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Some Questions on the Method of Public-Finance Science

by *Juichi Takagi*

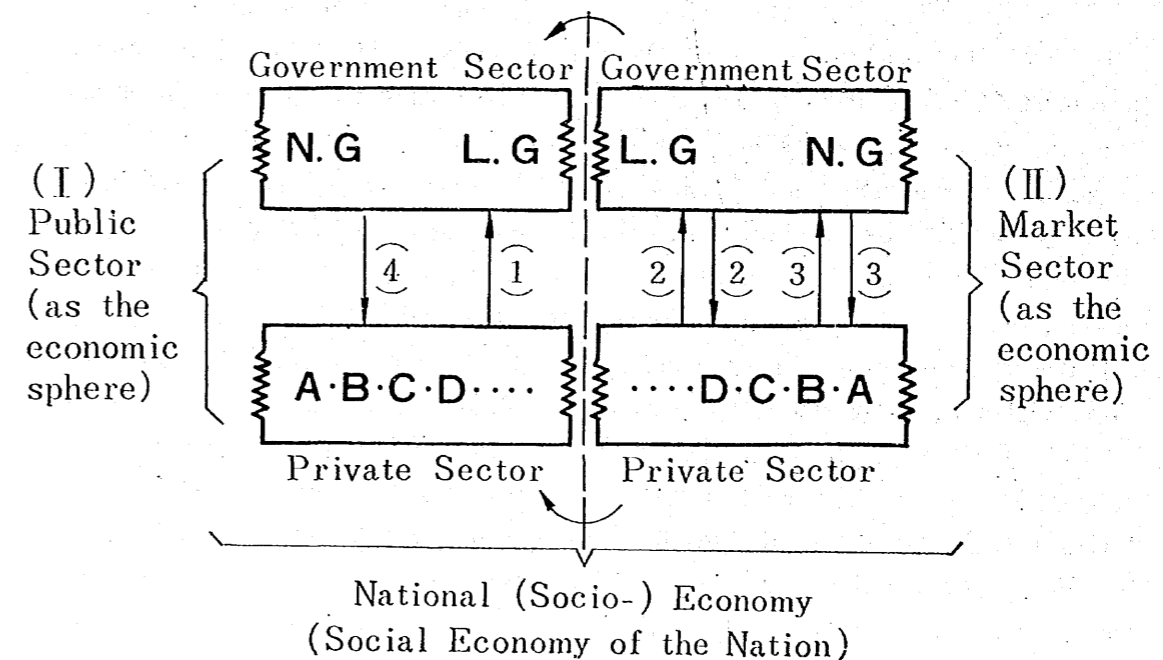
In 1960, I wrote a monograph which dealt with "Theories of the basic Idea and the System of Public-Finance Science in Japan in the Period 1955~1960" (Mita Journal of Economics, published in August, p. 1~p. 15). After that time, Prof. K. Okano, "The Scientific Method of Public-Finance Science" was published (First Edition, 1960—Revised Edition 1961). Since 1961, his four works were published—Principles of National Taxation (1962), Income Tax and Corporation Tax (1964), The Theory of Public Expenditures (1965), National Taxation (1965). All of these works were written on the basis of his basic ideas expressed in his "Scientific Method of Public-Finance Science" (1961). Prof. K. Okano wrote the monograph (in The Review of Economic and Commerce, Kanagawa University, March, 1966), "The Cognition-object of Public-Finance Science", in which he expressed briefly his basic ideas and discussed my questions, expressed in my paper in the Journal of National Economy (Kokumin Keisai Zasshi, Kobe University, March 1966). Then, I was given a chance to express my ideas, chiefly in a reply to him.

In his monograph (1966), after having explained meanings of "Erkenntniszweck", "Erkenntnisobjekt", "Erfahrungsobjekt" and "Erkenntnisstheorie" of the Public-Finance Science as one of social sciences, he agrees to the classification of the economic science by Carl Menger (Untersuchungen über die Methode der Socialwissenschaften, und der politischen Oekonomie insbesondere, 1883). According to Carl Menger, the economic science is to be classified into three groups: (1) Die historische Wissenschaft—the historical science—(a) the History and (b) Statistics of national economy which have to study and express (erforschen und darstellen) the individual nature (Wesen) and individual relationships of economic phenomena—(2) the theoretical science of national economy (Theoretische Nationalökonomie) which has to study and express the general nature (Wesen) and the general relationships (die Gesetze=Laws) of national-economic phenomena.—(3) Practical Sciences (Die praktischen Wissenschaften oder Kunstlehren) of national economy which have to study and express the principles for suitable actions to realize aims (adapted to different circumstances). The practical sciences

are divided into (1) the National Economic Policy (Volkswirtschaftspolitik) and (2) the practical sciences of special economic units (Singularwirtschaftslehre). (2) are divided into (a) the Public-Finance Science and (b) the practical science of private economic units (Privatwirtschaftslehre). According to Carl Menger, Public Finance means the public household (Haushalt) of the national (or central) and local governments as biggest special economic units in the nation (Untersuchungen, SS. 5~9, SS. 255~6).

Prof. K. Okano agrees to these classification of Carl Menger in which the Public-Finance Science belongs to the group of practical science (Kunstlehre=Science of Art). But Prof. Okano does not agree to ideas of Carl Menger in the point that C. Menger denied the "Value-judgement" in Public-Finance Science as a practical science or Kunstlehre. Prof. Okano argues that the problem of Value-judgement is to be dealt with in the Public-Finance Science as a practical science.

I have now the view quite opposite to the idea of Prof. K. Okano, regarding the classification of Public-Finance Science into Practical Science and the problem of Value-judgement. Prof. Okano agrees to the classification of Public-Finance Science into one of practical sciences, but I can not agree to this classification of Carl Menger. Prof. Okano does not agree to the idea of Carl Menger who denied Value-judgement in the Public-Finance Science,



but I agree to the idea of Carl Menger in that he denied Value-judgement. I start from the very simple fact, because I believe that there are cases in which facts of fundamental importance in Public-Finance Science are latent in simple facts considered as self-evident or negligible.

Public-Finance Science deals with public-finance phenomena. Public-Finance phenomena are appearance-forms of public-finance activities. Economic-Subjects that do those activities are the national (central) government and local governments (including their related organs and socialized industries). I think, it is convenient to show a brief diagram, in order to explain my ideas.

In this brief diagram, N.G and L.G mean the National (Central) Government and Local Government as economic units and economic-subjects that do public-finance activities. They (N.G, L.G) as economic units compose the Government Sector in the National Economy.

A·B·C·D mean private economic units that compose the private sector.

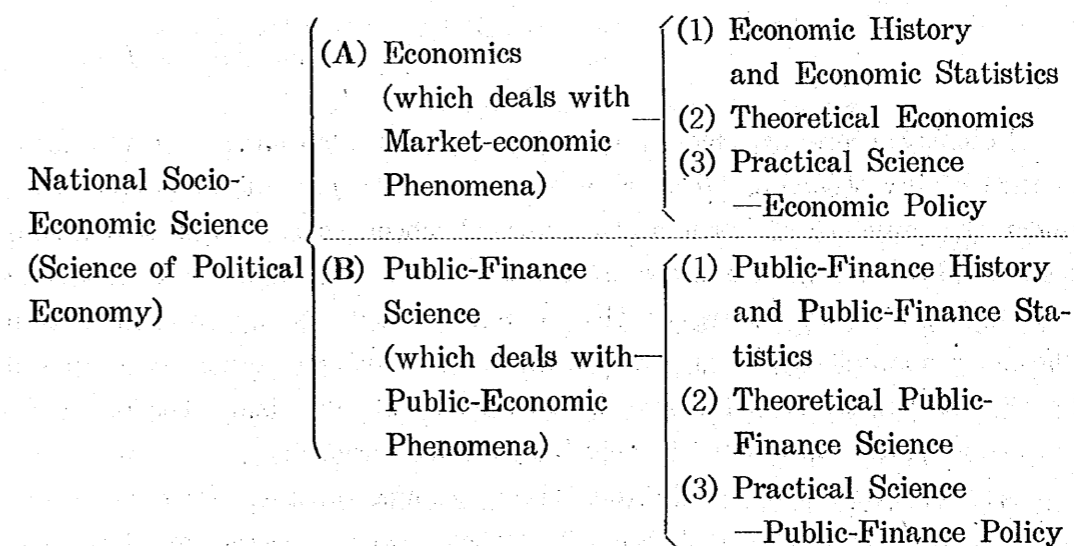
The Line (1) means compulsory raising of money (taxation, as the chief form) and compulsory raising (acquisition) of goods and services in the form of so-called Concealed Expenditure, executed by N.G and L.G. Those forms of raising of money, goods and services mean, at the same time, to private economic units, which compose the private sector, compulsory disposals (in the non-exchange relation) of money, goods and services.

The line (2) means the money-raising in the form of voluntary public-loan from the economic units of the private sector. The line (3) means the purchase of goods and services of N.G and L.G from economic units of the private sector in the market process. The line (4) shows the fact that money, goods and services raised by N.G and L.G in those processes are disposed by N.G and L.G as economic units in the Government Sector which form the public economic sphere, and the fact that "Public Goods" in form of money, goods and services are provided by N.G and L.G, and given to the private economic units in the non-exchange relation=public economic relation, without any payment by private economic units.

The Object, in the broad sense, of the Public-Finance Science=Erfahrungsobjekt (empirical object) includes the economic activities of N.G and L.G in (II) the market sector as the economic sphere. But the proper object, in the narrow sense=Erkenntnisobjekt (cognition-object) of the Public-Finance Science includes only the economic activities, executed in public-economic relations (non-exchange relations), of both economic units which

form the government sector and the economic units which form the private sector; that is, only those phenomena as the appearance-form of those activities mentioned before.

I think, the System of the Economic Science (National Socio-Economic Science) is to be as follows:



Because I have these views, I can not agree to the classification of economic sciences of Carl Menger (in his *Untersuchungen*, 1883) and also to the idea of Prof. Okano who agree to of Carl Menger the classification. Moreover, I can not agree to the view expressed in U.K. Hicks, *Public Finance* (2nd Edition, 1955) which is now one of dominant views of this science. According to U. K. Hicks, public finance is essentially a department of economics, that is, applied economics and an art. As "art" means *Kunst* in German, Public Finance (Science of Public Finance) is *Kunstlehre*, in the view of U. K. Hicks, as expressed in Carl Menger, *Untersuchungen*.

With regard to the question of Value-judgement, I wish to be allowed to reply briefly to Prof. Okano, in saying that I agree to the view of Prof. Lindahl expressed in his "Tax Principles and Tax Policy" (*International Economic Papers*, No. 10, 1960). According to Prof. Lindahl, political Value-judgements can not be given scientific basis, but the relationship—factual causal relationships—can be made the subject of scientific analysis.

In my view, Value-judgements do not belong to the Object (cognition and empirical) of Public-Finance Science, but the factual causal relationships belong to the Object of this science.

Social Policy and the Stage of Monopolistic Capitalism

—The article is written to “Basic Problem in Social Policy”
in Prof. K. Ohkochi’s Sixtieth Birthday Memorial Theses—

by Kanae Iida

Recently there are more discussions on using social policy means as method of investigating labor problems. Up to the present, in our country, under the influence of German neo-historical school, social and labor problems were studied within the scope of social policy. But against this, strong opposing opinion which argues that problem should be approached within “labor economics” appeared. However, present author cannot be convinced by this view because it ignores the standpoint of criticizing the policy by how state power intervenes in solution of labor problem.

At this time book containing theses commemorating Prof. Ohkochi’s Sixtieth Birthday was published. The theses were written by the people who were influenced by Prof. Ohkochi who played a great role in the study of social policy in our country and it was edited having criticism and re-examination of social policy as the theme.

In the present article, author tries to emphasize the meaning of studying social policy in our country, to investigate the historical process of formulating Ohkochi’s theory and to make clear its limitation and scientific foundation. The article consists of the following chapters.

- 1) Introduction.
- 2) Ohkochi’s theory in the history of social policy in our country.
- 3) On so-called productive power theory.
- 4) Stages of monopolistic capitalism and studies of social policy.

In 1) the epoch-making importance of social policy theory in Ohkochi’s theory is made clear. In 2) process of formulating Ohkochi’s theory and its role in history of social policy thoughts in Japan is investigated centering around thirty years of the Second World War. In 3) characteristic of productive power theory that forms the center of Prof. Ohkochi’s social policy theory is explained and its scientific foundation is studied. At the same time its irrational character is made clear. In 4), as a conclusion, mistake which asks social total capital in labor force policy of absolutism

which is the central theme in the theoretical construction of Ohkochi’s Theory is pointed out.

State Capitalism in Underdeveloped Countries

—State Capitalism and State Monopoly Capitalism as
a Physical Foundation for the Transition to Socialism—

by Ayako Hirano

After the Second World War, in the process of deepening general crisis of capitalism, many countries as China and Eastern European countries departed from capitalist economic system and moved into socialist economic system. On the other hand, many new countries in Asia and Africa attained political independence and established “Racial Democratic State” having anti-colonialistic nationalism as a background. These new nations have state capital=state enterprise, and joint investment of state capital and racial capital (joint enterprise of public and private) as a foundation. They are relatively free from economic subordination of foreign capital and try to push the possibility of their national economy. Formation and development of the state capital in underdeveloped countries, as it can be observed typically in India, has naturally become an object of many discussions in relation to new colonialism or non-capitalistic development which forms the physical foundation (enlargement of public sector) of the transition to new socialist economy.

In the present study we re-examine “Non-capitalistic development theory” which was precisely systematized by A. N. Соболев and compare its result with Rostow’s theory (W. W. Rostow). On the other hand we investigate its relationship with the theory by Yugoslav theorists who define state monopolistic capitalism as state capitalism with state ownership of relative originality naturally this is common to stage theory (K. Zieschang) by the development of socialistic productive power.

We also study the meanings of concentration and accumulation of social capital and the enlargement of productive system that are the necessary condition for the transition to socialism; the contents of socialization of consciousness that corresponds to these and finally systematize the logic for the

transition at the present stage. Especially we criticize the theory of Yugoslav theorists or Kurt Zieschang from the fact that enlargement of state capital and public enterprise sector do not immediately imply the transition to socialistic economy but rather it is one of the capitalistic development under present state capitalism; public enterprises and public economies in many regions realized the socialist revolution already during the process of establishment of Mainland China was not state capitalism. We consider its relationship with state capitalism as one of additional economic systems after the establishment of proletariat government.

This study is the continuation of former studies that appeared in March, April and June issues of *Mita Gakkai Zasshi*, 1965, titled "The Underdeveloped Pattern and its Chinese-type Development in the Construction of Socialistic Economy".

Locational Process

—A Hypothesis on Locational Behavior—

by *Junjiro Takahashi*

All behavior must necessarily occur in space. To be adaptive, any locational units must take their places in certain relationship to one or more locational units which already occupied some place in the space. Locational process is defined as a sequence of the locational decisions of such units, which are made in reference to the existing units or points in the space. The spatial arrangement of units or points resulted from such locational process is called locational pattern. It is well known that there are three basic types of theoretical locational pattern; regular, random and clustered pattern. The generating mechanisms of those patterns have been intensively studied by a group of ecologists, who developed various mathematical models for those patterns in terms of the probability theory. Yet, except in the recent past, very few studies have appeared for explaining those theoretical patterns in terms of conventional location theory. The main purpose of this study is to present a basic hypothesis which consists of a set of rules on locational behavior, and to show how the above three locational patterns will

be derived from such a hypothesis through a locational process. The report is divided into three sections; the first is devoted to defining basic terms, and giving some postulates on locational behavior. The basic postulate is as follows; the behavior of any locational unit is subject to maximization or minimization, principle in reference to its utility in the broadest sense, and the mechanism which regulates their behavior is essentially stimulus-response type interaction. Various restrictions of the scope are also given in this part. The most important, among others, is that locational process which is discussed here involves a no feed-back mechanism, in other words, given a set of locational units, any locational units, L_i can only make its decision in reference to an existing locational pattern which is formed as the result of the decision of preceding units, L_1, L_2, \dots, L_{i-1} , and no preceding units can make any response or reaction to the decision of their succeeding unit.

The second section is the main part of this study, that is, a set of rules on general locational behavior is presented as a hypothesis and derivation of three theoretical locational patterns through a locational process is analyzed. Through the analysis, the level of generalization is rather high, and locational space is assumed as one or two dimensional Euclidean Space, R^1, R^2 . The third section is the supplement, which explains some characteristics of response structure and examines the possibility of agglomeration of units into one point based upon some concepts and theorems of graph theory.

The following is a brief summary of the hypothesis presented in this study.

Let us begin by proposing that any preceding locational unit L_i must exert some influences on the succeeding unit L_j . As mentioned above, the underlying interaction mechanism of those locational units is a stimulus-response type and we concerned with the locational process without feed-back mechanism, so that the first step of our analysis is to define L_j 's response to L_i in an appropriate way. The primary response of L_j is, of course, cognition of L_j on L_i 's influence in terms of its evaluation system. The L_j 's evaluation on those influences will essentially depend upon the relationships between L_i and L_j, R_j . To make our discussion go forward, the following simplification on those relationships is introduced, that is, we assume there are only three types of R_j available for L_i and L_j , association, competition and neutrality. By the first relationship, association, we mean the situation which involves any cases in which L_i 's interest is consistent with L_j 's

interest in terms of occupancy of space. There is some sort of positive benefit from co-existence for both L_i and L_j , or particularly for L_j in the scope of this study. The second relationship, competition, involves any cases in which L_j 's interest is contradicted to L_i 's interest, in other words, L_j can not share the same locational space with L_i except L_j has definite negative benefit for its existence in the space. The third relationship, neutrality involves the cases in which L_j 's interest is not related with L_i 's interest concerning with its location. L_j gives no attention on L_i , for L_i is completely out of consideration of L_j for its locational decision. Given such relationships between L_i and L_j , it will be reasonable to think that;

- 1) if ${}_iR_j$ is Association, L_j will evaluate L_i 's existence as favorable concerning its location in the space.
- 2) if ${}_iR_j$ is Competition, L_j will evaluate L_i as unfavorable, and
- 3) if ${}_iR_j$ is Neutrality, L_j is indifferent to its evaluation of L_i .

Generalizing on the preceding considerations, we arrive at our first definition of the primary response of L_j .

D.I We say that;

- ① L_j has positive cognition on L_i if L_j evaluates L_i 's influence as favorable for its existence, and it is denoted by ${}_iC_j^+$ or $+(\overrightarrow{L_jL_i})$
- ② L_j has negative cognition on L_i if L_j evaluates L_i 's influence as unfavorable for its existence, and it is denoted by ${}_iC_j^-$ or $-(\overrightarrow{L_jL_i})$
- ③ L_j is indifferent to L_i if L_j evaluates L_i 's influence as having no bearing on its existence, and it is denoted by ${}_iC_j^\circ$ or $0(\overrightarrow{L_jL_i})$.

The rule of primary response is as follows.

R.I For all possible pairs of L_i and L_j in a given locational space.

- 1) There are only three alternatives, ${}_iC_j^+$, ${}_iC_j^-$ or ${}_iC_j^\circ$, available for L_j 's primary response;
- 2) only one of the three alternatives is true for L_j in reference to L_i ; and
- 3) in any point of its locational decision, L_j knows whether its primary response is ${}_iC_j^+$ or ${}_iC_j^-$, or ${}_iC_j^\circ$.

By using set notation, the above statement can be expressed as follows;

In its locational decision, L_j has complete information on its first response in reference to L_i , ${}_iR_j^{(1)}$ where ${}_iC_j = {}_iC_j^+ \cup {}_iC_j^- \cup {}_iC_j^\circ$ and ${}_iC_j^+ \cap {}_iC_j^- \cap {}_iC_j^\circ = \phi$.

By assuming that the above evaluation system is workable for any locational units, L_i and L_j , let us consider the secondary response of L_j to L_i , which means L_j 's locational action given L_i . In order to make a rule for the secondary response, we must consider not only the nature of L_j 's

evaluation on L_i 's influence which have been considered thus far, but also the extent of L_i 's influence to L_j . Because, there is a general reaction system according to the postulate of the maximization principle mentioned above, and this system is depend upon the extent of influence exerted by L_i to L_j . For example, a locational unit L_j which has positive cognition on L_i 's influence to it, will try to maximize or at least to increase the extent of that influence which it evaluates as favorable for itself, and if L_j has negative cognition on L_i , L_j tries to minimize, or at least to decrease, the extent of L_i 's influence which is unfavorable to it.

The extent of the influences of L_i to L_j will also essentially depend upon ${}_iR_j$, but given ${}_iR_j$ defined above, it will depend upon two factors; first, the magnitude or frequency of the stimulus generated by L_i , and second, the distance from L_i of the affected unit L_j . Here we introduce the following side-rule;

For any of L_i which has ${}_iC_j$ or $-{}_iC_j$, as the primary response of L_j , SRI. The extent of influence of L_i is expressed, in its simplest form, as follows;

$$E_i = k \frac{S}{hD}$$

where E_i is the extent of influence exerted by L_i ; S is the magnitude of the stimulus generated by L_i ; D is the distance from the point l_i located by L_i , and both k and h are constant.

The meaning of the above formula is rather clear, that is, suppose a locational unit L_i at a point l_i in a given locational space, then L_i will exert an influence proportional to the magnitude or frequency of stimulus generated by itself at point l_i , and that influence declines with each added increment of distance away from l_i . (Note, from the standpoint of L_j 's response, S_i can be defined as the "Reaction Potential" of L_j)

Based upon the postulate, rule and side-rule discussed thus far, it is rather reasonable to think that if L_j has positive cognition on L_i 's influence, better locational decision for L_j is to locate itself as near as possible to the position of L_i since, by doing so, L_j can increase the extent of influence which is favorable to its existence, and if L_j has negative cognition on L_i , then L_j will locate itself as far as possible from the position of L_i .

Generalizing on the preceding considerations, we arrive at our next definition and rule.

D. II We say that;

- 1) L_j has adient behavior to L_i if L_j will approach L_i in reference to its c_j and it is denoted by Ad.
- 2) L_j has abient behavior to L_i if L_j will avoid or withdraw itself from L_i in reference to its c_j , and it is denoted by Ab.
- 3) L_j is neutral to L_i if L_j has neither adient nor abient behavior to L_i in reference to its c_j , and it is denoted by An.

R. II For any possible pairs of L_i and L_j in a given locational space,

- ① There are only three alternatives, Ad, Ab, and An available for L_j 's secondary response to L_i (L_j 's reaction to L_i);
- ② only one of the three alternatives is allowable for L_j in reference to L_i ; and
- ③ L_j 's choice of reactions is completely depend upon the predetermined L_j 's primary response in the following ways, that is, if L_j has positive cognition on L_i , then L_j must have adient behavior to L_i ; if L_j has negative cognition on L_i , then L_j must have abient behavior to L_i ; and if L_j is indifferent cognition on L_i , then L_j 's behavior to L_i must be neutral.

By using set notation, the above statement can be expressed as follows;

$${}_iR_j^{2)} = \text{Ad} \cup \text{Ab} \cup \text{An}$$

$$\text{Ad} \cap \text{Ab} \cap \text{An} = \phi$$

$$\begin{cases} {}_iC_j^{+)} \in {}_iC_j^{+)} \longrightarrow {}_iR_j^{2)} \in \text{Ad} \\ {}_iC_j^{+)} \in {}_iC_j^{-)} \longrightarrow {}_iR_j^{2)} \in \text{Ab} \\ {}_iC_j^{+)} \in {}_iC_j^{\circ)} \longrightarrow {}_iR_j^{2)} \in \text{An} \end{cases}$$

where ${}_iR_j^{2)}$ means the second response of L_j to L_i .