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Development of Poor Regions: General Considerations and the Case of Japan

Ryoichi Kabaya

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University of California at Berkeley

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INTRODUCTORY NOTE

Ryoichi Kabaya's essay is doubly valuable. In the first place, it provides a clear-eyed reportage of what is being done and what is happening in the less developed areas of Japan. It thus contributes to the growing literature on the experience of diverse countries in grappling with this problem, and its contribution is especially welcome because of the interest that attaches to Japan as the premier non-Western developed country. The similarities and the differences with the American and European experience are both instructive, but perhaps the clearest lesson is that the structure of the problem transcends the cultural differences.

The second valuable aspect of Mr. Kabaya's essay is the admirable clarity with which it presents the theoretical and empirical bases that underlie diagnosis and prescription. I have read, I imagine, many hundreds of articles and books on this subject, and this essay stands out among them because it avoids the fumbling, confusion, and frequent equivocation that commonly arise from our ignorance and the difficulty of the subject. It lays down the basic structure, parses out the principal points, indicates where data is insufficient and opinions are contradictory, and in general does a superb job of organizing ideas and information. Thus this essay is far more than a report and analysis of the Japanese case. It is a valuable and timely contribution to the literature of regional development in general.

William Alonso

ACKNOWLEDGMENTS

The purpose of this paper is to evaluate the basic features of the regional policy of the Japanese Government directed to lagging regions. Although I have studied regional economic situations in Japan, the theoretical and empirical bases of my arguments were mostly those of the United States. This was based upon the assumption that they are basically applicable also to Japan.

I should like to express my appreciation to my advisors, Professor C. Bartlett McGuire and Professor William Alonso, for their kind guidance and valuable advice; and to Professor Frederic C. Collignon for his helpful suggestions. I am also indebted to Mrs. Barbara Borowiak for her miscellaneous assistance.

Lastly, I wish to thank the Japanese government, who generously gave me the chance of studying at Berkeley. I should be very happy if this poor work of mine could contribute even a little to a better orientation of the Government's regional policy.

R. K.

Berkeley, California

Spring 1971

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CHAPTER I

REGIONAL IMBALANCES AND REGIONAL DEVELOPMENT POLICY IN JAPAN

The rapid economic growth in post war Japan has been accompanied by regional imbalances in development. The prosperous prefectures line up in the so called "belt zone" area, which faces the Pacific Ocean. The regions facing the Pacific Ocean are generally called "the front Japan", and those facing China, "the back Japan". Whatever the origin of these terms might be, at present these expressions clearly connote "prosperous" and "lagging". It is not difficult to identify a little more exactly prosperous and lagging areas by examining population trends, income levels and industrial structure.

Table 1 shows population trends since 1955 by regions. Generally speaking, five regions are gaining population, Northern and Southern Kanto, Tokai, Kinki, and Sanyo. The growth rates of Southern Kanto, Tokai, and Kinki were especially high and always far exceeded the national average. In the other two regions, the population is increasing, but very slowly. The remaining eight regions are all losing population. It must be noted that if we compare the growth rates of the second (1960-1965) and third (1965-1970) periods, out of eight regions which are losing population seven regions increased their rates of depopulation. It is also true that the three fast growing regions (Southern Kanto, Kinki, and Tokai) are slowing down their growth rates.

TABLE 1

Rate of Population Increase by Regions
(1955-1970)

Rate of Population Increase (5 years)

	I (1955-60)	II (1960-65)	III (1965-70)
Hokkaido	9.2	2.9	Δ 0.4
Tohoku	2.9	Δ 2.3	Δ 2.5
Northern Kanto	0.7	Δ 1.1	2.2
Southern Kanto	12.7	17.4	14.8
Hokuriku	1.4	Δ 1.5	Δ 1.6
Tosan	1.3	Δ 0.1	Δ 0.2
Tokai	7.0	9.5	7.0
Kinki	9.1	11.9	9.0
San'in	Δ 0.4	Δ 4.8	Δ 6.4
Sanyo	2.7	0.2	0.9
Shikoku	0.4	Δ 4.0	Δ 4.1
Northern Kyushu	4.6	4.0	Δ 3.9
Southern Kyushu	1.5	Δ 6.3	Δ 6.7
Japan	5.8	4.7	4.1

Source: Toyo Keizai Shinpo-Sha, Inc. Chi-iki Keizai Soran (Conspectus of Regional Economics), 1971

Nonetheless, they are constantly increasing their total share, at a progressive rate at that. (See Table 2)

If we use smaller regional units (prefectures), quite naturally variations within regions are found. Most interesting of all is the often cited fact that Tokyo is remarkably slowing down its growth rate. For the first and second periods the growth rates of Tokyo were 15.2 percent and 13.6 percent respectively, but for the period 1965-70 it was only 5.8 percent. In contrast to this the other three prefectures in the Southern Kanto region are growing at very high rates. For the period 1965-70 the Tokyo metropolitan region (Southern Kanto) as a whole achieved 14.8 percent increase, but this was the result of a mixture of only 5.8 percent increase in Tokyo and as high as 24.3 percent (averaged) increase in the rest of the region. In general, however, the figures by regions mentioned above well represent the prefectural trends in each region.

Table 3 shows the relative value of per capita income in 1968 by prefecture and region. It is somewhat surprising that excluding the prefectures for which the data are not available, only seven out of 43 prefectures were enjoying higher income levels than the national average. All of these high income prefectures are in the big three metropolitan regions. Prefectures of especially low income levels cluster in Tohoku, San'in and Kyushu. The income level of the lowest prefecture (no. 46) was about 52 percent of the national average, and only about 32 percent of the highest (Tokyo).

As expected, lagging regions depend relatively heavily upon agriculture, and less on manufacturing industries (See Table 4). This is especially clear in Tohoku, San'in and Kyushu. The figures for

TABLE 2

Percentage of the Population in the Three Biggest Metropolitan Areas to the Total Population

	1955	1960	1965	1970
Japan	100.00	100.00	100.00	100.00
Southern Kanto	17.16	18.28	20.50	22.62
Tokai	8.82	8.92	9.33	9.59
Kinki	14.27	14.72	15.74	16.49
Total of the three regions	40.25	42.46	45.57	48.70
Increase	---	2.21	3.11	3.13

Source: Toyo Keizai Shinpo-sha, Inc. Chi-iki Keizai Soran, 1971.

TABLE 3

Relative Value of Per Capita Income (1968)

Japan	100.00	San'in	66.62
		Tottori	68.37
Hokkaido	84.22	Shimane	65.37
Tohoku	....	Sanyo	92.27
Aomori	62.12	Okayama	91.56
Iwate	.....	Hiroshima	96.30
Miyagi	78.45	Yamaguchi	86.88
Akita	77.40		
Yamagata	76.26	Shikoku	80.28
Fukushima	71.69	Tokushima	81.33
		Kagawa	86.52
Northern Kanto	85.14	Ehime	77.95
Ibaraki	79.85	Kochi	76.57
Tochigi	85.57		
Gunma	91.53	Northern Kyushu	76.71
		Fukuoka	87.30
Southern Kanto	139.58	Saga	69.14
Saitama	108.99	Nagasaki	67.44
Chiba	98.24	Kumamoto	71.58
Tokyo	164.22	Oita	66.78
Kanagawa	131.17		
		Southern Kyushu	56.86
Hokuriku	84.43	Miyazaki	64.97
Niigata	81.32	Kagoshima	51.97
Toyama	90.04		
Ishikawa	88.69		
Fukui	81.11		
Tosan	82.41		
Yamanashi	74.48		
Nagano	79.96		
Gifu	88.66		
Tokai	105.74		
Shizuoka	100.45		
Aichi	114.44		
Mie	87.58		
Kinki	.....		
Shiga	.....		
Kyoto	112.45		
Osaka	149.44		
Hyogo	.....		
Nara	84.67		
Wakayama	87.75		

Source: Toyo Keizai Shinpo-sha, Inc. Chi-iki Keizai Soran, 1971

TABLE 4

Industrial Structure of Prefectures (1968)

	1st	2nd	3rd		1st	2nd	3rd
Japan	22.1	33.5	44.3	Kinki	10.4	42.5	47.1
Hokkaido	25.6	23.8	50.5	Shiga	31.1	32.5	36.4
Tohoku	41.0	20.7	38.3	Kyoto	11.0	38.3	50.6
Aomori	43.7	17.4	39.0	Osaka	2.6	49.0	48.4
Iwate	45.5	18.2	36.1	Hyogo	12.0	40.9	47.1
Miyagi	35.4	20.2	44.4	Nara	21.4	32.3	46.3
Akita	45.2	18.8	36.0	Wakayama	26.6	31.6	41.6
Yamagata	39.7	21.8	38.6	San'in	39.6	21.4	39.0
Fukushima	39.0	25.8	35.4	Tottori	37.5	23.0	39.8
Northern Kanto	37.1	37.7	35.2	Shimane	41.1	20.2	39.2
Ibaraki	44.1	22.9	33.0	Sanyo	24.2	33.3	42.5
Tochigi	34.0	29.9	36.0	Okayama	30.2	33.5	36.4
Gunma	31.3	31.6	37.1	Hiroshima	19.3	36.2	44.5
Southern Kanto	8.3	40.2	51.5	Yamaguchi	24.8	28.3	46.7
Saitama	19.5	39.9	40.5	Shikoku	34.6	25.8	39.6
Chiba	28.4	28.7	42.9	Tokushima	38.3	26.6	35.0
Tokyo	1.1	40.9	57.9	Kagawa	29.3	28.7	42.5
Kanagawa	4.4	46.2	49.4	Ehime	33.8	27.1	38.8
Hokuriku	29.3	31.4	39.3	Kochi	38.6	19.2	42.0
Niigata	34.9	27.1	38.0	Northern Kyushu	29.7	24.3	46.0
Toyama	25.5	35.6	38.9	Fukuoka	17.2	31.3	51.5
Ishikawa	23.3	34.5	42.2	Saga	36.7	22.9	40.4
Fukui	25.4	35.0	39.7	Nagasaki	33.0	23.2	43.8
Tosan	30.8	32.9	36.3	Kumamoto	41.8	15.5	42.6
Yamanashi	32.4	29.4	37.9	Oita	41.3	18.2	40.6
Nagano	36.7	28.6	34.8	S. Kyushu	45.5	17.5	37.0
Gifu	23.1	39.5	37.6	Miyazaki	42.3	18.4	39.1
Tokai	16.7	41.4	41.9	Kagoshima	47.5	17.0	35.3
Shizuoka	21.5	37.7	40.9				
Aichi	10.5	46.1	43.4				
Mie	28.7	32.6	39.0				

Source: Toyo Keizai Shinpo-sha, Inc. Chi-iki Keizai Soran, 1971

Northern Kyushu as a whole are misleading. The low ratio of agriculture is solely due to one industrialized prefecture (no. 40).

I shall not try to adduce other indices which might indicate regional disparity or imbalance. Nor is there any attempt here to establish cause-effect relations among the three indices mentioned above. However, there seem to be positive correlations among population trends per capita income levels, and industrial structures, and the general development pattern is already clear. This is, however, a very rough bird's eye view, and a closer look reveals many rapidly growing cities in the regions generally defined as lagging. In almost every prefecture which is losing population as a whole there is at least one big city which is gaining population. These local centers are mostly prefectural capitals, and generally have populations of around 150,000 to 400,000. There are a few exceptions in which the biggest cities in lagging prefectures show slight trends of depopulation recently (for instance, no. 24, 35, 42).

Table 5 shows general population trends of all cities in Japan. If we tentatively classify all the cities into three types (growing, steady, and declining) by the rate of population growth, cities of both type I (growing) and III (declining) are increasing. The trend is very clear as for the nation as a whole, but it is interesting to note that even in lagging regions (see Tohoku, Hokuriku, San'in, Shikoku and Kyushu) the percentage of "growing" cities has been increasing since 1960, whereas declining cities are also increasing in general. These data suggest that polarization of population is in progress also at local levels, and that population movements are not simply from lagging to prosperous regions, but many local centers are growing within lagging regions.

TABLE 5

Ratio of Growing, Steady, and Declining* Cities by Regions (1955-1970)

	I. Growing			II. Steady			III. Declining		
	55-60	60-65	65-70	55-60	60-65	65-70	55-60	60-65	65-70
Hokkaido	22	13	9	70	46	26	8	41	65
Tohoku	7	4	6	90	73	69	3	23	25
N. Kanto	5	9	17	88	72	63	7	19	20
S. Kanto	29	48	53	70	46	43	1	6	4
Tokai & Tosan	24	32	34	70	52	52	6	16	14
Hokuriku	11	7	8	84	76	75	5	17	17
N. Kinki	13	24	25	68	60	62	4	16	13
S. Kinki	28	30	31	66	54	55	6	16	14
San'in	1	0	2	88	53	55	11	47	43
Sanyo	6	11	16	76	41	44	18	48	40
Shikoku	5	3	8	73	52	51	22	45	41
Kyushu	5	5	7	86	47	45	9	48	48
Japan	12	14	17	80	56	54	8	30	29

Source: Ito, Z. "Chi-iki Keizai Kozo no Genjyo to Shorai eno Tenbo (Regional Economic Structure; Present Situation and Future Prospect)", in Toyo Keisai Shinpo-sha, Inc., op. cit., p. 10.

*Note: Growing -- cities the populations of which grew at rates of more than one per cent during each five years.
Steady -- 1% - Δ2%
Declining -- more than 2% decrease

Outline of Regional Development Policy

It is difficult to exactly describe a country's regional policy, because every policy has explicit or implicit regional impacts. By "regional policy" it is usually meant only those policies which promote public investment (road construction, etc.) and other governmental efforts in specific regions in the country with the explicit purpose of promoting economic and social development of these regions. However, there are many policies which are originally directed to some other objectives, but which, in fact, have implicit regional impacts. For example, a standardized minimum wage policy might act as a brake on the industrial expansion in lagging areas, because otherwise low wages in lagging areas might attract industries to these areas. To mention another example, the traditional and still dominant railway freight policy which tapers rates for long distances and sets lower charges for raw materials than for manufactures tends to free location of manufacturing industry from being tied to raw material sources. This might work as a centralizing factor, because it reduces the advantages of processing agricultural raw materials on the spot rather than in the industrialized areas.[1]

A comprehensive review of regional policy must take into account all these implicit as well as explicit regional policies, but it is beyond the scope of this paper. In the following a very rough outline of explicit regional policies in Japan will be shown.

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[1] United Nations, Department of Economic and Social Affairs, "Problems of Regional Development and Industrial Location in Europe," in J. Friedmann and W. Alonso (ed.), Regional Development and Planning, 1964, pp. 425-426.

There exist so many regional development laws overlapping and somewhat contradicting with each other that it is hard to clearly generalize common principles, if any. In 1960 the Government adopted as its major economic policy the so-called Doubling National Income Plan submitted by the Economic Council. The most important feature of the plan was that it put priority on the "Pacific belt zone" in order to attain a high rate of national economic growth. Two years later, however, the Government mentioned the necessity of reducing the regional imbalance in income levels and proposed a sort of growth center strategy in the National Comprehensive Development Plan. Meanwhile, laws were enacted which aimed to develop lagging regions by financially supporting infrastructural improvement in these regions and by encouraging local tax allowances for attracting industries to these regions (1961). Most important of all, however, was the enactment of the Law for Promotion of the Establishment of New Industrial Cities (1962). The title of the law is somewhat misleading. The objective of this law is not to create "new towns," but to select several cities (or combinations of them) as "growth centers" and to financially support them so that they may grow larger and become economic and social nuclei which might stimulate growth in respective regions where they are situated. Forty-three areas applied, and fifteen were selected (1963).

At the beginning there was almost enthusiastic expectation that these centers would grow rapidly. Such expectation, however, has not come true. Table 5-2 shows the population trends of the selected centers. Let us see how the centers have grown. For the period 1960-65 the average growth rate of the centers was lower than that of the nation as a whole. (Compare A and B of Column I.) As a matter of fact

population decreased in five centers during this period, and only three out of fifteen centers increased their populations more rapidly than the national average.

During the period 1965-70 all the centers increased their populations and the average growth rate of the centers was considerably higher than the national average (A and B of Column II). It is important to note, however, that only six centers grew more rapidly than the nation as a whole. In fact it was due to a few rapidly growing centers (no. 1, 3, 4, and 10) that the average growth rate of the centers during this period was considerably higher than the national average.

We have seen that the growth centers, in general, have not shown any remarkable growth of population although there are a few exceptions. Figures about manufacturing products show similar trends. (See Table 5-3) It is disappointing that the average growth rate of the centers has been almost the same with the national average. For the period 1965-69 only seven centers achieved higher growth rates than the nation as a whole. The growth rates of three centers (no. 2, 10 and 13) were especially high. On the other hand four centers (no. 1, 4, 14 and 15) showed very low growth rates.

It is only two or three centers that are growing at a high speed in terms of both population and manufacturing products. Okayama (no. 10) may be the sole case which is obviously successful. There may be many causes why the centers have not grown as expected, but one of them is lack of financial support by the Government to these centers. It is not too much of an exaggeration to say that the Government has not made any sincere effort to encourage the growth of these centers in spite of the existence of the law mentioned before.

TABLE 5-2

Population Increase of Growth Centers
(1960-1970) (%)

	I 1960-1965	II 1965-1970
Dōō	20.7	15.1
Hachinohe	4.0	4.6
Sendai	8.2	8.5
Akita	2.7	8.1
Jōban	Δ 1.6	2.1
Niigata	3.3	2.7
Matsumoto	2.1	2.5
Toyama	0	1.9
Chukai	Δ 0.8	1.1
Okayama	5.2	12.9
Tokushima	1.4	3.1
Tōyo	Δ 1.7	0.5
Ōita	4.5	5.9
Hyūga	Δ 1.5	2.5
Shirahui	Δ 1.6	0.6
Average growth rate of centers	4.1	5.8
Japan	4.7	4.1

Source: Niigata Prefectural Government, Outline of Growth Centers, September 1970.

TABLE 5-3

Growth Rates of Manufacturing Products in Growth Centers (1960-69)

	I 1960-1965	II 1965-1969
Dōō	91.5	66.3
Hachinohe	99.1	131.3.
Sendai	123.2	84.5
Akita	75.8	49.5
Jōban	117.3	100.8
Niigata	50.2	92.6
Matsumoto	102.9	111.5
Toyama	70.4	96.0
Chūkai	64.6	109.3
Okayama	127.6	130.1
Tokushima	108.1	98.0
Tōyo	84.0	93.1
Ōita	106.2	130.4
Hyūga	101.6	67.6
Shiranui	71.0	75.2
Average Growth Rate of Centers	93.0	96.9
Japan	90.1	96.5

Source: Niigata Prefectural Government, Outline of Growth Centers, September 1970.

The situations of the growth centers are such that it is almost meaningless to examine their impacts on surrounding areas. So far, there seems to be no evidence to suggest that the centers have stimulated significant change in the lagging regions where they are located.

Although it is not clear on which the priority is placed, the "Pacific belt zone" or the lagging regions, the Government is heavily involved in the attempt to induce development in lagging regions. And the growth centers seem to be the major strategy for this purpose. Article one of the Law for Promotion of the Establishment of New Industrial Cities says that the objectives of the growth center strategy are to prevent an excessive concentration of population and industries in large cities, to reduce regional inequities, to eliminate the mismatch of jobs and people, and thereby to contribute to a balanced development of the nation and to a progress of the national economy. Besides the question whether the growth center strategy really works effectively for these objectives, we must also examine the relevance of the implicit assumptions on which these objectives are based. That is, why should poor regions be developed and why should the regional imbalances be eliminated? Are big cities really becoming too big? Is "balanced development of the nation" and "progress of the national economy" really compatible with each other? These basic questions will be discussed in the next chapter.

CHAPTER II

JUSTIFICATION FOR NATIONAL SUBSIDIES TO LAGGING REGIONS

Despite the common attempts being made by many governments in the world to develop lagging regions by subsidizing them in various ways it is not clear whether these attempts are theoretically justified from the national point of view. In Japan, just as in any other country, the political pressure claiming regional balance is indeed strong. Such claims, however, often simply take it for granted without any clear basis that poor regions should be developed, and neglect to consider the meaning of such a policy in the context of the national economy as a whole. The purpose of this chapter is to discuss whether there are economic and other grounds for national support to lagging regions.

There are two basic aspects from which the problem must be considered, equity and efficiency. Each aspect will be dealt with separately in turn.

Equity and Regional Development

One of the most often asserted bases for the development of lagging regions is the notion of equity. The concept of equity is very vague, but I shall not try to clarify it here. One distinction, however, is of basic importance: equity of people or equity of regions. I assume that equity among people is a most desirable policy goal. To assume this, however, does not necessarily lead to equity among regions. From the people-oriented point of view decline or growth of the area does not matter so much as the individuals' well-being. We can think of several situations in which individual people's well-being

does not mean the prosperity of the area. As a typical example, an area may become completely deserted because of outmigration of all the residents, but the migrants may be all better off in some other places. We can also think of such a situation as is cited below.[2]

> It is perfectly possible for the per capita income of a depressed region to drop, but for all individuals in it to be better off. The conditions are that the depressed region be subject to diminishing returns and that the higher-income members leave for other regions where their skills are better rewarded. Since the region is, in a sense, overpopulated (diminishing returns), the leaving of some raises the income of those who remain.

In Japanese regional development literature there are some arguments which confuse these two concepts. By "equity" it is often meant that the territory of the country is more evenly developed so that the population, economic activities, and income are more equally distributed throughout the country. Certainly, completely decentralized pattern of development--namely the development of every lagging region--will bring about more equity among people. But this is not the only way to realize equity if we take into account the possibility of human mobility. People can be encouraged to move out from depressed areas so that ultimately only prosperous areas remain. This is another possible alternative which might also bring about equity among people although the areal consequences would be very different. What is necessary for the equity argument to be a justification for the development of lagging regions is to show that developing lagging regions contributes to equity among people more effectively than encouraging already prosperous regions to grow further. (For the present purpose we are assuming

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[2] W. Alonso, "Equity and Its Relation to Efficiency in Urbanization," Working Paper No. 78, Center for Planning and Development Research, University of California, Berkeley, 1968, p. 10.

that the territory of the country is divided into either lagging or prosperous regions.) In other words it is necessary to show that outmigration from lagging to prosperous regions actually results in widening of inequity either by further impoverishing the people who stay in lagging areas, by further impoverishing the migrants, or both. Theoretically, the various effects of outmigration can be summarized as follows.

The favorable effects are: (1) decrease in the level of un- and under-employment in the area, and (2) rise in the wage level of the area. The wage levels are decided by two variables--the relation between labor supply and job opportunities, and marginal productivity of labor. Needless to say about the first variable, outmigration may have favorable influences on the second variable, too. It will raise the capital-labor ratio, and thus marginal productivity of labor. Furthermore, the existence of surplus labor which can be hired at low wages encourages labor-intensive activities rather than capital-intensive ones, and thus reinforces the low capital-labor ratio pattern. Outmigration will cut the link.

On the other hand, however, there are many difficulties which are caused by outmigration.[3] (1) First of all, it is often pointed out that it is the young, skilled, educated people who tend to move most readily. The area, consequently, is sapped of its vital and most needed elements, and the age distribution will become skewed in favor of the older groups. To cite the case of Japanese rural areas, the Government's White Paper on Agriculture for 1971 recently revealed that,

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[3] See for example, J. B. Parr, "Outmigration and the Depressed Areas Problem," Land Economics, 42, May 1966.

as of January 1, 1970, old men over the age of 60 accounted for 12 percent of the population engaged in farming and women 57 percent, or close to 70 percent of Japan's farmers are old men or women. In fact, there were some 1,880,000 farming households without any male worker under 59 years old, or an astonishing 35 percent of the total farming households.[4] This selectivity of outmigration appears to be an important factor inhibiting the adjustment of remaining resources in agriculture. Older farmers are less likely to undertake drastic reorganizations of existing resources because of limits of their physical capabilities and the limited span over which they might realize returns on large investments. Further, in order for the recombined resources to be productive new technology, new investment and new management skills are required. But most of the people capable of making such adjustment may be among the migrants.[5] (2) Secondly, even if there still exists general surplus of labor, the area may come to lack labor in certain sectors of the economy as a result of outmigration. If this occurs in key sectors, the downward multiplier effect will adversely influence the area's economy to a great extent. (3) Thirdly, there are many disadvantages which will be caused by depopulation --- reduction of tax base (which will result in higher tax, or more probably, deterioration of public services), decline of the value of real estate, and shrinking of local market.

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[4] The Japan Times, Tokyo, Japan, April 19, 1971.

[5] D.E. Hathaway, "Migration from Agriculture: The Historical Record and Its Meaning," in J. Friedmann and W. Alonso (ed), op. cit., pp. 481-482.

The ultimate and over-all effects of outmigration on the area cannot be determined before all these advantages and disadvantages are examined and compared. With empirical evidence, however, it is hard to show whether outmigration has favorable or unfavorable effects on the economic levels of the lagging areas. Let us turn to Japanese data for a while (see Table 6).

There is a clear distinction in regional growth rates of per capita income between the latter 50's and the first half of the 60's. (Column I and II). During the latter half of the 50's it was such prosperous regions as Southern Kanto, Tokai, and Kinki that showed relatively high growth rates of per capita income, and the rates in lagging regions were generally low. During the next five years (1960-65), however, many lagging regions showed remarkably high growth. In contrast to the former period lagging regions achieved higher growth rates than the national average, whereas the growth in the prosperous regions slowed down. Figures of total income show the similar tendency. There is no attempt here to examine what made this apparent change, but it is interesting to note that the rapid growth of income in lagging regions corresponds to the rapid decrease in population in these regions during that period. For instance, in Tohoku and Kyushu, typical lagging regions in Japan, the population increased for the period 1955-1960, while during the next five years the population decreased (Column IV and V). The reverse is true in both regions as for income. Per capita income grew less than the national average during the latter 50's, but grew more rapidly than the nation as a whole during the next five years. We can see the general trend more clearly by comparing Column III and VI. Every region in which population decreased more

TABLE 6

Growth of Per Capita Income and Population Increase by Regions (1955-65)

	I	II	III	IV	V	VI
	Per Capita Income Growth (Yearly Rate, %)			Population Increase (5 Years, %)		
	55-60	60-65	(II-I)	55-60	60-65	(V-IV)
Hokkaido	8.0	12.5	4.5	9.2	2.9	Δ 6.3
Tohoku	8.7	15.0	6.3	2.9	Δ 2.3	Δ 5.2
N. Kanto	10.6	15.1	4.5	0.7	Δ 1.1	Δ 1.8
S. Kanto	12.6	13.3	0.7	12.7	17.4	4.7
Hokuriku	9.7	13.7	4.0	1.4	Δ 1.5	Δ 2.9
Tosan	10.7	14.5	3.8	1.3	Δ 0.1	Δ 1.4
Tokai	13.0	11.9	Δ 1.1	7.0	9.5	2.5
Kinki	11.4	13.8	2.4	9.1	11.9	2.8
San'in	8.4	12.7	4.3	Δ 0.4	Δ 4.8	Δ 4.4
Sanyo	10.0	13.7	3.7	2.7	0.2	Δ 2.5
Shikoku	9.1	14.3	5.2	0.4	Δ 4.0	Δ 4.4
N. Kyushu	8.0	14.2	6.2	4.6	Δ 4.0	Δ 8.6
S. Kyushu	9.3	15.8	6.5	1.5	Δ 6.3	Δ 7.8
Japan	11.1	13.3	2.2	5.8	4.7	Δ 1.1

Source: Toyo Keizai Shinpo-Sha, Inc. Chiiki Keizai Soran, 1971.

rapidly than the nation as a whole achieved a higher growth rate than the national average. This is especially clear in the lagging regions such as Tohoku and Kyushu. In contrast to this in the prosperous regions such as Southern Kanto, Tokai, and Kinki, where population increased, the growth rates of per capita income increased only very slowly or even decreased. These figures by no means indicate that higher growth rates of income were caused by decrease in population, but the general correlation of the former to the latter is clear as far as this period is concerned.

There are, however, many studies in the United States which indicate that population movements are not corrective in an income equalizing sense. For instance, Hathaway concludes:[6]

> Without out-migration the present problems of United States agriculture would have been magnified manyfold, and the gap between per capita incomes in the farm and nonfarm ecnomy certainly would have been widened. As yet, however, there is no evidence that the rapid rate of out-migration has appreciably closed the gap that existed in per capita incomes of farm and nonfarm people. Neither has the migration from agriculture apparently significantly changed the per capita income distribution between regions in agriculture.

Turning now to the economic conditions of the rural migrants in cities, Japanese data are not available. But studies in this field abound in the United States. With a few major exceptions[7] they all agree that most rural migrants experience major gains in income although

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[6] D. E. Hathaway, op. cit., p. 485.

[7] D. E. Hathaway and B. Perkins, "Farm Labor Mobility, Migration, and Income Distribution," American Journal of Agricultural Economics, May 1968.

---, "Occupational Mobility and Migration from Agriculture," in the President's Advisory Commission on Rural Poverty, Rural Poverty in the United States, 1968.

they still remain poor.[8] The profile of migrants after five years of urban living closely resembles the profile of total urban population. If this is true also in Japan, and if it is true that depopulation (outmigration) has, on balance, favorable or neutral effects on the lagging regions, then to encourage outmigration might be a very effective policy for the equity objectives.

The foregoing argument might seem to suggest that the development of lagging regions goes against the equity objectives, but I am not suggesting this. I have emphasized the possibility of outmigration to show that the areal development of lagging regions (creation of employment) is not the only way, or even the best way, to help the poor people living there. To repeat, the regional development of lagging regions does contribute to the equity objectives, but the equity arguments

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[8] Abt Associates, Inc., The Causes of Rural to Urban Migration Among the Poor, OEO Contract No. 399-4841, March 1970.

P.M. Blau and O.D. Duncan, The American Occupational Structure, 1967.

Bureau of Social Science Research, Inc., Southern Migrants to Cleveland, U.S. Department of Labor, Manpower Administration, Contract No. 81-09-66-27.

D. J. Bogue, "Internal Migration," in P.M. Hauser and O.D. Duncan (Ed.), The Study of Population, 1959.

H. M. Hansen, Rural Poverty and the Urban Crisis, 1970.

J. B. Lansing and J. N. Morgan, "The Effects of Geographical Mobility Upon Income," The Journal of Human Resources 2, Fall 1967.

I. Lowry, Migration and Metropolitan Growth, 1966.

TRACOR, Inc., A Study of Economic Consequences of Rural to Urban Migration: A Final Report, Vol. I, OEO Contract No. 3 89-4549, December 1969.

cannot wholly justify the attempt, even if disregarding the efficiency objectives, in the sense that the area development might not be the best way.

Regional Development and National Economic Efficiency

As a matter of fact it is not from the point of view of equity, but of national economic efficiency that the attempt to subsidize lagging regions is a controversial issue. Roughly speaking, various arguments as to this problem fall into two categories, those which are based on capital-output ratio and those which are concerned with optimum city size (population). Each will be reviewed in turn.

Capital-Output Ratio Approach. This approach puts the problem in this way: where is the increase in national output per unit of additional investment maximum? In other words, is the marginal capital-output ratio lower in lagging areas or prosperous areas? There are some case studies. For instance, H. B. Chenery, in his case study of development policies for Southern Italy, examined the pattern of investment over the period 1951-59 and its effect on output. He calculated the marginal capital-output ratio for this period measured as gross investment/increase in gross product, and concluded that in Southern Italy

> the capital required per unit of increase in regional output has proven to be very high, yielding a gross capital-output ratio of between 5 and 6 in comparison with the ratio of between 3 and 4 obtaining in the rest of Italy...[9]

This is, of course, a case study concerning a particular country for a specific time period. So far there exists no systematic

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[9] H. B. Chenery, "Development Policies for Southern Italy," in J. Friedmann and W. Alonso (Ed.), op. cit., p. 698.

theory or empirical study as to this matter, and there is no consensus. In general, however, it seems to me that Chenery's findings in Italy suggest the general tendency. Lagging regions usually lack infrastructure, external economies and other locational advantages, and this seems to imply lower increase in output per unit of investment in these regions. I am not suggesting that the capital-output ratio in the lagging region is higher than in highly concentrated urban areas, where the marginal ratio could be very high. What I suggest is that it seems improbable that the ratio is the lowest in lagging regions, or is lower in lagging regions than in other prosperous areas. It is difficult, therefore, to justify investment in lagging regions from the point of view of maximizing national product. Four points must be added to the very rough argument above.

First of all, if we assume that labor is immobile, investment in lagging regions can be said to be very efficient. Under this assumption, one could argue that "increase in real output is higher in lagging areas than in prosperous areas, because the subsidized increase in output in the prosperous region is the incremental gross output minus the opportunity costs of labor, whereas in the lagging areas unemployed labor has no opportunity costs."[10] It is true also in Japan that there is high unemployment in lagging areas. Table 7 shows that in almost all prosperous prefectures the number of jobs offered exceeds that of persons seeking jobs. In lagging prefectures the reverse is generally true, especially in Tohoku and Kyushu the ratios are very high. (There are, however, many exceptional prefectures which are

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[10] G. C. Cameron, Regional Economic Development: The Federal Role, 1970, p. 25.

considered lagging but have low rates, for instance no. 1, 15, 16, 19-21, 29, etc.) But there is no reason to neglect the possibility of outmigration, and so we cannot say that the opportunity costs of labor are zero or even significantly lower in lagging areas. As a matter of fact, however, we cannot expect that labor is completely mobile so long as human beings are not robots which can be freely moved according to economic principles. The attempt to create employment opportunities in lagging areas is efficient to the extent that any policy of encouraging labor migration cannot be completely successful.

Secondly, there may be lagging regions with utilizable and underused social and economic overhead capital. If and where such conditions exist, "an unfavorable private rate of return on capital could be offset by the low marginal public investment cost of raising output, so that the social (public and private) incremental capital-output ratio might be highly favorable."[11] Such conditions (under-utilized overhead capital) are not unlikely to exist in those depressed areas where once prosperous industries have declined or in those lagging areas where infrastructural improvements have been done in the hope that industries might come. Those lagging areas which have never been fully industrialized, however, are not likely to have under-used and utilizable overhead capital.

The third point which must be mentioned is the necessity of non-aggregate point of view. Even if an aggregate observation indicates that the capital-output ratio is higher in lagging areas, this does not mean that it is so in every specific case. Investment in a specific infrastructure might yield higher output in a certain lagging area

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[11] G. C. Cameron, op. cit.

TABLE 7

The Ratio of the Number of Persons Seeking Jobs
To the Number of Jobs Offered by Prefectures (1965-1968)

	1965	66	67	68
Hokkaido	1.2	1.1	1.1	1.0
	5.6	6.5	5.8	4.9
	2.5	2.6	1.9	1.7
	2.1	2.3	1.8	1.6
Tohoku	6.9	5.4	5.0	4.4
	3.2	2.8	2.5	2.4
	2.2	2.1	1.6	1.3
	0,9	0.9	0.6	0.5
	1.1	0.9	0.6	0.5
	0.8	0.5	0.5	0.5
	1.1	0.9	0.6	0.5
Kanto	1.6	1.3	0.8	0.7
	1.7	1.3	0.9	0.8
	1.2	0.9	0.5	0.4
	1.7	1.5	1.2	0.9
Hokuriku	1.9	1.7	1.1	0.8
	1.3	1.5	1.1	1.0
	2.0	1.3	1.2	1.6
	0.7	0.7	0.6	0.5
	1.1	0.9	0.7	0.6
Tosan & Tokai	0.7	0.8	0.5	0.4
	0.6	0.6	0.4	0.4
	0.5	0.5	0.2	0.2
	1.2	1.2	0.8	0.7
	0.8	0.9	0.6	0.5
	2.1	1.6	1.2	1.1
Kinki	1.3	1.0	0.7	0.6
	1.9	1.5	0.9	0.8
	0.9	0.7	0.5	0.6
	1.2	1.5	1.1	1.1
	2.5	2.0	1.6	1.4
San'in & Sanyo	2.0	1.8	1.4	1.2
	1.2	1.0	0.7	0.6
	1.6	1.1	0.7	0.7
	3.1	2.7	1.8	1.6

	65	66	67	68
	3.3	2.6	2.3	1.9
	1.3	1.3	0.9	0.8
Shikoku	3.4	2.9	2.1	1.7
	8.4	7.9	6.5	6.8
	4.9	4.7	3.8	3.5
	3.6	3.3	2.5	1.9
	2.7	2.8	2.0	1.9
	4.1	3.4	3.0	2.7
Kyushu	3.5	3.0	2.9	2.9
	4.7	4.4	3.8	3.7
	7.9	7.3	6.2	5.8
Japan	1.6	1.4	1.0	0.9

Source: Bank of Japan, Bureau of Statistics. To-Do-Fu-Ken-betsu Keizai Tokei (Economic Statistics by Prefectures), 1969.

than in the prosperous region, and it is these specific, non-aggregate considerations that are actually needed in formulating investment priorities.

Lastly, the time horizon is crucial in comparing capital-output ratio among various regions. For instance, Chenery's findings as to Italy, which were cited before, could be interpreted as saying that the time period of ten years is too short for a proper test of the effects of investments on output increase. I have suggested that lack of external economies in lagging areas causes higher marginal capital-output ratio than in prosperous areas and that, therefore, it is economically inefficient to invest in lagging regions. In a much longer run, however, we could argue that investments might eventually bring about development in the lagging regions and with it external economies, and thus will make the capital-output ratio as favorable as in other prosperous areas. Needless to say, many areas may remain underdeveloped in spite of investment for the relevant range of time horizon, and in this case the argument above is not relevant.

Optimum City Size Approach The problem of efficiency is also discussed from the standpoint of optimum city size (usually measured by population). There seems to be an implicit general agreement in most Japanese literature on urban problems that big cities have become so large that they incur substantial diseconomies of scale. The attempt to develop lagging regions is usually based upon the same implicit assumption that existing large agglomerations are already too big. Economic theory and empirical evidence, however, indicate that even the largest cities are not too big from the economic point of view of productivity.

The traditional and the most common approach to the question of city size is to study how per capita public costs vary with urban size. There have been a number of such studies, and "in general they have found them (public costs) U-shaped, with the bottom of the curve occurring variously between 10,000 and 250,000 population."[12] In general, however, these findings are of limited value. W. Alonso has mentioned three principal difficulties:[13] (1) These measures of cost measure only inputs, and implicitly assume that outputs are constant. (2) The division between private and public costs is very much a matter of institutional convention. (3) Many of the components of costs may not be real economic costs. For instance, a high salary of a teacher in a large city where teachers are unionized.

The minimum costs approach is clearly insufficient even from the narrow view-point of economic efficiency, because it neglects the output side of the matter. In fact, there is accumulating a body of evidence to suggest that per capita output continues to rise with increase in the size of agglomeration. It is inadequate, therefore, to regard big cities as inefficient simply because of the high costs, and the objective of a sound policy must be concerned with both inputs (costs) and outputs (products). According to Alonso, in every country for which he has found evidence, "local product per capita (or some index for it, such as wages or income) rises with urban size, and where comparable figures on cost are available, these rise far more slowly if at

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[12] W. Alonso, "The Economics of Urban Size," Working Paper No. 138, Center for Planning and Development Research, University of California, Berkeley, 1970, p. 3.

[13] Ibid.

all."[14] The data for Japan typically demonstrate this.[15] Mean per capital income in 1965 smoothly rises from 188,000 (yen) in the least density prefectures to 340,000 in the densest prefectures. While the curve of mean per capita government expenditure is U-shaped, it is very shallow. The result is that the difference between these two figures (income and government expenditure) increases in a clearly progressive way with population density. It is not clear whether this trend continues without limit or the reverse trend appears in the biggest cities if they continue to grow bigger, but this does not prevent us from concluding that the existing biggest cities have not yet reached excessive sizes from the view-point of economic efficiency.

The relation between city size and national economic efficiency can be explained more clearly in abstract theory. A possible set of cost and product curves is shown in Figure 1. If we accept this general formulation, the following can be said.

> The point of maximum local contribution to national income occurs at Pc, where marginal costs (MC) is equal to marginal product (MP)... A national government interested exclusively in maximizing total product under conditions of labor surplus, would use such a population as its target. However, if there is not an unlimited supply of labor, the population size that would maximize national product would be smaller and would occur where the difference between MP and MC is equal to the opportunity costs similarly defined at alternative locations. From the point of view of the inhabitants of the city, however, a more sensible objective would be the maximization of the difference between average product (AP) and average costs (AC).[16]

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[14] W. Alonso, "The Economics of Urban Size," p. 10

[15] K. Mera, "On the Concentration of Urbanization and Economic Efficiency," as quoted in W. Alonso, "The Economics of Urban Size," p. 12.

[16] W. Alonso, "The Economics of Urban Size," pp. 8-9.

Source: Copied from W. Alonso, "The Economics of Urban Size"

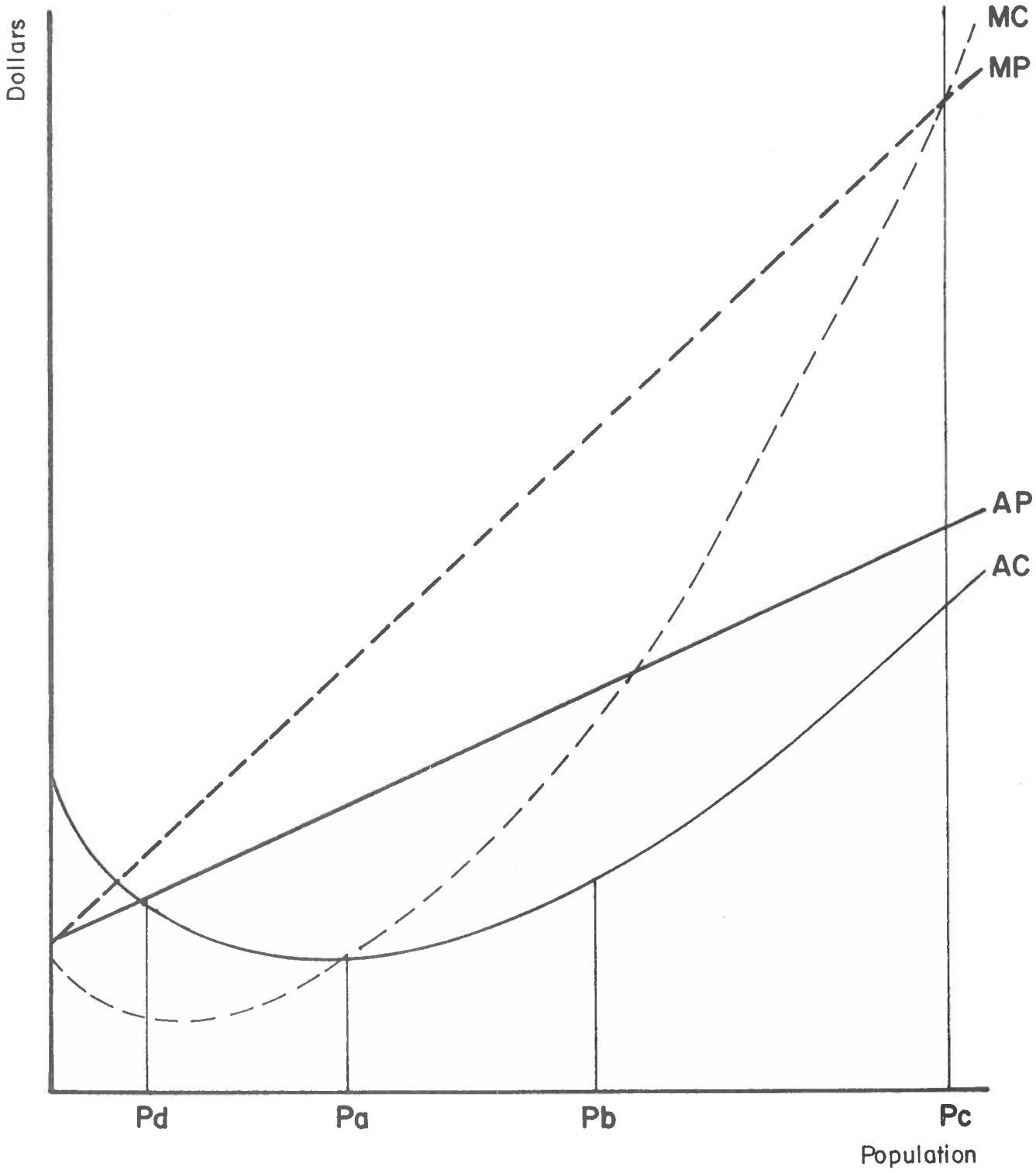

Figure 1: URBAN COST and PRODUCT CURVES with CITY SIZE

It is also clear that the attempt to subsidize small cities and towns in lagging areas can be justified from this point of view only if the difference between MC and MP were smaller in the large cities than in these lagging areas. We have already seen that the difference between AP and AC increases with urban size. Mathematically, however, increasing difference between AP and AC does not mean increasing difference between MP and MC.[17] We do not have any reliable marginal figures, so we do not know whether or not small towns must be subsidized from the national point of view. Nor do we know whether or not our biggest cities are encouraged to grow further from the national point of view, although we have evidence to suggest that they are not yet too big from the economic view-point of the inhabitants of these cities.

Major difficulties and weak points of the above approach will be briefly mentioned in the following. First of all, although such curves as described in Figure 1 greatly contribute to the simplification and clarification of the problem, it is not clear what the urban costs are. Secondly, it seems difficult to isolate the effect of population size on output, if there is any. Even if we generally accept such a relation between population and productivity as shown in Figure 1, the increase in productivity may not be attributed positively to the population size. If this is the case, the interesting findings that productivity rises with urban size do not have any policy implication as to city size.

Thirdly, we have considerable evidence as far as the average trends are concerned, but we have almost no evidence to

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[17] By the assumption that (AP-AC) is increasing, we can only say that (MP-MC) $>$ (AP-AC).

indicate marginal trends. Fourthly, there is an inherent weakness of an aggregate approach. Fifthly, the approach is of course insufficient from a wider point of view. The question of city size was considered almost exclusively from the point of view of economic efficiency. The city was regarded as an aggregate productive unit, and other important functions were omitted. Actually, however, big cities seem to be producing many damaging non-economic effects on the residents, and as a place to live in big cities might be already too big, although it is very difficult to quantatively articulate these non-economic factors such as lack of greens.

Summary and Concluding Observations

No clear-cut conclusions emerge from the foregoing discussion. The attempt to support lagging regions has been examined from the standpoint of equity and efficiency separately. As for equity, development of lagging regions will certainly reduce inequality. However, the opposite is not true in the sense that helping poor areas is not the only way of bringing about equity among people, if we take into consideration the possibility of migration. It is not clear theoretically and empirically what pattern of regional development, concentration or dispersal, most effectively reduces inequity among people.

Two approaches to the efficiency aspect of the problem have been roughly reviewed. The attempt to induce economic growth in lagging areas cannot be positively justified either by capital-output ratio approach or optimum city size approach. Thus, the attempt is more likely to find its justification, if any, in equity

objectives rather than efficiency objectives. Such a simplified statement, however, does not correctly describe the real situation.

The justification depends basically upon two things. First, there is factual uncertainty as to what might be the consequences of the attempt in terms of, for instance, equalization of per capita income or capital-output ratio, etc. The justification depends on the probability for these desirable or undesirable consequences to occur. Second, the conclusion may vary depending on the weight or priority which we put on each of these consequences. Especially, it is crucial on which we put the higher priority, equity objectives or efficiency.

CHAPTER III

MEASURES TO DEVELOP LAGGING REGIONS

Basic Alternatives

It was shown that there is no clear-cut answer to the question of justification for national involvement in the development of lagging regions. This means that the objectives themselves are controversial issues. But we pass to the question of how to develop lagging regions.

In general there are four basic alternatives: industrialization, modernization of agriculture, development of tertiary activities, and encouraging outmigration. The first alternative is widely recognized. As a matter of fact, too exclusive an emphasis is often placed on it, so much so that "industrialization" and "development" are sometimes used interchangeably. There are no a priori reasons, however, to expect local industrialization to be the optimal policy. First of all, although the manufacturing sector is growing in contrast to declining agriculture, the tertiary sector is growing faster in the nation as a whole. In fact, the highly income-elastic demand for the tertiary activities makes them the most promising industry in a growing society. Many tertiary activities, however, especially prefer to locate in big cities, so development strategies for backward areas cannot always depend upon this sector. However, promotion of such activities as recreation, tourism, and historic preservation might

be very helpful in some cases. Secondly, although agriculture is rapidly declining, it is not practical to try to attract industries to every lagging rural area regardless of the growth potentials of the area. In this sense modernization of agriculture must be considered concurrently with other measures. Lastly, to summarize in other words, an aggregate approach is clearly insufficient for establishing actual strategies for specific regions. Regions have different relative advantages and disadvantages for each industry in terms of access to basic inputs and markets, and this gives rise not only to different growth potentials but also to different growth sequence.[18]

In spite of all this we basically assume one thing, namely the decline of agricultural employment is inevitable in the long run. Japanese agriculture can be improved in several ways. Firstly, there seems to be misallocation of agricultural resources. Too much and too constant emphasis has been placed on the rice crop in spite of changing demand. This is mainly due to the staple-food management by the Government. Secondly, more capital can be invested in order to raise productivity. The capital-labor ratio, and consequently the productivity per worker, of Japanese agriculture is low. Investment, however, cannot solve the problem of narrow land in Japan. It is important to note that the productivity per unit area is much higher in Japan than most Western countries in contrast to the lower productivity per worker. (See Table 8) This suggests that the real problem of

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[18] H.S. Perloff with V. W. Dodds, How a Region Grows, Committee for Economic Development, Supplementary Paper No. 17, 1963.

TABLE 8

International Comparison of Agriculture

A. International Comparison of Agricultural Productivity (1966)
(In dollars and in percent)

	Japan	W. Germany	France	Italy	Nether-lands	Belgium
Labor Productivity	852 (100.0)	1,742 (204.5)	2,204 (258.7)	1,451 (170.3)	3,749 (440.0)	4,260 (500.0)
Land Productivity	1,335.7 (100.0)	344.2 (28.0)	219.7 (16.5)	355.9 (26.7)	676.3 (50.6)	552.4 (41.4)

Notes:

1. Sources: EPA: National Income Statistics. Prime Minister's Office: Labor Force Survey. OECD: National Accounts of OECD. Manpower Statistics.
2. Productivity is calculated on the basis of value added per worker or per 1 ha of agricultural land. Figures in parentheses are percentages of Japan as 100.

B. International Comparison of Average Farming Land Area Per One Operating Unit (h.a.) 1965

Japan	W. Germany	France	Italy	Belgium	U.K.	U.S.
1.2	11.2	18.6	4.0	10.6	52.1	120.1

Source: Japanese Government, Economic Planning Agency. Economic Survey of Japan (1969-1970)

Japanese agriculture is ultra-smallness of land per worker. Apparently land is very limited in Japan, and it seems that the only solution for the low productivity per worker is the reduction in the number of workers.

A real difficulty, however, exists on the demand side. The demand for agricultural products seems to be destined to decline relatively to non-agricultural products in an environment of rising income, because income elasticities of demand for agricultural products are low compared with non-agricultural products. Price elasticities of demand for agricultural commodities also appear to be low, so even if the prices of agricultural commodities go down due to technological change or any other reason, the demand will not increase significantly.

From these reasons I believe that agricultural employment (including owner farmers) will decline inevitably in the long run, and that, therefore, there is little reason for sticking to it. I do not believe the doctrine of "labor of zero value," i.e., a great proportion (say, 25 per cent) of agricultural labor force is free labor in the sense that it is available for other purposes at no cost except that of transfer. I do believe, however, that transfer of more agricultural labor to other sectors is pertinent, basically because agriculture is the lowest-productivity sector currently and because it is likely to decline further in the future. In the following, therefore, I shall concentrate on measures to attract the secondary and tertiary activities to lagging regions.

Infrastructural Improvement

To improve infrastructure in order to attract industries is a very common attempt, but its effectiveness is not clear.

The question can be posed in this way: to what extent does public investment in infrastructure influence the location decisions of different types of industry? Views as to this question range widely from optimistic ones to very pessimistic ones.

We start with the fact that there is much uncertainty about the causes of industrial location. There are many factors which are vital to location decisions of firms. Location theory and the surveys of business executives generally indicate that important factors include: accessibility to markets, labor costs (wages and productivity), availability of labor (skills and supply), accessibility to raw materials, power, taxes, community factors, site factors, etc. These locational factors are not of similar importance for various types of industries, depending upon different cost structure of different industries. So, there is need to classify industries in detail in order to tell what the vital location factors are for a specific industry. There is consensus so far. However, somewhat different views emerge from this as to the role of public investment in infrastructure.

Some emphasize that several of the locational factors vital to locational decisions of industries can be affected by governmental decisions. For instance, among the factors mentioned earlier accessibility to markets and raw materials can be improved by public investment in transportation facilities such as roads and ports. The same can be said of community facilities such as housing, supply of water and electricity, industrial sites, and taxes. (The last factor will be discussed separately later.)

In contrast to this, one might emphasize those factors which are beyond the influence of governmental investment in infrastructure.

The importance of external economies is emphasized in this context. Various external economies result from existing concentrations of economic activities and population. Although it is hard to quantify external economies, if we assume them to be real and if these external economies, together with other locational factors not amenable to governmental policy, are more influential than infrastructure, then one might even say that infrastructure has no significant influence on location decisions, and that infrastructure follows location decisions rather than motivates them.

There is, of course, a little more moderate view. According to M. A. Toborg,[19]

> While certain public facilities are essential to industrial location, so many other factors are so much more important that the provision of the public works alone will have little impact on the area's ability to attract industry. Indeed, firms may be willing to pay the cost of sewers, access roads, etc., if significant other location advantages are present in the area.

Obviously, the slight differences among these views come from the different weight which each view places on the relative importance of infrastructure. There seems to be some evidence to suggest that major factors influencing location decisions of firms are markets, labor and raw materials, but not infrastructure.[20] It is impossible, however, to make any general conclusion without classifying various industries. Moreover, it seems to me that the relative importance itself of infrastructure may vary depending

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[19] M. A. Toborg, "Growth Centers: Potential Focal Points for Development Policy?", Economic Development Administration, 1967, p. 14.

[20] M. A. Toborg, op. cit., pp. 12-13.

upon the existence and levels of other location advantages. For instance, if other location advantages are zero or minus, the relative importance of infrastructure is also zero in the sense that no industry will come however high the level of infrastructure might be. But if there are other advantages in the area, the relative importance of infrastructure might be greater in the sense that sufficient level of it makes it easier to attract industries. This suggests that although sufficient level of infrastructure is a favorable, or perhaps even a necessary, condition for attracting industries, even a very high level of infrastructure does not assure industrial expansion if the area lacks other locational advantages. This is called the "permissive nature of infrastructure."

It is very difficult to show quantitatively by empirical data the favorable impacts of infrastructure on industrial location. There are many anecdotes of failures for improved infrastructure to attract industries. No case seems to have been reported in which infrastructural improvement positively influenced industrial location. But there are no systematic studies. Any systematic study must identify the relationship between net infrastructural investment and the attraction of net private capital which otherwise would not have been invested in the area. But there are several difficulties. In the first place, it is hard to isolate the immediate effects of infrastructural investment from those effects caused by other location factors. Even if there occurred significant industrial growth after infrastructural improvement, it might have been caused by, for instance, expansion of nearby metropolitan areas, and the growth might have occurred

without any improvement of infrastructure. However, the opposite anecdotes (no growth in spite of infrastructural improvement) suffice to indicate the "permissive nature" of infrastructure. Secondly, there is a problem of the amount and type of investment. The favorable effects of infrastructural improvement may rise proportionately with the amount of investment, but they may not. There might be a certain threshold level under which differences in the amount of investment do not make any significant differences in the impacts on industrial location. The same might be said of investment above a certain upper level. The variety of the types of infrastructure further complicates the matter. Infrastructural improvement may not yield expected results, because the amount is not sufficient, or because some type of investment especially lacks. Needless to say, the time horizon is also crucial in determining the effects of investment. Due to lack of sufficient analysis of these complexities many anecdotes are of limited value.

Tax Incentives

Infrastructural investment and tax incentives are the two major measures taken by the Japanese government to attract industries to lagging areas (and to growth centers). On the abstract, theoretical level there is no need to treat them separately. Almost all that has been said of infrastructural investment is also relevant to various tax incentive policies. As for tax influences on location of firms, J.F. Due gives a wide-range review of the major studies and various approaches taken in the United States.[21]

[21] J. F. Due, "Studies of State-Local Tax Influences on Location of Industry," National Tax Journal, Vol. XIV, No. 2, June 1961.

The following is a rough summary.

The first approach is statistical comparison of the relative rates of growth in various states and the relative tax burdens. These studies have several weaknesses: there is no isolation of other factors influencing manufacturing growth; they do not concentrate attention on the marginal zone, namely on the group of firms which have any significant choice in location; differences in type of tax are ignored; and they can never provide answers to the question: would the rapidly growing state have grown still more rapidly had it not been for the higher tax burdens? Nevertheless, they do indicate that higher business tax burdens are not having any measurable effects in slowing down the rate of growth.

Secondly, there is the interview approach. Business executives tend to overemphasize the importance of tax burdens in the hope that their answer might influence the governmental policies. The result of interviews differ significantly depending on which of two types the interview is: those enquiring about the general factors affecting location or those specifically asking about tax influences. In the former type interviews only 5-9 per cent of the firms interviewed mentioned tax as an unfavorable location factor, whereas about 15 per cent in the latter mentioned it.

The third approach is analysis of tax effects in terms of cost. Various studies of this type found that state-local taxes represent only a small percentage of total costs, and concluded that the major cost items such as wages are so much greater in total magnitude that very small wage differentials will have

tremendously greater influence on relative costs in different locations than great percentage difference in taxation will have.

In general these studies tend to agree that tax incentives are a relatively unimportant secondary factor in location choice.

In addition to these findings summarized by Due, there is the often asserted fear that special tax concessions to new industries might set in motion a self-defeating cycle of competitive tax undercutting. And if tax concessions are made widely available on a geographical basis, tax incentive effects will be cancelled out.

There are many other location incentives such as government loans of low interest, grants, government factories, industrial parks, etc. However, the basic character of these location incentives appear similar to infrastructural improvement or tax concessions in that they are not likely to be "propulsive" factors which might influence location decisions. The conclusion of this chapter is a very pessimistic one. Namely, in general it is very hard to induce industrial growth in lagging areas by means of governmental measures such as investments in infrastructure and tax incentives.

CHAPTER IV

GROWTH CENTERS

In many countries an increasing emphasis is placed on growth centers as the major regional development strategy. In Japan also, as roughly described in the first chapter, fifteen areas designated as growth centers are expected to play an important role in developing backward regions. Growth center strategy is characterized by its objective of "concentrated decentralization."[22] At the national level the growth center policy tries to disperse growth from already big agglomerations to backward regions. At a smaller regional level, however, it tries to concentrate investments in a relatively small number of selected areas which are actually growing or have high growth potentials. In other words the policy aims to bring about economic growth to lagging areas not by directly supporting each of them, but by indirectly helping the growth of lagging areas through concentrated investments in a few growing centers to encourage their further growth.

The theoretical and empirical basis of this strategy is not firm. The rationale for this indirect approach has two elements: the growth of the subsidized centers themselves and the transmission of growth to their less-developed hinterlands. Each will be examined in turn.

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[22] L. Rodwin, "Metropolitan Policy for Developing Areas," Daedalus, Winter 1961.

The Case for Growth Center Policy

We have already discussed from various points of view the pro and con for the attempt to induce economic growth in lagging areas. The arguments in chapter 2 were at the national level, but basically they are applicable to any regional level. If we could generally conclude that investments had better be concentrated in prosperous, rather than lagging, regions of the nation, then we could also say by the same token that investments had better be concentrated in prosperous prefectures within the regions, prosperous cities within the prefectures, and so on endlessly. In fact, however, we have seen that there is no such clear-cut conclusion. Nevertheless, various approaches and general conclusions presented there (Chapter 2) are also relevant to the question of growth centers: Given a certain amount of capital available for public investment in a certain region, which way is better, to concentrate it in a few growth centers or to disperse it to the lagging hinterlands? I shall not repeat the arguments here.

It appears, however, that the most convincing explanation for concentrating development efforts in growth centers consists not in national economic efficiency nor in equity, but in the infeasibility of initiating growth in lagging areas. The growth center strategy is based upon the recognition that lagging areas can be developed much more easily by expanding the growth of near-by centers than by initiating new growth independently there, if the latter is possible at all events.

If we knew the causes, process and mechanism of the spatial incidence of growth, it would be much easier not only to foretell

an area's future but also to newly create growth in a specific area which we choose. In fact, however, the theoretical and factual bases are very weak for growth as a spatial phenomenon (agglomeration). Nevertheless it seems rather clear from historical evidence that growth, in general, occurs around urban agglomerations. There must have been some reasons for these developed areas to jump into the first stage of growth. But whatever the original advantages might have been, these areas have additional advantages, because various external economies arise from the established concentration of economic activities. "To the extent that the existing distribution of economic activity yields external economies, ... decisions made in the past will, in part, be reflected in current location decisions. As a result, there is a built-in tendency for further concentration of economic activity in given areas."[23] The growth in these areas then spreads to adjacent areas. (This will be discussed in the next section.)

I do not deny of course that sudden growth can occur by change in some important conditions in a remote lagging area. However, we do not have any practical tools to deliberately make this happen with certainty. We have already seen that governmental measures for inducing growth are at most permissive in nature and that it is difficult to "turn the tide" by means of investments in infrastructure, tax incentives, etc. Then, what can we do to develop lagging regions? To expand the growth in existing urban

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[23] United States, Advisory Commission on Intergovernmental Relations, Urban and Rural America: Policies for Future Growth, April 1968, p. 44.

agglomerations appears to be the only, if any, workable solution to this problem.

We add two more points which support the growth center strategy. Both of them relate to migration. Firstly, we have already seen that rural migrants generally experience major gains in income after they migrate to cities. Furthermore, the data for the United States show that rural migrants do better in medium size cities than in large ones.[24] This is because their skills are more competitive with those of the native population. The data for Japan are not available, but if the above is true also in Japan, the present main trend of population movement (from rural to the major metropolitan areas such as Tokyo and Osaka) must be re-directed to many local centers of medium size. (We have already seen that such population movements are already existing.)

Secondly, though it is very difficult to define and measure an area's growth potential, many remote villages and hamlets in the most backward areas are so hopeless that they must be encouraged to decline through outmigration. Even in such cases policies to encourage outmigration will encounter a considerable resistance in Japan's rural areas. To old farmers their ancestral land has much higher value than the market price, and they have strong emotional ties to these areas, where they have lived. Growth centers, if close to rural areas, might allow these emotional ties without sacrificing economic efficiency.

[24] P. M. Blau and O.D. Duncan, op. cit.; and D. E. Hathaway and B. Perkins, "Farm Labor Mobility, Migration, and Income Distribution." (See Footnotes 7 & 8)

Several bases for the growth center policy have been mentioned. On the other hand, one of the most frequently occurring criticisms against this policy is that concentrated development efforts in a relatively few growth centers will only serve to drain the regions corresponding to the respective centers in much the same way that the biggest metropolitan areas have drained the nation as a whole. Is this criticism relevant? This is a very crucial question, because the growth center strategy is fundamentally based upon the very opposite assumption, namely the growth in centers has favorable impacts on adjacent areas. We now turn to this question.

Impacts of a Growing Area on Surrounding Areas -- Favorable or Unfavorable?

As suggested above, we first encounter two quite different views as to the impacts of a growing area on other areas. On the one hand, there is a view asserting that economic growth initiated or promoted in the growth centers will spread to their less-developed hinterlands. Such favorable influences are variously called "spread effects", "trickling-down effects", etc. On the other hand, there is a view insisting that instead of a spread of economic development from growth centers there are unfavorable effects on the hinterlands, a further erosion of the economic base of these areas. These unfavorable effects are called "backwash effects", "polarization effects", "draining effects", etc.

Each view has its own base. Most arguments in favor of spread effects refer to the following points. First of all, the growth centers may improve the regional employment situation

through commuting and migration from the surrounding areas to the centers. If the growth centers absorb some of the unemployed of the hinterlands, they may contribute to raise the marginal productivity of labor and per capita levels of income in the lagging hinterlands. Secondly, there may be an increase of the centers' purchases of goods and services from their hinterlands. Thirdly, the nearby backward areas, especially if connected to the developed centers by sufficient transportation networks, will become important markets for the centers, and this may make these backward areas more advantageous locations for productive activities. More generally, the locational advantages of the surrounding hinterlands may be increased by the nearby centers, because these backward areas, if connected to the centers by sufficient transportation routes, may come to share some of the advantages of the developed centers such as external economies, scale of economies, high level of education and other cultural activities, etc. Fourthly, geographic separation or expansion of economic functions of business firms to adjacent hinterlands may occur due to such factors in the urban centers as rising rents and high wage levels. In this context Thompson's "filtering-down" theory of industrial location is interesting. According to him, the high wage rates of the innovating area (the large urban area), quite consonant with the high skills needed in the beginning stages of the learning process, become excessive when the skill requirements decline as the industry matures and the production process becomes rationalized and often routine. Then the industry, or parts of it, "filters-down" to the smaller, less industrially sophisticated areas where

the cheap labor is now up to the lesser occupational demands.[25] Such an argument is, so to speak, a two-edged sword; for Thompson argues from this that peripheral regions always get only the low-wage and slow-growing industries. But even this may be favorable from the point of view of industrializing the rural periphery.

On the other hand, most arguments in favor of "backwash" effect mention the following points. First of all, as often pointed out, migration is selective of the better qualified youth. Secondly, capital movement operates with the bias in favor of the rich regions against the other regions. "Studies in many countries have shown how the banking system, if not regulated to act differently, tends to become an instrument for siphoning off the savings from the poorer regions to the richer and more prosperous ones where returns on capital are high and secure."[26] Thirdly, manufacturing and export in the backward regions may become depressed as a result of competition with the developed areas. The perfection of the national markets will even tend to frustrate earlier beginnings of industrial diversification in agricultural regions.[27] Fourthly, there are many non-economic factors such as differential investment in human capacities (inferior levels of education and health in the backward regions), which make the retarded regions

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[25] W. R. Thompson, "Internal and External Factors in the Development of Urban Economies," in H. S. Perloff and L. Wingo (Ed.), Issues in Urban Economics, 1968, p. 56.

[26] G. Myrdal, Economic Theory and Under-Developed Regions, p. 28.

[27] G. Myrdal, op. cit., pp. 27-28.

further retarded.

In abstract most of the points of both sides appear probable, although they are not necessarily based on firm theoretical or empirical bases. It seems that there is no good general theory which co-ordinates these points into a systematic framework of spatial process of growth. In some cases an exclusive emphasis is put either on spread effects or backwash effects and the other is ignored. When both effects are considered, the relation between the two is expressed only very vaguely and insufficiently. For instance, A. O. Hirschman mentions both "trickling-down effects" and "polarization effects" roughly coinciding with those described above, and then, without reconciling them, suddenly jumps to a very vague generalization that "in spite of this bleak picture (polarization effects), we would still feel confident that in the end the trickling-down effects would gain the upper hand over the polarization effects if the North (industrialized region) had to rely to an important degree on Southern (agricultural) products for its own expansion."[28]

The most common theoretical attempt to reconcile these two effects is to distinguish different stages of economic development. For instance, Myrdal cites two conclusions of an economic survey of Europe in 1954 by U.N. Economic Commission for Europe:[29] First, in Western Europe disparities of income between

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[28] A. O. Hirschman, "Interregional and International Transmission of Economic Growth," in J. Friedmann and W. Alonso (Ed.), op. cit., p. 629.

[29] G. Myrdal, op. cit., pp. 33-34.

one region and another are much wider in the poorer countries than in the richer ones, and secondly, while the regional inequalities have been diminishing in the richer countries of Western Europe, the tendency has been the opposite in the poorer ones. From these he concludes that "the higher the level of economic development that a country has already attained, the stronger the spread effects will usually be."[30]

W. Alonso adduces two recent empirical studies which support the similar view that in the early stages of development there will be increasing disparity between developed and underdeveloped regions, but there will be a tendency toward equalization as the economy reaches maturity.[31]

It appears probable that backward regions receive from developed regions (and vice versa) a mixture of various influences, both favorable and unfavorable. Therefore, a systematic approach must first discuss, before reaching any general conclusion about the relation between spread and polarization effect, the conditions which might influence each of the component elements of the two effects (migration, capital movement, trade, etc.). There is no such attempt here, but it is useful and necessary as well to know some of the important factors which might generally influence the relative strength of spread and polarization effects as a whole. The theory and empirical evidence distinguishing different stages

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[30] Ibid.

[31] W. Alonso, "Urban and Regional Imbalances in Economic Development," Economic Development and Cultural Change, Vol. 17, No. 1 (October 1968), p. 9.

of economic development is instructive in this sense. However, stages of development is by no means the only, or even the major, factor to be considered. For instance, there are business cycles. Myrdal states that "a boom will probably always increase the relative strength of the spread effects. A depression will decrease it."[32] It seems to me, however, that one of the most important general factors is distance (or accessibility).

In discussing probable impacts of growing areas on backward areas we must make it clear whether we are talking about the suburbs, or a little farther but adjacent areas, or remote, separate areas. It seems probable that the relative strength of the two effects may vary depending upon the distance from, or accessibility to, the growing areas. The question to be answered with respect to the justification for the growth center strategy is not whether the centers have favorable or unfavorable influences on far away areas, but what kind of impacts the growth centers have on the adjacent areas. If we concentrate on this relatively narrow question, we find some empirical evidence to suggest that growth in one area will have favorable impacts on the surrounding areas.

W. H. Nicholls' study of the Upper East Tennessee Valley and A. M. Tang's study of the Southern Piedmont jointly concluded that[33]

> In 1900, today's more industrial counties did not have significantly different levels of farm capital per worker or farm

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[32] G. Myrdal, op. cit., p. 38.

[33] W. H. Nicholls, "Industrialization, Factor Markets, and Agricultural Development," in J. Friedmann and W. Alonso (Ed.), op. cit., pp. 460-461.

> output per worker from today's less industrial counties. By 1940, however, today's more industrial counties had not only experienced differentially high rates of industrial-urban development but their agriculture also clearly enjoyed superior capital-labor rations and higher farm-labor productivity. ... Our analyses strongly support the view that local industrial-urban development made an important positive contribution to the efficiency of the local factor and product markets, thereby greatly facilitating the transfer of excess labor out of agriculture and of needed capital into agriculture within the immediate environs of the growing center. (Underline added.)

D. E. Hathaway's study of migration from agriculture concluded that[34]

> Long-distance migration may be of much less help to agricultural adjustment than nearby nonfarm growth. There are indications that the adjustments are made more rapidly where the growth in nonfarm employment is local. Ruttan found that rural farm areas in the Southeast which "caught up" with the national average between 1930 and 1950 were close to developing urban centers. Cheng found the same tendencies in Michigan. (Underlines added.)

Also, according to the study of industrial location by Management and Economic Research Incorporated,[35]

> Areas immediately adjacent to existing industrial concentrations are enjoying much of the growth. Between 1929 and 1958, 104 counties that were unimportant industrially at the beginning of the period had become important by 1958. Half of these were adjacent to the established manufacturing centers. (Underlines added.)

The findings of these studies are quite consonant with our general impression of the historical pattern of development that growth has occurred not so much in a geographically sporadic (or at random) fashion as in the form of geographical expansion of already existing growth. Although these studies cited above do

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[34] D. E. Hathaway, op. cit., pp. 482-483.

[35] Management and Economic Research Incorporated, "Industrial Location as a Factor in Regional Economic Development," as quoted by M. A. Toborg, op. cit., p. 25.

not define the precise extent of the "immediate", "close" or "adjacent" areas, we may generally conclude that a growing area has favorable impacts on the surrounding areas.

Growth Transmission

The phenomenon of spread of growth is important from two points of view. So long as growth centers are designated in order to stimulate growth in surrounding areas, not in the centers themselves, the existence of positive spread effects is of paramount importance for the justification for the growth center policy. From this point of view the findings in the foregoing section might be enough. However, they are not sufficient at all from the point of view of determining the best orientation for a minute strategy -- for example, which specific areas should be selected as growth centers? For this purpose we need to know more exactly about the mechanism and process of growth transmission, especially the exact size and geographical extent of spread effects. Surprisingly, however, there has been little work in this field, and our knowledge about this matter, if any, is very vague.

No matter what the present state of knowledge might be, the growth center strategy, as a matter of fact, implicitly but obviously assume two hypotheses concerning growth transmission. Firstly, the closer an area is to a growing area, the stronger the favorable spread effect is. An alternative or complementary hypothesis would be: in order for an area to be favorably influenced by a growth center it must be located within a certain distance from the center. From whichever hypothesis the growth center strategy assumes that backward areas are too far from the existing

big agglomerations to be favorably influenced to an appreciable degree within a reasonable time span. Without such a hypothesis the growth center strategy could not satisfactorily explain why it tries to develop many growth centers in lagging regions instead of concentrating all development efforts in our few major cities such as Tokyo in the hope that the growth of these biggest cities may more effectively help poor regions grow.

The second implicit assumption is that the larger the scale of the center, the stronger (and faster) the spread effects are. Alternatively or complementarily, the center must be of a certain minimum size in order to emanate the spread effects. Without this hypothesis the growth center policy could not explain why it tries to invest in those areas which will grow anyway.

Berry's study of growth centers in the Upper Great Lakes Region seems to support these hypotheses.[36]

> The size and function of a central city, the size of its urban field, and the spatial extent of developmental "spread effects" are proportional.
>
> The spatial incidence of economic growth is a function of distance from the central city. Troughs of economic backwardness lie in the most inaccessible areas along the peripheries between the least accessible lower-level centers in the hierarchy.
>
> The growth potential of an area situated along the axis between two cities is a function of the intensity of interaction between them.

Berry's study is interesting, because it approaches the problem of the nature of spread effect from quantative points of

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[36] B. Berry, Potential Growth Centers and Growth Center Potentials in the Upper Great Lakes Region, A report to the Upper Great Lakes Regional Commission, October 1968, p. 17.

view such as distance and the size of a central city. Empirical studies along this line might be extremely useful.

Although the data for the Upper Great Lakes Region seem to support Berry's propositions, and the implicit assumptions on which the growth center strategy is based, the present state of our knowledge about this matter is far from sufficient. If we should try to demonstrate theoretically the hypotheses proposed above, we should be involved in the same difficulties with those which we have already had in measuring the relative strength of spread effects and polarization effects. That is to say, we have to dissolve the spread effect into its major elements such as backward linkages, migration, share of external economies, etc., and then discuss whether the hypotheses can be demonstrated in terms of each of them. Such an attempt, however, will be frustrated by inadequate evidence.

Taking the element of migration as an example, the relation between the migration flow and the distance is not clear. The growth center strategy seems to assume implicitly that people in backward areas will migrate much more readily and rapidly to nearby urban centers than to more remote ones. According to Hoover, a considerable number of empirical studies have supported Ravenstein's "Law" which makes the migration flow between two points an inverse function of the distance between these points, but some recent studies of migration seem to cast serious doubt on the importance of the distance factor.[37] Several studies are cited by him which suggest that distance is a factor of relatively little significance

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[37] E. M. Hoover, "Some Old and New Issues in Regional Development," in E. A. G. Robinson (Ed.), Backward Areas in Advanced Countries, 1969, p.354.

in explaining statistically the migration flows. If this is the case, there would be no need to designate growth centers near the poor regions to be helped as far as the view-point of migration is concerned. I am not suggesting such a conclusion. I simply suggest that the fact of the matter is that we have no clear answer to the question of the exact impact of distance (or ride hours) on migration flows. The same can be said of the relation between the size of urban centers and their strength of attraction.

The possibility for backward areas of sharing the nearby urban centers' various advantages seems to increase as the distance decreases and as the scale of the centers increases, but the exact relations are hard to measure. I shall not try to continue mentioning similar difficulties and uncertainties. Instead, I summarize by quoting a general comment by Hoover.[38]

> We do not yet know much, particularly in quantative terms, of the way in which a favorable economic effect is propagated from an urban center to the surrounding territory; or the range and speed of various impacts.

Urban Hierarchy

Another important problem is the relation between the growth center strategy and the urban hierarchy. The literature on the central place hierarchy and the system of cities tell us that there exists a hierarchicial system among cities. Cities can be classified into several levels (or orders) by their functional size and complexity, ranging from the lowest order of towns providing only every day goods and services to their own residents to the highest order of metropolis offering all the goods and

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[38] E. M. Hoover, op. cit.

services to a large population area. Lower-level cities are dependent upon higher-level cities in that the market areas of cities of each lower level nest within those of cities of the next higher level.

Barry demonstrated that impulses of economic change are transmitted in order from higher to lower centers in the urban hierarchy.[39] The spread of television communication was selected as an illustrative case.

> Changes move in the Upper Great Lakes Region through these urban centers, spreading outwards from them in succeeding waves. A definite sequence is involved.
>
> (a) First, impulses of change "filter" down the urban hierarchy.
>
> (b) Once a particular development impulse has reached a center, it spreads outward from it into its hinterland, with the closest population influenced earliest.

Such a mechanism might be working at the level of the nation as a whole as well as at smaller regional levels. A strategy which promotes activity in major metropolitan centers, therefore, might cause the rural periphery to follow along and eventually eliminate rural-urban differences.

Regional planning can be much more effective if it exploits such a mechanism of growth transmission rather than attempting to alter its fundamental character. The growth center strategy must be understood in this context. It aims to promote and accelerate the existing pattern of growth transmission rather than try to reverse the flow. The first thing for a growth center strategy to do, therefore, is to discover such networks and channels in the region, if it is too ambitious to do so at the national level.

So far I have mentioned three conceptual tools for determining the best orientation for a growth center strategy; i. e.,

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[39] B. Berry, op. cit., p. 56.

distance, the scale of a center, and the position of a center in the urban hierarchy. Although our knowledge about them is not yet sufficient, efforts must be oriented to this direction, if the strategy claims success.

Japanese current approach is inadequate from this viewpoint. The selection of fifteen growth centers was not based upon careful studies about these important factors mentioned above. The most frequently occurring criticism to the current policy is that too many centers were selected due to strong local political pressures. The criticism itself, however, is not founded on a firm basis; for such a criticism is made only from the standpoint that dispersed investment has little impact. Scarce resource is of course a big problem, but the number and location of the centers must be reviewed also from other points of view. Are the centers near enough to stimulate growth in lagging areas? Are not there better centers in terms of the position in the urban hierarchy? To answer these and other essential questions more studies about the mechanism of growth transmission are definitely needed in Japan.

CONCLUDING COMMENTS

The basic weaknesses of the Government's approach to the development of lagging regions can be summarized as follows.

(1) First of all, there is no clear principle of regional development. There are many regional development legislations, but they are overlapping and even contradictory with each other.

(2) It is generally agreed that lagging regions should be developed, but it is not clear whether such an attempt is justified

from the point of view of national economic efficiency. Governmental efforts to develop lagging regions are often based upon the unfounded view that our biggest metropolitan areas have become too big. There is not enough recognition that the attempt to develop lagging regions may be incompatible with the rapid national economic growth.

(3) Also, there is a remarkable confusion between "place prosperity" and "people prosperity". Too exclusive emphasis is put on the effort to help poor people within the limited geographical area where they now reside, but the best way might be, in some cases, to encourage them to migrate.

(4) Infrastructural investment and tax incentives are the two main governmental measures to attract industry to lagging areas. But these and other governmental measures are merely "permissive" rather than propulsive, and it is difficult to induce economic growth in remote lagging areas by such measures alone.

(5) Growth center policy seems to be the only, if any, workable solution. The growth transmission has a crucial meaning in the growth center strategy. Although it is generally true that a growing area has a favorable influence upon adjacent areas, we do not know the exact mechanism and process of the phenomenon.

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