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Japan's Local Allocation Tax

— An Equalization Transfer Scheme —

by

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(draft version)

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1. INTRODUCTION

Resources in the form of the ability to support public services through taxes are not evenly spread across the various subnational units of government in any country. On the other hand, resource disparities coexist with differences in need characteristics. To the extent that these disparities remain, low resource areas with high needs for public services must tax themselves at a higher rate in order to finance the same level of resources as higher resource area. Given regional gaps in the tax revenues and financial needs, some means of fiscal equalization is necessary to provide local public services in poor areas. The most important means devised to handle this problem is the unconditional tax-sharing grant. In Japan, the local allocation tax system plays a key role as the Equalization Transfer Scheme. The main aim of the present system is to secure a more even distribution of financial resources among local governments and to maintain local revenues at a level high enough to provide public services.

The purpose of this paper is to describe historical development of the local allocation tax and give an explanation of formula of the system in detail. There already exists literature written in English concerning with the local allocation tax[1] . However these efforts are just a general overview. Contribution of the paper is to present a concrete case study of the system and show foreign experts how to actually do it. Although specific-purpose grant, local transfer tax and even some local tax also has the effect of equalization to some extent in Japan, discussion concerns the local allocation tax because of its key role in the Equalization Transfer Scheme. The paper consists of following parts. Section 2 stresses the importance of fiscal equalization in Japan. Section 3 describes the development of equalization system from 1930s to the Shoup Recommendation under occupation. Section 4 would explain the formula of present local allocation tax system in detail. And last section analyzes practical effect of Japanese system from the view point of both equalization of financial resources and maintaining local revenue at national minimum.

2. IMPORTANCE OF FISCAL EQUALIZATION IN JAPAN

As the beginning, we will consider the importance of fiscal equalization in Japan from following three aspects; reallocation of tax revenue among national and local government, equalization effect on financial resources and international comparison. First there is large-scale reallocation of revenue through earmarked and general subsidies in Japan. Table 1 shows the situation of tax share and fiscal transfer between central and local government from the historical perspective. In 1989 total tax revenues are 84,891 billion,which are divided into national and local taxes. Before fiscal transfers, local taxes account for only 35.7% of total revenue. However a substantial portion of national taxes is transferred to the local governments. Major fiscal transfers are of two broad types: Unconditional transfers are tax-

[1] See, for example, Ito, H. [1967]; Yonehara, J. [1987]; Ishi, H.[1993].

sharing grants on a lump-sum basis financed by the local allocation tax. Conditional grants are matching-type categorical grants which are called specific-purpose grant. After reallocating the tax sources among different levels of the government,the final share of total tax revenue accruing to local governments increases to 52.2 per cent. The ratio has been increased steadily and unchanged for a nearly three decades. This means that one-third of national tax revenue is used at the local level. Table 1 also shows that reallocation of revenues between national and local government started in 1940. While being revised by Shoup recommendation in 1949, share of these grants to local revenues reached almost 30-40 per cent for four decades.

Table 1

Second aspect of the importance of the system is its equalization effect on financial resources. Making a comparison between per capita local tax revenue and per capita revenue from general fiscal sources (i.e. local taxes, local allocation tax) of prefecture in 1990; it may be ascertained that the disparity in the financial resources among rich and poor districts is considerably reduced, though many questions relating its mechanism remain unsettled. In Table 2, some of the richer and poorer local bodies are selected and grouped into classes ,according to per capita income in 1990. A marked difference is observed in per capita tax revenues among localities, the largest being Tokyo 405,209 Yen, the smallest Aomori with 62,853 Yen, corresponding closely to the difference in their economic resources and per capita income of inhabitants. In contrast to this, per capita revenues from general sources differ little in different prefectures. It is remarkable that Okinawa holds the first rank with 285,946 Yen, which is larger than that of Osaka or any others except for Tokyo. It may be assumed that Japanese equalization system operates well, in general, to reduce territorial inequalities[2] .

Table 2

As the third aspect of the importance, it is helpful to compare local resource disparities and the extent to which they are reduced through equalization scheme for a variety of countries . A number of countries, such as United States, Italy and France through grant system place little emphasis on resource equalization. The intergovernmental system of Canada, Denmark and Germany largely realize such potential, while the performance of the English grant system is less equalizing in this respect. However, grant system in Japan as well as Australia have the potential of reversing the impact of income distribution on public services, as shown by the

[2]However, it is to be noted that these figures refer merely to the per capita amount of the prefecture. Generally speaking, financial needs for local function are not necessarily proportional to the number of inhabitants. In a sparsely populated district, for example, per capita revenue gives a large figure, notwithstanding the low level of accomplishment of services. On the other hand, a densely settled district requires fiscal means beyond the average.It would be too hasty, therefore, to reach the conclusion on the above analysis that the equalization problem in the prefecture is definitely solved.

relative wealth of low income districts after equalization [3]. There is a good evidence for this. The extent of resource disparity among local units in each country was measured through calculation of the coefficient of variation in the Notional Tax Income(NTI)[4]. Table 3 shows that local resource disparities are greatest in Canada, followed by the Japan, United States, England, Germany with Australia having the lowest.

Table 3

The actual degree of equalization depends on both the equalizing design of the grant ,but also on how much grant is available. As for the former, Table 4 displays the correlation between per capita tax capacity and per capita grant. In Canada, Denmark, Japan and Germany, the distribution of grant appears to follow the principle of equalization fairly closely. In England, the relationship is weaker,yet still conforms to expectations of resource equalization, while in the United States the distribution of the grant does not. The actual degree of equalization could be measured as the difference between the coefficient of variation in Notional Tax Income(NTI) and Notional Equalized revenue(NER[5]). As is shown by Table 5, Canada and Denmark, grants serve to reduce resource disparities quite extensive, as might be expected- by 73 percent in each. In Germany the system of intergovernmental transfers has a moderate equalizing effect(38 percent), while in England and United States the relatively weaker equalizing distribution of grants means that have only marginal impact on resource inequalities. It should be noted that the major surprise can be found in Australia and Japan, where resource disparities actually increased after equalization. However, this increase actually resulted in a reversal of rank ordering of disparities among local authorities rather than a reinforcement of pre-grant disparities.

Table 4

Table 5

3. THE EVOLUTION OF FISCAL EQUALIZATION

3.1. Shared Taxes (1940-1949)

It was in 1940 that the equalization system of local finance was firmly established in Japan. But we had already as forerunners grants in 1930s. They were "provisional grant"(*rinji-*

[3] This point is argued by Wolman H. and Page E. [1987]

[4] An average tax rate is equal to local tax revenue as a percentage of total personal income. This average tax rate is applied to the tax capacity(measured by per capita personal income) to determine the notional own source tax revenue. This measure is termed the Notional Tax Income by Wolman H. and Page E. [1987] .

[5] To determine the actual degree of equalization, the per capita grant received by each subnational units is addedto the Notional Tax Income figure to obtain a notional total reflecting the area's resources after addition of grant to a standard rate of local taxation; This Wolman and Page termed Notional Equalized Revenue.

chihozaisei hokyukin) for salaries of primary school teachers and for natural disaster rehabilitation which were apportioned among rural districts as device to counter depression. The first regular scheme for equalizing local finance, however, was the "shared tax" (*chiho bunyo-zei*) in 1940, carried out in connection with tax reform of central and local governments corresponding to the quasi-war situation at that time. The shared tax system enforced in 1940 was composed of local refund taxes and a local distribution tax.

The "local refund tax"(*kanpu-zei*) means the type of national tax levied by the central government the whole yield of which is assigned to the districts of origin for general purpose. The reason why they were not directly imposed as independent local taxes by prefectures was to secure uniformity throughout the country in standard, rates of taxation in order to obviate inequality among localities. Such a method of distribution based on the tax source had no equalization effects on the condition of local finance. By the revision of taxation in 1947, the system of local refund tax was abolished. The "local distribution tax"(*chiho haifu-zei*) was a kind of national tax the proceeds of which were shared with local units. They were distributed among localities without restriction not by the tax source principle, as in the case of refund tax, but by a formula designed to provide equalization. Under the law of 1940 the aggregate amount to be distributed among local units was the sum of (1) 17.38 percent of the yield from income tax and corporation tax, (2) 50 percent of that from admission tax and amusement, eating and drinking tax.

The distribution of the funds among individual local units was determined by means of a formula which included factors relating to local financial need and to local fiscal capacity. One half of the amount was apportioned to individual local units in proportion to financial needs and one-half in inverse proportion to taxable capacity. With the revision in 1947 and in 1948, the taxes to be shared were reduced to income corporation taxes and the aggregate amount was stipulated to be equal to 33.14 percent of yields from these two taxes. This percentage varied in practice from year to year according in part to the fluctuation in receipts caused by the sensitivity of income taxation, and part to the degree of stringency in national finance. However it can be said that it contributed much to the equalization of our local finance and formed the basis of our current local allocation tax.

3.2. Equalization grant (1950-1953)

In accordance with the Shoup Report, distribution tax was converted in 1950 to " the local finance equalization grant " (*chihozaisei heikou-koufukin*)which is a type of general grant paid not out of the tax yields but out of the general funds of central government. Equalization grant was computed respectively by means of the formula which contained two parts, the first relating to the measure of the local need for basic services, and second relating to the measure of local financial ability.

The local need for each item was computed as the number of units of the service, multiplied by the standard cost per units of the service at an acceptable but minimal quantity and quality. The total need for each locality was the sum of the amounts needed for all basic services combined. The financial capacity of each locality was computed as 70 percent of revenues that all regular local taxes would yield assuming that they were levied at a standard rate with standard levels of assessment and collection. Then the total the total financial capacity was subtracted from total financial need, the difference being the basis for computing the grant of each particular locality.

It is to be pointed out that the reason why a fraction, but not the whole, of tax yield was used in determining the financial capacity of each locality was to leave local governments free to spend funds at their own discretion, and the reason why a standard, uniform rate instead of the actual rate of taxes was applied, was to minimize the discouragement of the efforts of the local government to strengthen taxation of their own,. If actual rate had been applied, the more effort they might make, the more the amount of grants might be decreased. The aggregate amount would be the sum of the amounts to be paid to the separate local units. But in practice the aggregate amount was less than that sum owning to the fiscal difficulties on the side of national government.

The equalization grant differed from the distribution tax in structure and in function, as described below[6] : (a) The distribution tax was a kind of shared tax system, in which national government shared yields from national taxes with localities, whereas the equalization grant was a kind of general grant paid to localities out of the general funds of the national government. (b)In the distribution tax, the total amount to be given to individual local units was divided into two parts, which were apportioned separately: one according to the need for services, the other according to fiscal capacity, bearing no relation to each other, whereas in the case of the equalization grant it was allotted to particular units by means of composite formula which combined need and capacity. So in the old distribution tax there was no limitation as to the use of money, and local governments were free from central. It is true that the equalization grant too, being a general grant, was given to localities not earmarked for a particular expenditure function. The local governments, however, were bound to spend at least with reasonable efficiency an amount equal to the standard need, a minimum level of local service, prescribed by laws and ordinances.

(c)The aggregate amount of the distribution tax to be apportioned among local units was ascertained as a prescribed percentage of revenue derived from some of the national taxes and varied from year to year along with the yields of taxes concerned with no direct relationship to fiscal conditions of localities, while in the case of the equalization grant, the total amount was determined more closely in accordance with the difference between fiscal needs and resources of localities, irrespective of national tax revenue. (d) In the old distribution tax, the

[6] This point is argued by Ito, H. [1967].

computation of financial need of locality was based in general on the number of population. Other factors, such as the number of pupils of primary school, were used only in exceptional cases and were not so detailed as in the case of equalization grant, in which a variety of factors were used according to the features of local services. (e) As to the amount to be distributed, it was prescribed in the distribution tax law that 62% of the aggregate amount was to be assigned to prefectures and the remaining 38% to municipalities. In the equalization grant, such a dividing system was discontinued, and it was maintained instead that the total amount should be in principal the sum of the amounts determined through studies of the relative capacities and needs of all prefectures and municipalities.

All things considered, it is true that the equalization grant was more reasonable than the distribution tax so far as the idea of the scheme was concerned. But four years' experience revealed that it had not worked as well as was hoped. For the aggregate sum of the grant was not paid out of the general funds of national government as computed by the formula but was determined every year, taking into consideration among other things the degree of stringency in national finance. So, every year it gave rise to frictions between local and national officials in the determination of the total amount. Thus the purpose of the grant to reduce the inequalities in the tax burden and in the availability of services among poor and rich local areas was not attained as originally intended.

4. FORMULA OF LOCAL ALLOCATION TAX

4.1.Financial Resources

In view of these considerations, the equalization grant was abrogated in 1953 and in its place a shared tax system composed of a new type of local allocation tax and a few local transfer taxes was introduced in 1954. This has continued to the present with some minor alterations. Among them the most important is the new type of local allocation tax.The following is a brief outline of the new local allocation tax as it is now constituted.

4.1.1 Tax Sharing Ratio

The framework of the new local allocation tax is founded in the main on that of the former distribution tax enforced between 1940 and 1949, retaining on the other hand the formula used in the equalization grant for the distribution of funds to localities. The new system is no other than the shared tax in which a share in the proceeds of national taxes is granted to poor localities without limitation as to use. The total amount to be distributed to local authorities is a fraction of yields from five major national taxes: income tax, corporation tax, alcoholic tax ,consumption tax and tobacco tax. The tax-sharing ratio is fixed at 32 percent of income tax, corporate tax, alcoholic tax, 24 percent of consumption tax and 25 percent of tobacco tax (Local Allocation Tax Law, clause1,article6). While the national taxes subject to local allocation tax

were income tax, corporate tax and alcoholic tax from the beginning, after 1989 tax reform other taxes, i.e.consumption tax and tobacco tax, have been added to the financial resources of local allocation tax beside the three national taxes as Table 6 demonstrates. These three national taxes were selected as financial resources at the beginning because of their high-income elasticity and stability in tax revenue.

Table 6

4.1.2 Legal Amount of Local Allocation Tax

The total amount of local allocation tax is calculated based on an estimate of five national taxes revenue in current fiscal year. If the actual tax revenue is far above or below the estimate, the balance must be liquidated after next fiscal year. The total amount of local allocation tax in current year is, therefore, sum of the estimate of five national taxes multiplied by the tax-sharing ratio and the amount of actual balance carried forward from previous year. This total amount is usually called a " legal amount of local allocation tax " or" amount designated by law". Nevertheless "legal amount of local allocation tax" has never been distributed as an actual aggregate amount of local allocation tax for a certain fiscal year from the beginning, because some special measure which will be explained later has been took to deal with financial shortage in every year.

Local Allocation Tax Law prescribes that local allocation tax is equal to a certain fixed percentage of major national tax as mentioned above. This prescription means that the total amount is determined automatically every year without conflict between Ministry of Home Affairs and Ministry of Finance usual in the case of equalization grant. it was emphasized by the advocates of this system. On the other hand clause1 article2 of the law defines that local allocation tax is not a kind of grant but "tax" collected by the national government in stead of local authorities. For reasons mentioned above, local allocation tax has been interpreted as "common and independent financial resources of local authorities". Opinions, however, are divided among ministries on this point. Generally speaking expert in HOHA has given his opinion that local allocation tax should not be carried over through general account of national government to the special account of local allocation tax but put directly in the special account like local transfer tax. MOF has taken a position against MOHA's view.

At the beginning of current local allocation tax a method securing financial resources in every single year changed into a system which makes up for a shortage of financial resources in a long term. To put it another way, the tax-sharing ratio must remain unchanged, even if total amount of financial shortage differs from the "legal amount of local allocation tax". However if the "legal amount of local allocation tax" differs "continuously" and "remarkably" from the sum of actual shortage of financial resources, government can either revise the system relating local public finance and administration or change the tax-sharing ratio(Local Allocation Tax

Law, clause2,article6-3). To be concrete the expression"continuously" means the case in which the difference has continued for two years and can be expected to continue after third year. And the word "remarkably" means the case in which the difference is much more than 10 percent of the "legal amount of local allocation tax".

4.1.3 Special Measure

In practice, however, some special measure has been took every year without increase of tax-sharing ratio. These special measure which will be explained later from the historical perspective can be divided into following five types.

(a).borrowing from special account of Trust Fund Bureau.

(b).carrying forward of local allocation tax.

(c).cancellation of local allocation tax cut.

(d).transfer of provisional local grant.

(e).special addition or reduction of local allocation tax.

The first is borrowing from special account of Trust Fund Bureau. To deal with shortage of total amount of local allocation tax, the special account of local allocation tax can borrow a large sum of money from Trust Fund Bureau(Shikin-unyo-bu) whose major sources raised from the public are postal saving, public pension fund. While this special measure must be refund to the Trust Fund Bureau within a certain period of time, half of the amount with interest added has been born by the national government. The second is carrying forward of local allocation tax. A part of local allocation tax can be carried forward into next year either if there is a marked increase in the total amount of local allocation tax by a supplementary budget at the end of fiscal year or a sharp increase in the amount of local tax revenue owing to improving of economy.

The third is cancellation of local allocation tax cut. This special measure can be applied to cancel a cut of local allocation tax which is required in case of national tax reduction caused by a supplementary budget. However this special measure need not to go into liquidation in future. The fourth is transfer of provisional local grant. Beside the "legal amount of local allocation tax" a certain amount of money are transferred from the general account of national government to the special account of local allocation tax. The fifth is special addition or reduction of local allocation tax. This special measure was introduced in 1984 in place of borrowing from Trust Fund Bureau. Unlike transfer of provisional local grant, this special measure must be liquidated later between general account and special account. To put it plainly,

the amount which is added in a certain year must be subtracted from local allocation tax in future and vice versa.

4.2.Basic Financial Needs

4.2.1 ordinary allocation tax

The new system is comprised of an ordinary local allocation tax and a special local allocation tax. 94% of the aggregate amount is distributed as the ordinary local allocation tax among municipalities and prefectures by computing for for each locality separately both financial need and basic financial revenue by means of the general formula; the remaining 6% is given as the special local allocation tax only to local units with extraordinary needs according to their financial requirements. The computation formula of the ordinary allocation tax is so complicated that there is no counterpart in other countries. It is annually paid to local governments whose basic financial needs (N) exceed basic financial revenues (R). Thus, the ordinary allocation tax entitlement (T) is equal to the deficiency, N −R;

$$T=N-R \qquad (1)$$

However, the total amount of the ordinary allocation tax, which is calculated in advance, does not necessarily cover the aggregate amount of the deficiencies of local governments whose basic financial needs exceed their basic revenues. This being the case, some modification is necessary in the calculation of the total allotted amount by using an adjustment coefficient α [7]. The actual amount of ordinary allocation tax (T") granted to a local government is

$$T''=(N-R)-\alpha N \qquad (2)$$

The second term is added to adjust for the gap between T and N−R in equation(1)[8].

4.2.2 Concept and Formula

The formula of determining the basic financial need and revenue in the ordinary local allocation tax is very similar in its framework to that once used in the equalization grant, though revised in minor details. Basic financial needs is defined as a certain amount of expenditure

[7] The adjustment coefficient is calculated as follows.

$$\alpha = \frac{\text{aggregate deficiencies of all government} - \text{total amount of ordinary allocation tax}}{\text{(aggregate basic financial needs of all receiving governments)}}$$

[8] These explanations are derived from Ishi, H[1993].

financed by revenue without limitation of use out of the total expenditure providing public service at standard level. It is important to note here a fundamental concept of basic financial needs. First basic financial needs is calculated not based on the actual results of expenditure but as "appropriate financial need" at an acceptable quantity and quality. Second basic financial need does not mean an aggregate amount of the "appropriate financial need " but a certain amount of the need financed by general revenue. In other words the needs financed by special revenue such as grant-in-aid, charges, fees and local debt are subtracted from the basic financial needs. Basic financial needs are calculated according to the following formula.

Basic financial needs=(indicators)×(unit cost)×(modification coefficient) (3)

4.2.3 Service Item and Indicator

Public services for each prefecture and municipality are divided into some service items(*gyosei-komoku*) as table7 and that of 8 demonstrates[9]. Regarding prefecture there are 24 service items such as police, road-bridge, primary school and as for municipality there are 24 service items such as city planning, park, garbage collection and so on. Moreover each service item is classified into current expenditure and capital expenditure. For each local body, according to the formula mentioned above basic financial needs for each service item is calculated as the number of indicators by multiplying the unit cost, adjusted by modification coefficients.The total basic need in each locality is the sum of the amounts needed for all service items combined. As the indicator, a variety of factors are employed. They differ in different services. Table 7 and that of 8 summarize these indicators. Because indicator(*sokutei-tani*) is a measure to evaluate financial need for each service item as accurately as possible, it is expected to meet following two conditions.; (a) correlation between indicator and financial needs.;(b) objectivity of indicator.

Table 7 Table 8

First the indicator must be an index which is in proportion to the financial need for each service item. As for social welfare and health service the indicator is population, because this service is intended for inhabitants and its financial needs is proportional to population. In case of health and welfare for the aged the indicator is population of the aged as a matter of course. The indicator for livelihood protection is population of town and village as for prefecture but population of city as for municipality. This minor difference reflects actual cost-sharing for the service between prefecture and municipality. It is noteworthy that indicator used for current expenditure differs from the one for capital expenditure in case of road and bridge. Being calculated as a cost of road cleaning and repairing, current expenditure is expected to be proportional to area of roads.

[9] The material in this part is derived mainly from Okamoto, M[1995].

On the other hand being calculated as a cost of road reconstruction, capital expenditure is not always proportional to area of roads but to length of roads. The indicator used in prefecture for primary and secondary school is number of teachers because of bearing a half of teachers' salaries. The indicator used in municipality is, however, number of school pupils, number of classes and number of schools which are closely related to the administration of municipality such as an expenses for lighting and fuel, teaching materials, building and maintenance of schoolhouses.

However it is undesirable to divide the indicators into tiny lots. Then any other factors which affect basic financial needs are considered carefully by applying modification coefficient. For example financial needs of public university is included into a category of "the others" adjusted by modification coefficient without making a new separate indicator, because only a few municipalities have founded public university. Since a certain service item such as river improvement work has no index which is closely related to the expenditure, length of river is normally adjusted by some modification coefficients. It is only natural that most of the indicators for each service items are relating to population on the whole as table 7 and 8 demonstrates, because public service is usually intended for the inhabitants.

Second, a figure of indicator must be objective in order to calculate basic financial needs as fairly as possible. To be concrete following figures which have public confidence are designated as formal figures of indicator.

(a). statistical investigation designated by the national government.
-population (National Census)
-number of school pupils (Basic Investigation of School)

(b). figure announced by governments officials
-area (announced by Board of National Land and Geography)

(c). figure provided by law
-number of policemen (Enforcement Ordinance of Police Law)
-number of teachers (Law concerning Class Organization and Fixed Number of Teachers in Compulsory Education)

(d). figure entered in the register which is under obligation to prepare.
-length and area of road (road register)

4.2.4 Unit Cost

On the other hand, for each item of services the unit cost (*tani-hiyo*) necessary to

guarantee the reasonable and minimal level of achievement is determined. The unit cost is a kind of net standard cost per indicator for each service item. Table 7 and 8 summarizes the unit cost designate by law in FY1994. Assuming a certain local body with standard condition and scale, the unit cost for each service item is calculated based on following formula.

$$\text{unit cost} = (C - S)/F = G/F \qquad (4)$$

Where C stands for gross standard cost, S for special revenue necessary for standard expenditure such as specific grant, fees, charge and local debt, F for figure of indicators in standard local body. As this formula demonstrates, the unit cost is determined by subtracting related special revenue with limit of use from the gross standard cost per indicator. As mentioned above it is desirable that "standard local body"(*hyojun-dantai*) is average in population, area and scale of public administration, and also not peculiar in natural or geographical features. For example in case of prefecture only one fictitious local body whose population is 1.7 million and land area is 6500 square kilometers is assumed as "standard local body"; in case of municipality population 0.1 million and land area 160 square kilometers. The unit cost designated by law in FY 1994 is summarized in Table 7 and that of 8.

It would be helpful for a foreign expert to explain the unit cost with concrete case. Here, a case study of the unit cost for health and welfare service for the aged is taken into account . First, the scale of administration in the "standard local body" is determined as follows. Number of the aged is 15 thousand; health care facilities 2; the aged using a nursing home 56 per month; the aged using special nursing home 176 per month; the aged using cheap nursing home 22 per month; public officials necessary for the service 30. Second, gross standard cost is determined 1,613,574 Yen, by summing up related expenditures for the service such as welfare for the aged, welfare at home, health care for the aged and so on. Therefore general revenue without limit to use is calculated 1,081,700 Yen, by subtracting these special revenue from the gross standard cost. Dividing general revenue necessary for the standard expenditure by the number of indicators, the unit cost is determined 72,100 Yen.

4.2.5 Modification Coefficient

The unit cost thus ascertained, however, is uniform throughout the whole country, and due regard is paid neither to the peculiar type of services nor to the special circumstances of localities. So an exceedingly complex adjustment is made as to the unit cost applicable to such types of service and localities by means of detailed modifiers decided in accordance with their differences. Currently modification coefficients are classified according to following eight categories .

(a).*Class modification coefficient.* If a indicator can be divided into some sub-categories, the difference in the unit cost of each sub-category is considered by applying this

modification coefficient. A typical example is in calculating the financial needs of a h i g h school. The indicator for a high school is the number of its students. However, educational expenses are likely to differ depending on the type of school such as ordinary school, technical high school and high school evening classes. In such cases, class modification coefficients are applied to adjust for difference in unit costs. To be concrete where the unit cost of general high school per pupil is A1; technical high school A2, the class modification for technical high school is expressed as A1/A2.

(b).Size modification coefficient. When economies of scale occur in the provision of public services, lower units costs should be applied. For example unit cost for a mayor is likely to diminish gradually according as population increases. It is worthwhile to explain how to determine this modification coefficient. Figure1 contains a graph of cost curve in local public service. The vertical axis in the graph represents cost per unit; the horizontal axis, a figure of indicators. S stands for figure of indicator in "standard local unit", ai for the increase in figure, α for the unit cost designated by law, β i for the decrease in unit cost. Written mathematically, this graph is expressed as the following equation.

$$(S+A_1)\times(\alpha-\beta_i)=S\alpha+A_1\alpha D_1 \qquad (5)$$

The left side of equation(4) denotes the amount of financial needs in stage of S+a1, in the right side D1 stands for modification coefficient for the stage of S+a1. Then following equation is derived form the equation(4).

$$D_1=\{A_1\alpha-(S+A_1)\beta_1\}\ /\ A_1\alpha \qquad (6)$$

$$D_n=\Sigma A_n\alpha-(S+\Sigma A_n)\beta_n-\Sigma A_{n-1}D_{n-1}\alpha \qquad (7)$$

Figure 1

(c).Density modification coefficient .Public expense is likely to increase/decrease gradually according to population density. For example it is more expensive to build a new public health center in Hokkaido with low population density than in Tokyo. Following case study may be helpful. In order to support students commuting long distance, some municipalities aid them with commuting expense, move school buses and manage dormitories. In this case density modification coefficient is determined as follows.

$$\text{(density modification coefficient -1)}=\frac{(B\times 37{,}500+C\times 548{,}900+D\times 239{,}000)}{\text{Unit Cost}\times A}$$

Where A stands for figure of indicator (i.e. number of students), B for number of students commuting long distance, C for number of school buses or boat, D for number of

students living in dormitories. 37,500 Yen denotes aid per student for long distance commuting; 5,489,000 Yen, public expense per bus; 239,000 Yen, maintenance cost of dormitories.

(d)Modification coefficient for special factors. Public service for local governments vary in accordance with differences in economic, social, and institutional factors in different regions. This coefficients consist of following three types. Modification coefficient for degree of urbanization; Dividing all municipalities into 20 stages of small classes according to their degree of urbanization, the difference in salary such as adjustment allowance, housing allowance are included into basic financial needs by this coefficient. Modification coefficient for current expenditure; Expense of total salaries for elementary schoolteachers depends on their average age in each local authorities regardless of degree on urbanization. This coefficient includes such kind of difference into the basic financial needs. Modification coefficient for capital expenditure. This coefficient includes special needs of capital expenditure based on objective statistical figure or actual result of public works.

(e)Modification coefficient for cold areas. Public expenditure in cold area is more expensive than in others. This modification coefficient includes into the basic financial needs following factors. An allowance for those working in cold districts (difference in salary); difference in the expense for heating system, cost of fuel and road structure (degree of chill); the cost of snow-removal in snowy area (degree of accumulation of snow). *(f).Modification coefficients to allow for rapid growth of population.* This modification coefficient is usually applied to reflect an increase in the basic financial needs such as city planning that would occur in case of rapid increase in the population of municipality. *(g).Modification coefficients related to rapid decrease in the units of measurement.* This coefficient is applied ,for example, to minimize any sharp reduction of the local allocation tax that would occur in the case of rapid decrease in the population of a municipality. *(h).Modification coefficients related to financial capacity.* In Japan redemption cost of local bond issued for disaster-rehabilitation is allowed to be included into the basic financial needs. However the redemption cost weighs heavy on the local body with weak financial capacity. The larger ratio of redemption money to tax revenue, the more the cost is allowed to be included into the basic financial needs.

4.3. Basic Financial Revenue

The basic financial revenue of each locality, on the other side, is expressed as a combined total of two types of revenue: (1) 80% in the case of prefectures, 75% in the case of municipalities of the sum of the yields of all regular local taxes, assuming that each is levied at the uniform rate or standard rate prescribed in the Local Tax Law, (2) the sum of revenues from local transfer taxes. This is expressed following equation.

$$\text{Basic financial revenue} = (\text{revenue from ordinary taxes by standard rate}) \times 80\text{or}75\% + (\text{revenue from the local transfer tax}) \quad (8)$$

There are two reason for adopting such prescribed percentages. First, it is impossible to measure completely the basic financial needs of all local governments by a uniform formula. Second, it is necessary to retain incentives for local governments to collect their own taxes. On the other hand, all revenue allotted from the local transfer tax are included, mainly because it is collected by the national government and has no relation to the tax collection effort at the local level. Table 9 summarizes the revenue items which are included in the calculation of basic financial revenues.

Table 9

The difference between the basic financial need and revenue of each locality thus calculated provides the basis for computing the ordinary local allocation tax of that locality. 94% of the aggregate amount already explained, viz. the prescribed fraction of three major taxes of national government, is apportioned among local bodies in proportion to the amount of the difference of need and revenue. Those rich localities whose revenue exceeds need are neither eligible for the grants nor liable to contribute money for fiscal adjustment, as is the case in some countries. Besides the ordinary local allocation tax, a special local allocation tax (the remaining 6% of the aggregate) is given as a supplementary measure to particular localities to meet extraordinary needs caused by such circumstances and emergencies as natural disaster, contagious disease, etc.

5. ROLE OF LOCAL ALLOCATION TAX

5.1. Equalization of financial resources

Now we proceed to analyze practical effects of Japanese system on the general revenue of local body[10] . Despite the various conceivable drawbacks of the high degree of centralization in the government policy such activities seem certainly to have contributed to the reduction of regional disparity in the production capacities, including human resources[11] . To what extent are disparities in financial resources reduced through local allocation tax? To determine the actual degree of equalization achieved I added the per capita local allocation tax to the per capita local tax in order to obtain a notional total reflecting the area's resources after the addition of local allocation tax; this is termed General Financial Resources (GFR). I then determined the disparity, as measured by the Gini coefficient, in the GFR and compared it with the initial disparity in local tax per capita.

[10] For detailed arguments for this section, see Mochida, N.[1993] and [1990].

[11] Hayashi[1992] points out that the local allocation tax plays a key role in the Japanese Welfare States. For detailed argument for this point, see Ishikawa [1995].

The extent of the improvement (or deterioration) could then be measured as the difference between the Gini coefficient of local tax and that of GFR divided by the former. This measure can be expressed as the following equation.

$$\phi = (G_2 - G_1)/G_2 \tag{9}$$

Where G_1 stands for the Gini coefficient of GFR, G_2 for the Gini coefficient in local tax. ϕ denotes the extent of the improvement; this I have termed the Equalization Coefficient in this paper. Figure 2a indicates the change in the extent of improvement measured by the Equalization Coefficient. As this figure demonstrates, the extent of improvement has changed drastically every ten years. In other words, the development of local allocation tax can be divided into following four periods.

Figure 2

(a)The first half of rapid growth era (1954-1964)

(b)The latter half of rapid growth era (1965-1974)

(c)Oil crises and thereafter (1975-1984)

(d)"bubble economy" and therafter (1985-1995)

The first half of rapid growth era: from 1954 to 1964. In this period, the general account of the national budget pursued a balanced budget policy and did not rely upon bond revenue partly because of the Public Finance Law which prohibited bond issuance as a rule by article 4 and partly because of continuous increase in national tax revenue. In this period, the disparity in financial resources among rich and poor local authorities became to be bigger and was maintained at high level. A large number of young people moved from rural area to the metropolitan area such as Tokyo, Osaka, Nagoya. To deal with this social problem, the political slogan of "Improvement of Regional Disparity" became to be one of main national policy goal and was embodied in the National Comprehensive Development Plan established in October 1962. In line with this national policy guideline, local allocation tax was distributed mainly to the backward districts in inverse proportion to their financial capacities. As a result, local allocation tax served to reduce resources disparities quite extensively by 70 percent in each year.

It is noteworthy that this enforcement in the extent of equalization was not caused by arbitrary political negotiation but by technical changes in the modification coefficient for special factors. For example the modification coefficient for special factors was introduced in 1956 to include financial needs for capital expenditure which was in proportional to the ratio of

unimproved road and the reciprocal of financial capacity. Moreover the modification coefficient for expense for public works was established in 1962 to include a part of the burden shared by local authorities for the public works into the basic financial needs .

The latter half of the rapid growth era; from 1965 to 1974. In FY 1965, the balanced budget policy was finally abandoned, and long-term bonds permitted by the proviso of article 4 in the Public Finance Law were issued to supplement tax revenue. During the rapid growth era, however, bond revenue was only a marginal source of revenue. In this latter half of the rapid growth era, there was sharp decrease in the disparities among rich and poor districts. As figure 2a indicates, the Gini coefficient of per capita regional income decreased from 0.1248 in FY 1965 to 0.0753 in FY 1975. This improvement of regional disparities was not caused by success of the National Comprehensive Development Plan but by the dispersion of factories around the country and increase in the number of people employed in the local public works. Nevertheless, the distribution of local allocation tax followed the principle of equalization all the more by adopting the special modification coefficients for capital expenditure. As a result, resources disparities actually increased after the equalizing effect of local allocation tax is taken into account. However, this increase actually resulted in a reversal of the rank ordering of disparities among prefectures rather than a reinforcement of pre-grant disparities. Therefore, we should notice that the sharp "decline" in the Equalization Coefficients means enforcement of improvement rather than deterioration of equalizing effect.

Oil crises and thereafter: since the mid-1970 up to mid-1980. Because the Public Finance Law limits bond issues to the amount of public works expenditures, and because deficits have continued to exceed this ceiling since FY 1975, it was necessary to enact a special law every year in order to legalize the issuance of bonds exceeding the legal ceiling. During this period, the disparities in per capita local tax has began to increase again as a result of population concentration on the Tokyo metropolitan area caused by the internationalization of financial market. As the figure 2b demonstrates, the Gini coefficient of per capita local tax has increased gradually after oil crises. On the other hand, the negative correlation between per capita tax revenue and per capita local allocation tax became to be weaker than before, because of the shortage of total amount of local allocation tax as figure2b indicates that the Gini coefficient of per capita local allocation tax has declined after FY 1975. As a result of these trends, reversal of the rank ordering of disparities among prefectures was corrected a little and the Equalization Coefficient was unchanged.

So called "bubble economy" and thereafter ; since 1985 up to the present. While GINI coefficient of GFR increased gradually, there was marked decrease in the regional disparities as Figure 2b indicates that GINI coefficient of local tax declined from 0.19 in FY 1988 to 0.15 in FY 1993. As a result, the Equalization Coefficient has been dropped drastically from 0.4120 in FY 1988 to 0.085 in FY 1993 as figure 2a demonstrates. It is noteworthy that there is little difference between pre-grant disparities and area's resource disparities after the addition of local

allocation tax. However, these trend does not mean deterioration of equalization effect, but a reversal of the rank ordering of disparities among prefectures. It is important to explain the reduction of pre-grant disparities and reversal of the rank ordering during this period. These new trends can be explained by both fundamental tax reform and collapse of "bubble economy".

First, in exchange for introduction of VAT into the national tax system after April 1989, existing indirect taxes were reduced or abolished by the tax reform. Before the reform, there were some local taxes, such as entertainment tax and tax on consumption at hotels and restaurants among existing indirect taxes. Especially, the tax on consumption at hotels and restaurants has been one of the key revenue sources in large cities. By way of compensation, nealy 40 percent of VAT revenue became to be reallocated from national government to local government in the form of consumption transfer tax and local allocation tax. Because consumption transfer tax are distributed to prefectures based on population and number of employee, the amount cllected from a district does not quite correspond to the amount distributed to the district and some large cities have received no local allocation tax. Therefore, the fundamental tax reform carried out by the prime minister Mr. Takeshita resulted in reduction in pre-grant disparities and reinforcement of equalization effect.

Second, there was marked increase in local tax revenue during 1988-90 caused by "bubble economy". For example, the ratio of local tax to total financial revenue has risen to nearly 80 percent in the Tokyo metropolitan area because of sharp increase in corporate tax revenue. There was a rapid drop, however, in coporate tax revenue after the collapse of "bubble economy". Because financial revenue of large cities depends on corporate tax moor deeply than in other local bodies, pre-grant disparities in local tax revenue has been reduced quite extensively as figure 2a indicates.

5.2. Maintaining local revenue at national minimum

The extent of equalization depends on not only equalizing design of local allocation tax but also the total amount to be distributed to local authorities. It is helpful, therefore, to make a historical survey of the process how has the total amount of local allocation tax been maintained at a level high enough to provide public service. As mentioned before (section 3.1.), legal amount of local allocation tax has never been distributed as an actual aggregate amount, because some special measure has been taken every year to deal with a shortage of financial resources. Table 10 makes a survey of "Special Measure concerning Local Public Finance"(chihozaisei-tusk) . Historical development of the system can be divided into following four periods.

Table 10

During the first half of rapid growth era, the tax sharing ratio applicable to the three

national taxes has usually been raised when the relevant national tax were reduced by the national government, causing revenue shortages in the local allocation tax. The tax sharing ratio has been increased six times starting from 22 percent to 29.5 percent. However, the cause of continuous increase in the total amount of local allocation tax and a balanced budget policy pursued by the local public finance was not a raise in the tax sharing ratio but an automatic increase in the three national taxes. Net increase in the aggregate amount of local allocation tax throughout this period reached to a total of 574.7 billion and its breakdown is as follows: the amount originated in raising the tax sharing ratio was 61.4 billion (10.7 percent); by the automatic increase in national three taxes, 508 billion (88.4 percent); by a multiplier effect between the two, 5.3 billion (0.9 percent).

During the latter half of the rapid growth era, balancing the macro-economic stabilization policy and the tendency of automatic expansion built in the local allocation tax became to be a political issue. The share of local allocation tax to the general account increased automatically starting from 17.8 percent in FY 1960 to 22.0 percent in FY 1970 as the general account of the national budget pursued a balanced budget policy. Opinions, however, were divided among actors on this point. Generally speaking, Ministry of Finance (MOF) insisted that the year to year adjustment should be systematized in local allocation tax. In their opinion, special measure should be taken automatically in a prosperity such as reduction in the amount of local allocation tax carried over from previous years, increase in the amount of local allocation tax carried forward next year and advanced repayment of the borrowing from the Trust Fund Bureau.

Contrary to MOF, Ministry of Home Affair (MOHA) was against systematization of the year to year adjustment because local public services such as education, social welfare have to be provided regardless of business conditions and they does not match Keynesian type of macro-economic stabilization policy. As a result of these controversy, the year to year adjustment was not systematized formally during this period. However, in FY 1966 long-term bond issued for public works expenditures and also fiscal policy expanding effective demands by means of public works and tax cut was put into practice. In connection with this stabilization policy, actual year to year adjustment was carried out *de facto* through raising the tax sharing ratio and borrowing from the Trust Fund Bureau.

During oil crises and thereafter, the total amount of financial shortage has exceeded the legal amount of local allocation tax "continuously" and "remarkably" because of rapid decrease in both three national taxes and local taxes. The discussion was focused on whether the tax sharing ratio would be altered based on the provision of Local Allocation Tax Law (clause2, article6-3) which was already explained in section 3.1. Table 10 summarize the "Special Measure concerning Local Public Finance" after oil crises. By FY 1984, both short-term borrowing from the Trust Fund Bureau and issue of deficit-covering local bond played a key role in the local public finance. In FY 1977, while MOHA and the representatives of local

authorities claimed raise in the tax sharing ratio by 5 percent, MOF has rejected this request because of huge financial deficit in the national budget. As a result, following "memorandum" has been confirmed between both Minister of Finance and of Home Affair in 1977.

(a) to make up for the amount of financial shortage by increase in both local allocation tax and deficit- covering local bond. (b) to increase the amount of local allocation tax by transferring provisional local grant from the general account and by borrowing from the Trust Fund Bureau. As for the latter, to redeem a half amount of the principal and the total amount of interest by the burden of the general account of national budget. (c) to carry over special addition of local allocation tax in order to make up for the difference in interest between local bond placed on the market and that absorbed by the Trust Fund Bureau.

As these measures continued until 1983, actual amount of local allocation tax has exceeded the legal amount of that drastically. However, revenue of three national taxes increased steadily under "bubble economy" in the late 1980s. The amount of financial shortage ,therefore, has been reduced quite extensively as Table 10 indicates. In FY 1984 following new "memorandum" was confirmed between the two Ministers. (a) to suspend borrowing from Trust Fund Bureau as a rule after FY 1984. (b) to redeem the half amount of the both principal and interest by the burden of each national and local government. (c) to transfer special addition of local allocation tax from the general account of national budget , in place of borrowing from the Trust Fund Bureau.

During so-called "bubble economy" and thereafter: It should be stressed that the aim of present system is to make up for the amount of financial shortage in a long term rather than short-term. In other words, the tax sharing ratio must remain unchanged, even if total amount of financial shortage exceeds the legal amount of local allocation tax. National government is required to raise the tax sharing ratio if the legal amount of local allocation tax differs from financial shortage "continuously" and "remarkably". But this fundamental principle could not be applied in the strict sense of the word into the era of post-rapid growth . In practice ,the short-term borrowing from the Trust Fund Bureau and issue of deficit-covering local bond played a key role in local public finance other than raising tax sharing ratio. Indeed, redemption for the local burden of 5.7 trillion Yen has been started in FY 1987 and advanced redemption was completed in FY 1991. But this "success" of redemption policy should be attributed to the "bubble economy" originating unexpected increase in local tax revenue. Moreover, issue of deficit-covering local bond will weigh heavy on the shoulder of local authorities. The question is how to solve these negative legacy left to our age and strength local accountability through decentralization of intergovernmental fiscal relation.

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Table1 Reallocation of Tax Revenue between National and Local Government (%)

	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1985	1989
(1) Government Expenditure												
Total/GNP	11.5	17.2	21.5	14.2	21.5	22.1	23.6	18.8	20.3	29.4	27.6	28.6
Central/GNP	7.5	7.5	14.2	8.2	9.5	13.7	10.4	5.9	5.9	9.9	10.2	10.9
Local/GNP	4.0	4.0	7.3	6.0	12.1	8.4	13.2	12.8	14.4	19.5	17.4	17.6
(2) Tax Allocation before Fiscal Transfer												
National Tax/Total Tax	69.4	63.2	70.5	62.1	64.3	78.5	75.2	70.8	67.5	64.1	62.6	64.2
Local Tax/Total Tax	30.6	36.8	29.5	37.9	35.7	21.5	24.8	29.2	32.5	35.9	37.4	35.7
Income Tax/Total Tax	0	0	5.9	5.9	10.0	26.9	38.6	21.7	31.2	38.1	39.4	36.9
(3) Fiscal Transfers												
Transfer as % of general account	3.7	2.7	1.8	4.0	10.6	13.8	35.1	47.2	48.7	44.0	38.5	36.0
Local allocation tax as % of general account	-	-	-	-	-	6.1	17.1	17.8	22.0	18.7	17.8	20.4
Transfer as % of local revenues	6.7	5.4	2.8	4.7	8.2	21.2	40.8	39.3	37.7	40.8	34.7	31.8
Local allocation tax as % of local revenues	-	-	-	-	-	9.2	19.9	14.8	17.0	17.3	15.5	18.0
(4) Tax Allocation after Fiscal Transfer												
National Tax/ Total Tax	68.4	62.2	70.1	61.3	60.8	74.9	65.2	57.0	51.1	46.0	45.3	47.5
Local Tax/ Total Tax	31.6	37.8	29.9	38.7	39.2	25.1	34.8	43.0	48.9	54.0	54.7	52.5

(Source) Mochida,N.[1993], *TOSHIZAISEI NO KENKYU* (Public Finance of Japanese Cities), Tokyo University Press.

note: transfer includes both local allocation tax and specific-purpose grant.

Table2 Fiscal Equalization at the prefectural level per capita, FY 1990.

names of prefectures	income (1)	prefectural tax (2)	local allocation tax (3)	after equalization (4)=(2)+(3)
Rich prefecture				
Tokyo	4,467 (1.69)	405,209 (3.78)	0	405,209 (1.93)
Osaka	3,348 (1.27)	172,144 (1.60)	0	172,144 (0.82)
Aichi	3,242 (1.23)	177,416 (1.65)	0	177,416 (0.84)
Kanagawa	3,190 (1.20)	139,078 (1.29)	0	139,078 (0.66)
Chiba	3,084 (1.17)	108,588 (1.01)	23,048	131,635 (0.62)
Poor prefecture				
Okinawa	2,001 (0.75)	56,465 (0.52)	132,684	189,150 (0.90)
Kagoshima	2,153 (0.81)	65,581 (0.61)	145,979	211,559 (1.01)
Aomori	2,160 (0.81)	62,853 (0.58)	167,599	230,453 (1.10)
Nagasaki	2,164 (0.82)	64,001 (0.59)	142,854	206,855 (0.98)
Kouchi	2,166 (0.82)	69,340 (0.64)	216,606	285,946 (1.36)
Average	2,635 (1.00)	107,108 (1.00)	102,259	209,367 (1.00)

Note:Figures in parentheses are the proportion of the national average.

source: MOHA data.

Table 3 Disparities in Tax Capacity

(coefficients of variation in the Notional Tax Income)

	Early 1980s	Mid 1970s
Australia (1975、1981)	0.04	0.06
Canada (1976、1981)	0.22	0.18
Denmark (1974、1980)	0.11	0.15
England (1976、1983)	0.13	0.11
Germany (1975、1981)	0.13	0.13
United States (1975、1982)	0.13	0.13
Japan (1975、1982) ※	**0.14**	**0.15**

(source) H.Wolman and E.Page [1987],The Impact of Inter Governmental Grants on Subnational Resource Disparitries; A Cross-National Comparison.

Note: Data as to Japan is estimated and added by N.Mochida.

Table 4
Correlation Between Notional Tax Income and Per Capita Grant

	Early 1980s	Mid 1970s
Australia	-0.71	-0.71
Canada	-0.92	-0.92
Denmark	-0.83	-0.83
England	-0.37	-0.34
Germany	-0.64	-0.87
United States	-0.13	+0.12
Japan (caseA)※	**-0.79**	**-0.77**
Japan (caseB)※※	**-0.80**	**-0.79**

(source) see Table 3 .

Note: Grant means unconditional plus conditional grant.
Grant means only unconditional grant, that is local allocation tax.

Table 5

The Reduction of Resource Disparities Through Grant Systems (1980s)

	Notional Tax Income	Notional Equalized Revenue	Difference	Percent Difference
Australia	0.04	0.12	+0.08	+200
Canada	0.22	0.06	-0.16	-73
Denmark	0.11	0.03	-0.08	-73
England	0.13	0.11	-0.02	-15
Germany	0.13	0.08	-0.05	-38
United States	0.13	0.12	-0.01	-8
Japan (caseA)※	**0.14**	**0.27**	**+0.13**	**+92**
Japan (caseB)※※	**0.14**	**0.22**	**+0.08**	**+63**

(source) see Table 3 .

Note: Grant means unconditional plus conditional grant.

Grant means only unconditional grant, that is local allocation tax.

Table 6 Tax-sharing ratio, 1954-1995 (%)

Fiscal year	income tax	corporate tax	alcholic tax	consumption tax (4/5)	tobacco tax
1954	22.0			-	-
1956	25.0			-	-
1957	26.0			-	-
1958	27.5			-	-
1959	28.5			-	-
1960	28.8			-	-
1962	28.9			-	-
1965	29.5			-	-
1966	32.0			-	-
1989-	32.0			24.0	25.0

source: MOHA data.

Table 7 service item, indicator and unit cost (prefecture)

item of local service		indicator	
		current expenditure	capital expenditure
1.police		number of policeman 9,487	/
2. public works	(1).road and bridge	area of roads 233	length of roads 6,921
	(2).river repair	length of river 121	length of river 1,528
	(3).port construction	length of moorings 33	length of outer fence 13
	(4).others	population 1	population 3
3.education	(1).primary school	number of teachers 4,626	/
	(2).secondary school	number of teachers 4,628	/
	(3).high school	1.number of teachers 7,011 2.number of school pupils 55	number of school pupils 48
	(4).special education	1.number of teachers 4,856 2.number of school pupils 209 3.number of classes 966	number of classes 1,260
	(5).others	population 3	/
4.social welfare and security	(1).livelihood protection	population of town,village 4	/
	(2).social welfare	population 6	population 1
	(3).health and sanitary	population 8	population
	(4)health and welfare for the aged	population of the aged -	population of the aged
	(5).labor	population 1	number of the unemployment 1,260
5.promotion of industry	(1).agriculture	number of farmhouses 83	area of arable land 96
	(2).forestry	area of forest 6	area of forest 15
	(3).fisheries	work force of the marine products industry 204	work force of the marine products industry 124
	(4).commerce and industry	population 1	/
6.miscellaneous	(1). planning and promotion	population 1	population 0.5
	(2).tax administration	number of households 9	/
	(3).pension	number of pensioners 1,356	/
	(4).others	population 4	1.population 0.5 2.area of prefecture 1,310

(source)MOHA data.

Note:figure in both current and capital expenditures is unit cost disignated by law in FY 1994.

(thousand of Yen)

Table 8 service item, indicator and unit cost (municipalities)

item of local service		indicator	
		current expenditure	capital expenditure
1.fire fighting		population 9	/
2. public works	(1).road and bridge	area of roads 107	length of roads 752
	(2).port construction	length of mooring 31	length of outer fence 13
	(3)city planning	population who live in city planning area 1	population who live in city planning area 1
	(4)park	population 0.5	population 0.3
	(5)sewerage work	population 0.1	population -
	(6)others	population 1	population 0.6
3.education	(1).primary school	1.number of school pupils 43 2.number of classes 749 3.number of schools 7,361	number of classes 568
	(2).secondary school	1.number of school pupils 36 2.number of classes 953 3.number of schools 8,155	number of classes 568
	(3).high school	1.number of teachers 7,042 2.number of school pupils 54	number of school pupils 31
	(4).others	population 6	population 0.3
4.social welfare and security	(1).livelihood protection	population of city 4	/
	(2).social welfare	population 8	population 0.8
	(3).health and sanitary	population 7	/
	(4).health and welfare for the aged	population of the aged -	population of the aged -
	(4).garbage collection	population 6	population 0.6
	(5)labor	/	number of the unemployments 1,248
5.promotion of industry	(1).agriculture	number of farmhouses 47	number of farmhouses 42
	(2).commerce, industry	population 1	/
	(3).others	work force of the marine , forestry and mining products industry 57	work force of the marine , forestry and mining products industry 109
6.miscellaneous	(1).planning, promotion	population 3	population 0.8
	(2).tax administration	number of households 9	/
	(3).family and resident registration	number of households 4	/
	(4).others	1.population 10 2.area 1,216	1.population 1 2.area 509

source:MOHA data.

Note:figure in both current and capital expenditures is unit cost disignated by law in FY 1994.

(thousand of Yen)

Figure 1 Diagram of size modification coefficient

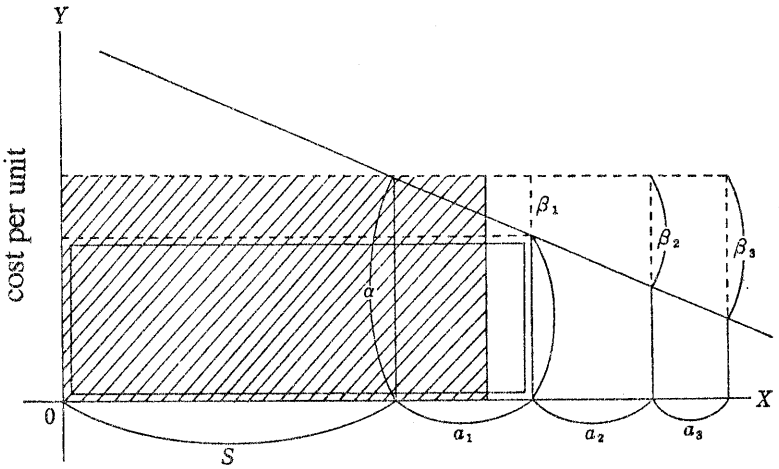

figure of indicators

source:Nobuo Ishihara, Chihozaiseichoseiseidoron (Studies in fiscal equalization),1984,Gyosei.

Table 9 Taxes included in the Basic Financial Revenue (prefectures)

Classification	Item	Tax included in Basic Financial Revenue	Tax excluded from Basic Financial Revenue
revenue for general purpose	ordinary tax	(listed tax prescribed by the Local Tax Law) prefectural inhabitants' tax, enterprise tax, property acquisition tax, tobacco consumption tax, golf course use tax, special local consumption tax, motor vehicle tax, mine-lot tax, hunter license tax, property tax	non-listed taxes not prescribed by the Local Tax Law
	local transfer tax	consumption transfer tax	
	others	grant to the seat of national property	charge for irrigation, property income, differential grant to backward region
earmarked revenue	earmarked tax	motor vehicle acquisition tax, light oil delivery tax	
	local transfer tax	local road transfer tax, petroleum gas transfer tax, aviation fuel transfer tax	
	others	special grant for traffic safety	(all earmarked revenue out of the left columns) specific purpose grant, charge/fee, share, borrowing

(municipalities)

Classification	Item	Tax included in Basic Financial Revenue	Tax excluded from Basic Financial Revenue
revenue for general purpose	ordinary tax	(all listed tax prescribed by the Local Tax Law) municipal inhabitants' tax, property tax, small motor vehicle tax, tobacco consumption tax, mineral product tax, special land holding tax	non-listed taxes not prescribed by the Local Tax Law
	grant from prefecture tax	grant from prefectural inhabitants' tax on interest, grant from golf course use tax, grant from special local consumption tax	
	local transfer tax	consumption transfer tax, special tonnage transfer tax	
	others	grant to the seat of national property	property income,
earmarked revenue	earmarked tax	bisiness office tax	spa tax, city planning tax, water tax
	grant from prefecture tax	grant from motor vehicle acquisition tax, light oil delivery tax	
	local transfer tax	local road transfer tax, motor vehicle transfer tax, aviation gas transfer tax, petroleum gas transfer tax	
	others	special grant for traffic safety	(all earmarked revenue out of the left columns)specific purpose grant, charge/fee, share, borrowing

Figure 2a Degree of equalization by local allocation tax

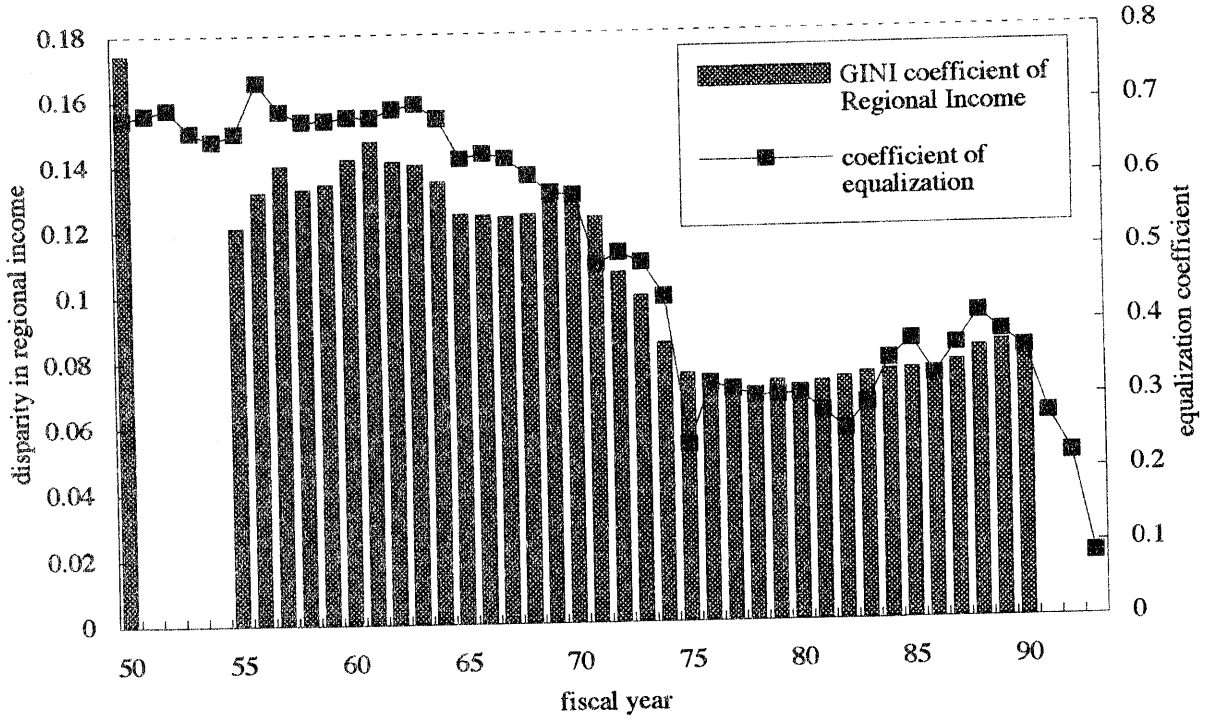

Figure 2b Regional disparities in financial resources (prefecture)

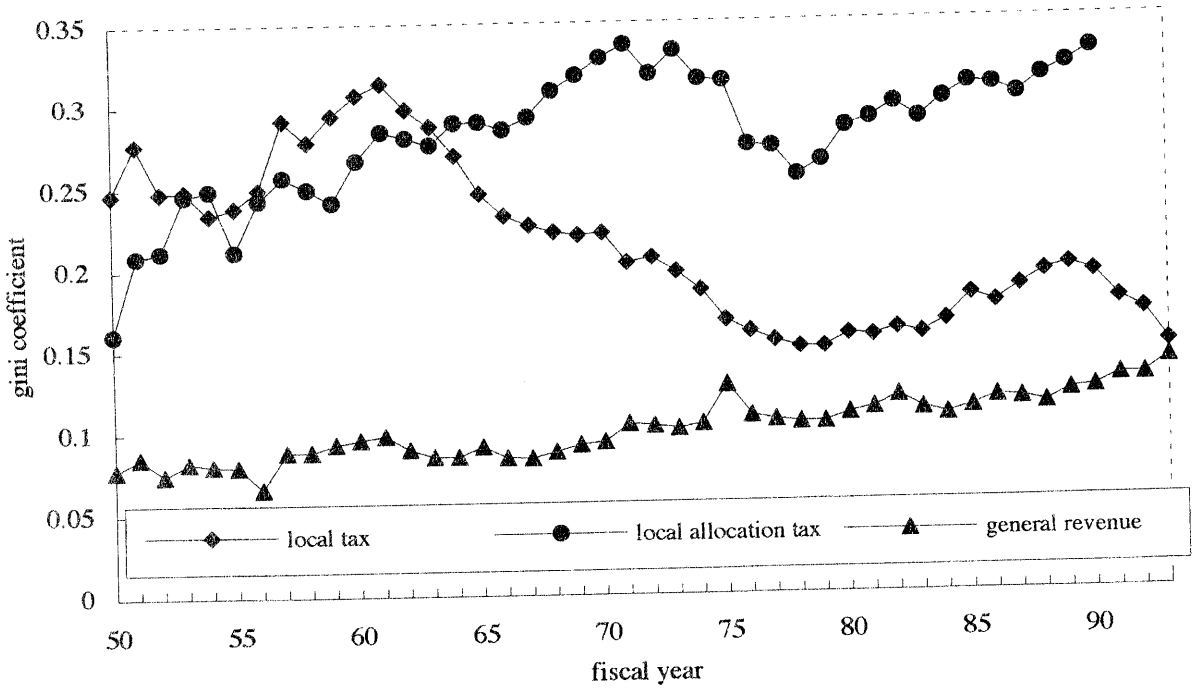

Table 10 Special Measure concerning Local Public Finance (one hundred million)

Fiscal Year	1975~79	1980~84	1985~89
1.the amount of financial shortage	28,046 (100)	20,593 (100)	16,514 (100)
ordinary balance	28,046 (100)	20,593 (100)	1,757 (10.6)
reduction in the maching rate of grant	0 (0)	0 (0)	14,757 (89.3)
2.increase in local allocation tax	15,413 (54.9)	9,757 (47.4)	2,709 (16.4)
borrowing from Trust Fund Bureau	14,408 (51.3)	8,932 (43.3)	900 (5.4)
special addition	1,005 (3.5)	825 (4.0)	1,809 (10.9)
3.increase in local bond	12,676 (100)	10,836 (52.6)	11,872 (71.9)
4.increase in local tax	0 (0)	0 (0)	1,933 (11.7)

Note: Figures in parentheses are percentage of the amount of financial shortage.
all figures are average per year.
sources:MOHA, *Chihokoufuzeiseido Enkakusi* (The History of Local Allocation Tax) etc.