joint ventures "three-partner-four-legged" joint ventures.

Joint venture subsidiaries have the advantage of utilizing various kinds of business resources provided by partners such as financial resources, management skills and manpower, distribution systems, etc. But on the other hand, since more than one investor takes part in decision-making, and since the aim and interests of participating investors are not necessarily the same, conflicts of interests easily occur among them. These conflicts would generally occur when they make dicisions on such important matters as distribution of profits, transfer prices, assignment of territories of sales, business expansion or reduction, and product diversification.

Such disadvantages of joint ventures as mentioned above are unnoticeable when subsidiaries set up in various countries are local-market oriented and thus largely independent from each other. But when parent companies begin to achieve some form of specialization and coordination of overseas subsidiaries under the view of global business strategy, the disadvantages will soon come to the fore.[8]

So far, U.S. multinational enterprises have consistently pushed forward the policy of complete ownership to pursue their multi-country or global approach in international business activities, avoiding joint ventures in which their control over their subsidiaries might be diluted. A basic reason why they have been able to carry out this policy of complete ownership is that they have been able to offer various valuable contributions to host countries such as supply of monetary resources, employment and training of the local labor force, transfer of advanced technology and management skills, and contribution to exports. In addition, they have sometimes been backed directly or indirectly by the enormous political, economic and military power and influence of the U.S. Government over these countries.

On the other hand, host countries, especially developing host countries have

(8) These points are fully treated in: John M. Stopford and Louis T. Wells, Jr., *Managing the Multinational Enterprise*, Basic Books, 1972.

recently begun to strongly demand the participation of local partners in the ownership. An increasing number of developing countries have come to declare that foreign investment projects should be in the form of joint ventures.

In this situation the promotion of the policy of complete ownership by U.S. multinational enterprises has come to face growing anti-U.S. attitudes and movements of the peoples and governments of many host countries. Actually, not a few U.S. controlled subsidiaries have been nationalized in countries of Latin America.

In the case of Japanese firms, whatever the reasons and intentions may be, they have traditionally shown a tolerant attitude toward joint ventures and thus an attitude of accepting the demand of the host governments. More than 2,000 manufacturing investment projects have been made in Asian countries. There has been no single case in which Japanese subsidiaries have been nationalized, although severe criticisms upon them have been widely observed in many Asian countries.[9]

The disadvantage of joint ventures, that is, conflicts among partners and dilution of the control of parent companies over their overseas subsidiaries has been generally dormant in Japanese firms since they have still retained a single-country approach. But as they begin to promote a multi-country approach or a global approach and attempt to achieve a coordinated network of overseas subsidiaries on a global basis, the disadvantage will gradually become active and pose complex and difficult problems.

In the long run, we may expect that both U.S. firms and Japanese firms will reach more or less the same solution to the problem of the conflict between their global business strategy and the national sovereignty of host countries. But the question that accounts at present is which ownership policy, the U.S. or the Japanese, will be better for firms to survive and grow as multinational enterprises for some time until the solution comes.

(2) Weakness in Research and Development

As distinguished from foreign indirect investment which involves an international transfer of only financial resources, foreign direct investment means an international transfer of packaged business resources and capabilities. It has come to be generally accepted that the driving force of growth of the U.S. multinational enterprises has been their superiority in business resources and capabilities, especially the ability to develop new products, modern production management and marketing know-how, and various management procedures and

(9) Only ten or so Japanese companies have been or are going to be nationalized in such countries as Peru, Zaire and Ethiopia.

techniques. If we would attempt a comparison of business resources and capabilities between leading U.S. firms and Japanese counterparts, we would see a wide gap in the ability to develop new products, though no great gap in other resources and capabilities.

Compared with Japanese and Western European firms, U.S. enterprises have been favorable in strengthening their research and development capability. First, we should notice the peculiar nature of demands of the U.S. market. Many of the important modern manufactured goods which may be characterized as either high-income products or labor-saving products have been usually demanded first in the U.S.A. and then gradually have spread to other advanced industrial nations including Japan.(10) Secondly, we know that in the U.S.A. many big projects such as aero space development projects and military projects have been carried out under the financial support of the U.S. Government. Leading U.S. enterprises have participated in these big projects and acquired the newest scientific knowledge and information while making good profits. And thirdly, the relative largeness of U.S. firms is advantageous for them to cope with financial and time uncertainties involved in developing new products.

As analysed and predicted by Professor Raymond Vernon of Harvard Business School, if U.S. enterprises will continue to maintain superiority in research and development capability in the future, we should admit that the present predominance of their foreign operations over those of Japanese and Western European firms will last for some time.(11)

However, if we consider the following points, we might cherish some hopes for the future of the research and development capability of Japanese firms. The first point is that Japan is supposed to be going ahead of Western countries with respect to the seriousness of such contemporary problems as industrial pollution, environmental deterioration, traffic congestion, urban problems of overcrowded big cities, energy crisis, etc.. If this is true, it may well be assumed that the needs in Japan precede those in the U.S.A. and other advanced industrial nations. The second point is that U.S. Government supported military and scientific development projects may only indirectly and slightly contribute to the development of new products and technology which are useful to solve such contemporary problems. The third is that the size of the budget for research and development in leading Japanese firms is rapidly getting larger with the rapid growth of these firms.

If we prospect the future rather optimistically with these points in mind, we

(10) Raymond Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics*, May 1966, pp. 190-207.

(11) Raymond Vernon, *Sovereignty at Bay* (*op. cit.*), Chapter 8.

can hope that the Japanese firms will even exceed the U.S. competitors in their capability to develop new products urgently demanded by the advanced industrial nations. As a matter of fact, Japanese firms are going ahead of U.S. competitors in the race to develop pollution control technology, public mass-transportation systems and less-gas-consuming compact cars with cleaner engines.

And even in the field in which U.S. firms hold the supremacy, Japanese companies may lessen the handicaps to a certain degree by establishing in the U.S. market subsidiaries whose major function is to collect the latest information on the emerging new products and technology.

(3) International Applicability of Japanese Style Management

Recently, as the number of Japanese overseas manufacturing subsidiaries increases, the question whether the Japanese style management works well in foreign countries has come to assume not only an academic importance but also a practical importance.

According to a rather popular view the international applicability of the Japanese type management is rather poor compared with that of the U.S. type management. The following points may be referred to as a major basis for this view.

Among the employees of U.S. firms in early days, many immigrants were included. Most of them were poorly educated and could only understand fragments of English. Interpreters were hired for these employees in some firms.[12] The U.S. type management has been formed out of the long practice of managing the employees who were heterogeneous in culture, race and language. So, a formalization of procedures of management has developed to a high degree and important procedural aspects of management have come to be explicitly stated in various manuals such as managers' guides, job descriptions for each employee, and organization charts.

Japanese style management has evolved out of a completely different history. Since the beginning of the Meiji era, Japanese employees, from the top of president to the bottom of ordinary workers, have been exceptionally homogeneous in cultural background, race and language. They have shared a common basis for mutual communication and understanding to a relatively high degree. As a result, Japanese style management has shown an impressively contrasting feature compared with U.S. style management: many of the procedures of management have not been formalized and thus remained implicit.

It would be rather natural to assume that the Japanese type management,

(12) Jeremiah W. Jenks and W. Jett Lauck, *The Immigration Problem*, 5th edition, Funk & Wagnalls Company, 1922, pp. 199-200.

because of the above mentioned history and feature, would encounter more difficulties in managing foreign employees in overseas subsidiaries than the U.S. type management. Japanese managers are not accustomed to deal with foreign employees whose cultural and social background is quite different from that of Japanese employees. And the feature of implicitness of the Japanese type management may provoke a slow acceptance, misunderstanding and even overt rejection among local employees in overseas subsidiaries. To them, Japanese way of management is often mysterious.

Secondly, we need to think that the U.S.A. is a huge country with an area of about 25 times as large as Japan. The distance between New York and San Francisco is nearly 3,000 miles and is roughly equal to the distance between Tokyo and Bangkok of Thailand. U.S. firms, as experienced in managing branch factories and offices in San Francisco from their head offices in New York, may well apply their management skills and procedures to control their London subsidiaries.(13)

By contrast, Japanese management skills and procedures, as having evolved through the practice of controlling branch factories and offices located in a small country, may not be suitable for the emerging Japanese multinational enterprises which may consist of many subsidiaries and branch offices dispersed all over the world.

However, on the other hand, there are some who hold the opposite view. According to thier view, the international applicability of the Japanese type management is not poor. They argue that the U.S. type management, when applied in a complicated and socially dense country, may be inferior with its hierarchical, competitive, individualistic, and profit-oriented features; while the Japanese type management may produce better results in the future with such features as lifetime employment system, compensation and promotion of employees based upon their employment period and educational background, emphasis on organizational loyalty and teamwork of employees, and decision-making by collective agreement.(14)

In the above paragraphs we have treated two different views on the international applicability of the Japanese type management. Which view is more reasonable? Are Japanese overseas subsidiaries managed under the same type of management as employed in their parent companies? How are the results, or what kind of problems are they facing now? To these questions and to the earlier questions of joint ventures and research and development capability, we

(13) For this point the author is indebted to Professor Yoshihiro Tsurumi.

(14) Richard D. Robinson, "The Future of International Management," *Journal of International Business Studies*, Spring, 1971.

can not give reliable answers now. To our great regret, studies on the international business activities of Japanese firms are evidently insufficient. Any reliable forecast for the emergence of genuine Japanese multinational enterprises demands us to carry out theoretical and empirical studies on the subjects on a full scale.

Notes:

(1) This paper is basically an English version of the author's earlier paper, "Nihon Kigyō no Seichō to Kokusai Keiei Senryaku," *Kokumin Keizai Zasshi*, No. 6, Vol. 128 (December 1973), pp. 59-72.

(2) The figures used in the paper are drawn from the following sources:
   (a) Japan External Trade Organization (JETRO), *Wagakuni Kaigaitōshi no Genjō —Kaigaishijō Hakusho No. 2—* (Current Survey of Japanese Foreign Direct Investment — White Paper on Foreign Market, the Second Part ——), 1974 edition.
   (b) Tsūshōsangyō-shō (the Ministry of International Trade and Industry), *Wagakuni Kigyō no Kaigai Zigyōkatsudō* (Survey of Overseas Business Activities of Japanese Firms), the third survey, 1974.

(3) A part of the studies of the paper has been financed by the subsidy of the Ministry of Education of the Japanese Goverment (the fiscal year 1974, Project No. 933010).

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THE RESEARCH INSTITUTE FOR ECONOMICS AND BUSINESS ADMINISTRATION, KOBE UNIVERSITY

HISTORICAL SKETCH

In 1919, a research organization named the Institute for Commerce was founded in Kobe Higher Commercial School, one of the chief predecessors of Kobe University, with a gift made by F. Kanematsu & Company, a leading mercantile firm in Kobe. The organization was designed to carry on and facilitate integrated research on business and commerce and to formulate and publish the results of these studies and investigations in such form as to make them available to the business community.

With the founding of Kobe University of Commerce, successor of Kobe Higher Commercial School, in 1929, the Institute extended its research activities by adding several divisions. One was the famous Latin-American Library, which soon became the center of research in this field in Japan. A room for statistics equipped with various computing machines was established and began publication of *Jūyō Tokei Keizai* monthly and *Sekai Bōeki Tōkei* annually. A filing room was prepared to deposit press clipping files systematically arranged by topics and dates. Another room was designed to become the center of all posible original records and data having to do with the beginning and progress of Japanese business.

On the campus of Kobe University of Commerce, another organization named the Institute for Business Mechanization was founded in 1941 utilizing

business machines donated by the IBM Corporation and others. With Professor Yasutaro Hirai as its head a broad and forward-looking plan for business mechanization in Japan was developed.

In 1944, Kobe University of Commerce changed its name to Kobe University of Economics. After the War, however, the University was consolidated with three other colleges in Hyōgo Prefecture to become Kobe University. With this development, the two Institutes were also amalgamated into the Research Institute for Economics and Business Administration, Kobe University. At present, the Institute, with its twenty four full-time professional staff members, carries on studies and investigations in international economy, business administration, and information systems in Japan.

LOCATION AND BUILDINGS

The Research Institute for Economics and Business Administration is located on the campus of Kobe University, Rokko, Kobe. It consists of two three-storied buildings. One is named the Kanematsu Kinenkan and has a floor space of about 2,900 square meters, which includes a president's room, forty-one offices, six rooms used as a library, a room for statistics, etc. Another is built in 1964. It has a floor space of about 1,900 square meters, which is chiefly used as the Documentation Center for Business Analysis, a library and a conference room.

ORGANIZATION

Under the directorship of the president, the Institute operates with two research groups. Each research group and its sections are as follows:

A Group of International Economy

(1) International Trade
(2) International Finance
(3) Maritime Economy
(4) Latin-American Economy
(5) International Low of Economy
(6) International Labour Relations

B Group of Business Administration

(1) International Management
(2) Business Administration and Information Systems
(3) Accounting

(4) Business Statistics

Besides the regular work of the Institute, research committees may be created to carry on any special work requiring the joint study of academic and business circles. At present, there are three committees, that is, Committee on Structural Change in World Economy, Committee of International Finance and Committee of Information Systems.

For convenience and greater efficiency in carrying out its research activities, the Institute has a general office which is responsible for 1) the collection and preservation of a comprehensive collection of books, periodicals, pamphlets, and original records and data of finance, trade, commerce, industry and business generally; 2) the classification, cataloguing, indexing, arranging, annotation and compilation of these research materials; and 3) the formulation and publication of the results of the investigations and studies accomplished by the professional staff members of the Institute.

As an affiliated institute, the Documentation Center for Business Analysis has been established in 1964. It is the first systematic information facility in the field of business administration in Japan that has been recognized and authorized by the Ministry of Education. The purpose is to collect and to make intensive control of all kinds of materials on business administration and to make them available to scholars, universities, governments, and business world with the aid of modern documentation techniques.