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SHIFTING OF THE JAPANESE CORPORATION INCOME TAX AND THE DIFFERENTIAL TAX BURDENS ON CORPORATIONS BY SIZE-GROUPS

SEIJI FURUTA

Contents

PREFACE

This work is an attempt, first of all, to draw an emprical conclusion on the shifting and the incideuce of the Japanese corporation income tax, based on Krzyzaniak-Musgrave model (c.f. Marian Krzyzaniak and Richard A. Musgrave, *The Shifting of the Corporation Income Tax—An empirical study of its short-run effect upon the rate of return*. The Johns Hopkins Press, Baltimore, 1963). While Krzyzaniak and Musgrave are left with the "unexpected result" of shifting well in excess of 100 precent for the American corporation income tax, this paper obtained more unexpected conclusion of at least 200 percent shifting for the Japanese one. The first part of this paper dealt in this point of view with the meaning

and interpretation of the hypothesis made on the basis of at least 200
percent shifting, and at the same time, inquired into the policy implica-
tions of the Japanese tax system, if the hypothesis be accepted.

The second part of this paper pointed out the differential tax burdens
of corporations by size-proups, generally favoring giant corporations,
and not the smaller ones. In viewing the present corporation tax
system, there is hardly any need of such different treatment of busi-
nesses by their sizes. Previously, the national income double plan
(1961-1970) explained that "the adjustment of differences among enter-
prises is a major problem for the smaller businesses." The plan proceeds
further that "in solving the problem, the obstacles in structural and social
conditions should be effectively removed, and it is essential that the
measures to that effect be pushed in earnest." There are, no doubt, con-
tradictions between the policy intentions of the corporation tax system
and the national income double plan. This paper argued against the con-
tradictions in view of the significance of economic stabilization, its growth
and the equity of income distribution in contemporary Japan.

The Inquiry Commission on Tax System (Zeisei Chosa-kai), which was
started in 1963, in considered to have been set with the object to look into
the general subject, "What should be the fundamental tax system of
Japan in the futnre, promptly responding to her social and economic de-
velopment?" In other words, the Commision was entrusted with the task
of delineating a blue print for a long-run basic tax system. Of course,
the corporation tax system made an important item in this venture.

To begin with, we ask: "To effect a radical change in the corporation
tax, what questions should be considered?" In the third chapter of the
*Separate Volume of the Interim Report on the Revision of Taxation
System Adopted in* 1965, published by the Commission, is taken up the
theme," "Reduction of the Corporation Tax Burden." At the outset of
the chapter is concisely stated the basic problem which the corporation tax
of Japan is now confronted, as follows: "Concerning the proper manage-
ment of the corporation tax burden, there are still a number of questions
to be dealt, for example, how the shiftings and the incidences are taking
place?, what significance should be attributed to the impersonal entity
approach in the light of the coming direction of economic development,
and in the expected mode of character and function which the corporations
are likely to take and how should be maintained the balance of taxation
between the corporations and the individual firms, or between the big and
the medium or the smaller corporations."

Certainly, the character of corporation tax is complex as compared with
any other tax. The logic of the corporation tax which should be intel-

ligible and penetrating has now fallen into a labyrinth of inconsistencies because of the unfathomable complexity of its nature, proving it a hopelessly intractable patchwork of troubles. The huge amount of controversy and the greater part of argument could have been saved, if the character of corporation tax had been clearly defined beforehand. Also, the time and the energy that were spent in wranling on corporation tax could have been "effectively allocated" in the search for the "optimum allocation of tax burden." Really, it is vital to clarify the nature of corporation tax and thus secure the common basis by which to engage in the discussion on corporation tax. This is indeed the grand major premise of the entire affair.

The existing corporation tax system takes the stand that the incidence of tax payment lies in its final analysis with the stockholders and interpretes the corporation tax as an advance payment of income tax. So, the position of corporation tax in the taxation system should naturally be considered in its relationship to the income tax in general. The effort which is being made to avoid the double taxation, which resorts to the imposition both of corporation and the income tax together, is a typical case showing how the relationship between the two forms of tax often gets comfused.

Suppose corporation tax be shifted to a person other than the stockholder, the corporation tax will then turn to be an indirect tax, losing ite feature as an advance payment of income tax. In other words, the major premise of the corporation tax controversy would be turned over to something else.

In order to bring out distrinctly the nature of the Japanese corporation tax, we have taken up the problem of the differential tax burdens of corporations by size-groups.

As a result of this work, we have been able to perceive the two facts in connection with corporation tax in Japan: 1. The assumption that the corporation is excessively shifted, 2. The existence of differential tax burdens on corporations by size-groups. We feel quite certain that the character and the function of corporation tax will be further clarified, if we should keep on studying the two points mentioned above. We will be happy, if this essay should serve to invite the critical study of corporation tax by the people in various fields.

This work is originally the report "The Shifting of Corporation Tax and an Ideal System of Corporation Tax (Hojinzei Tenka to Hojinzei-sei no Arikata)" presented at the Commission meeting in August 1964, with some additions that were omitted on the occasion on account of the shortage in the allotted time. Especially, Chapter II and III are practically the same

as the original ones with the exception of some portions that have been added afresh.

The author expresses his deep gratitude to the following persons for the useful suggestions and the criticisms they gave on him while he was engaged in the work: Professors Juichi Takagi, Ichiro Ōkuma, Fumimasa Hamada of Keio University.

Needless to say, any mistake, if found in this work, is to be attributed to the author.

I. ECONOMIC GROWTH AND THE TAXATION SYSTEM

A number of studies have been made as to how important a role the tax policy played in the rapid recovery and development of economy in post-war Japan. Very few people, however, seem to disagree with the view that the tax system was largely utilized for the economic growth at an apparent disregard of the principle of equity in taxation by dare applying the "special treatment".[1]

The first point to be considered in connection with the question of economic growth is whether or not a policy is contrary to the equity idea in taxation. The policy which primarily aims at an economic growth is likely to adopt a selective or discriminatory measure according to where the income has come from or how it is used, often in violation of the principle of horizontal equity, in other words, it tends to disregard the rule that the agencies standing on the same positional level be accorded an equal treatment. It will also naturally come to clash with the vertical equity principle based on the adjusting progressive rate and the progressive pattern of taxation. When put in a dilemma like this, the taxation system is often pressed with a vital decision to make as to which of the two important economic considerations be given preference: the promotion of economic growth or the equity in tax. Suppose the economic growth be given the precedence here, it dose not follow that the equity can be dispensed with so much the less regard. It is true that the idea of equity is a socially evaluated judgment, thus not an absolute one. Yet, any policy for economic growth should be set, limiting its conflict with the equity in tax to

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(1) Just looking over the latest and the easily accessible publications mentioned below, we are confirmed on this points:

> Fujita: "Tax policy" in Ryutaro Kamiya, edited by: *Economic Growth of Japan after the War*; Kazuo Higo: "Structure of Taxation" in *An Outline of Japanese Economy, Vol. V, Finance and Money Market*; Takao Takeda: "Economic Growth and Financial Policy" in the *Chair on Economic Policy, 3, Function of Modern Economic Policy*.

the possible minimum.

The second point to be considered in connection with the tax versus economic growth problem is mainly related to private enterprises, for it is in this field that any policy stressing on economic growth exerts a strong influence. The net result of such a policy is repressive in the formation of capital for the private enterprise. Also, the repressive effect differs according to the kinds of tax imposed.

Here the problem is to inquire into the degree of this repressing influence, and find the way how to remove such an influence. This problem can not be answered, unless we have the knowledge how the capital formation level is determined. There are given all sorts of explanations, either theoretical or positive, on the matter. It is ture that a number of investment inducement factors exist as is mentioned in those explanations. And each of these explanations offers and argues for the different inducement effect of a different tax policy, and proposed diverse preferential measures as the "special treatment".

In other words, it is easy, if we should try to set up a tax policy concerning the private capital formation level, we keep our eye just on one of the varieties of investment inducement determinants. But we must be aware that these determinants command a different importance respectively, and they come to be applied in accordance with the weight which the changing economic conditions require.

It is very difficult, therefore, to obtain the optimum combination of a variety of preferential investment treatments. Also, it should be stated here that in spite of a number of tax policies prescribing for all sorts of preferential investment treatments, the theoretical economics at present offers no distinct foundation by which to form the optimum combination of those treatments. It is quite natural that the criticism on preferential investment treatments in Japan is mainly concentrated on the point mentioned above. Thus, seen from the scientific standpoint, the tax as a policy for economic growth is really more complex than the one for economic stabilization. And there is no denying that the complexity of Japanese taxation has come from her having made the economic growth the cardinal objective of her taxation.

Let us consider here an economic model. It is an economic system in which the flow of saving is automatically absorbed into the capital formation process. On the assumption that the amount of capital formation is always automatically adjusted to be in line with the desired saving level, we may expect that the greater the flow of saving, the larger will be the investment and economic growth, and the

lower the rate of interest. Also, since a certain tax reduces savings much, while another tends to curtail consumption largely, the capital formation and the economic growth in the model get heightened by substituting the savings reducing tax with the consumption curtailing tax. Practically put, the substitution of the income tax by the sales tax makes a typical example in this case. In other words, the object of taxation has been shifted from the income to the consumption, having savings relieved of the tax payment. Also, through the reduction of the progressive rate of income tax, and the special treatment of property income, the pressure upon savings by tax tends to be lightened.

Needless to say, these measures run at the same time counter to the equity of tax burden. If we admit the three standards concorning the equity of tax burden: (1) The ability to pay tax shall be measured by income, (2) The incomes from various sources shall be equally treated, (3) The tax rates table shall be progressively arranged to some extent. The substitution of income tax by sales tax is contradictory to standard No. 3; and to accord a preferential treatment to savings and property income as compared with consumption or earned income comes in conflict with Standard No. 1 and No. 2. The savings increase tax measures, considered especially in its short time effect, come at least to fall into such a dilemma as above.

A surplus budget, however, can be set up with the object to elevate the general savings level so as to effect an economic growth, if it keeps off from the restricting frames of tax system and thus avoids its conflict with the equity principle in taxation. This surplus expectant budget accomplishes its end by raising the general taxation level, bringing in an increased revenue (inclusive of natural increase) which will raise the general savings supply level to the extent as it reduces the people's private consumption. This increase of public savings results in the increase not only of the public investment, but of the private investment through the government loan and the redemption of public debt, thereby enhancing the economic growth rate.

The conditions portrayed above look somewhat similar to the situation which Japan had with reference to her economic growth and taxation. More practically put, however, it seems that Japan could not have secured the lasting growth but for the constant maintenance of a high level demand. Besides, there is no doubt that she had consider not only the effects of taxation on the supply of savings, but on the determination what investment be made when such a demand is granted. Especially, the latter must have made an important question, since

Japan is vitally concerned to be precise and definite concerning the financial manoeuvering of the relationship between the determination of investment and the tax system, particularly, the corporation tax system. Also, any tax policy as related to economic growth should give thought not only to the capital formation level, but to its quality, since the technical progress tends more and more to resort to the replacement, and thus the importance of raising the general level of capital formation and the rate of savings diminishes.

The following chapters aim to inquire briefly into the function and the character of the Japanese corporation tax as seen in the views described above.

II. THE PROBLEMS AT ISSUE IN THE JAPANESE CORPORATION INCOME TAX SYSTEM

The best way to find an ideal system of corporation tax in the future is to subject the present one to a scrutinizing, positivistic analysis, and arrive at a synthetic judgment will help in a thoroughgoing, theoretical study for the establishment of a desirable corporation tax system. The partial revison of a tax system often so complicates the matter and causes more trouble than expected that it simply fails to accomplish the end either theoretically or practically. It is useless to launch out on any drastic change in the system of corporation tax, unless we are fully convinced of the efficacy of an intended revision. But here is one thing, which is essential in any attempt to reform the corporation tax. It is the question of shifting. And it is the subject which this essay deals. Let us first present the questions at issue in the corporation tax in general before we go into the specific discussion on shifting.

1. The Theoretical Consistency in Tax System

The Japanese corporation tax system has come to be a very complex one on account of partial revisons often made for the cardinal end of furthering the economic growth, and the introduction of various tentative measures as related to the specical treatments of various other taxes. In other words, this hopeless chaos of Japanese corporation tax seems to be the result of such economic measures taken by the government as the encouragement of savings and investment, the substantiation of internal reserve fund, the modernization of facilities and the promotion of international trade, instead of stressing just one primary object, the alleviation of tax burden. The series of partial revisions as such deprived the corporation tax of its functional autonomy. This

along with the complexity of the corporation tax made it difficult for tax payers to understand it and lowered their interest in tax payment. On the other hand, it become harder for the tax office to execute the equity in tax burden, and the tax collecting efficiency dwindled as it came to require more expenses.

It may be unavoidable for a tax system to be complex, so long as the income tax is made the pivot of the entire system and the economic development is made an inportant target of the national administration. But the simplification of tax system is a requisite condition, so long as the income tax declaration system is resorted to as its practical procedure. To meet even this much of necessity, it is essential for the tax system to restore its theoretical consistency and autonomy as quickly as possible.

2. Equity Concerning the Tax Burden

The imbalance in the allocation of tax burdens among the corporations as classified by size-groups or industries is quite noticeable.[1] As for as the tax system is concerned, we find the cause for this imbalance to lie mainly in the marked and inequitable reduction of taxable income resulted from all kinds of special treatments. The criticism that the formal rate of taxation on corporations is too high comes from the persons who dare keep their eyes shut to this evident erosion of taxable income. But for the tempting erosion of taxable income, the effective tax rate applied to taxable income could have been reduced.[1]

Examining the corporations by size-groups, we find the effective rate of large corporations is rather low as compared with the smaller corporations, for a majority of special treatments are applied rather to the large corporations. We know that this tendency favoring the large corporations has been declining, as such steps like the abolition of some special treatments and the reduction of the tax burdens on smaller corporations has been underway. But there is no doubt that the sense of liability to taxation of many tax payers will be dwindled, and the growth and the improvement in the organization of smaller corporations will be hampered, so long as the differecials in tax burden should continue to exist.[2]

(1) Concerning the tax burdens by the corporation industries, see Seiji Furuta: "An Evaluation of the Corporation Tax Burdens in Japan", *The Mita Gakkai Zasshi*, February Issue: 1964. Concerning the tax burdens by the sizes of enterprise, see Chapter IV of this essay.

(2) On this point, see Yoshio Hayashi: *The Structure of Tax in Post War Japan*, Chapter III, Part 2.

The various special treatments administered according to the corporations as classified by industries also tended to manifest the differentials in tax burden. When a special treatment was accorded to a specific industry, naturally an imbalance in tax burden ensued, and other industries requested the special treatments for them too on the pretext of the epuity in taxation. The situation was something of a vicious circle. But for this evil process, a general reduction of corporation tax and the prevention of various attempts, legal or illegal, to evade taxation could have been effected.

If seen from the equity stanpoint, it is important that the balance among the retained income, the dividend income and other incomes is maintained. The existing taxation system has adopted the tax credit for received divedend method and further applied the special treatment for the light taxation on dividend. This arrangement is clearly in violation of the horizontal equity principle. The question here is that how effectively the intended objective, for example, the substantiation of self-owned capital can be attained even at the expense of the horizontal equity. Incidentally, we may here refer to the so-called "remodelling into corporation" phnomenon, as a subject for study, for the horizontal equity principle, prescribing for the imposition of the same amount of tax on the individuals who stand on the same income level, is a fundamental rule in taxation.

3. An Appraisal of the Economic Function of Tax

The following three are generally admitted as the functions of taxation system: (1) The procurement of fund for the fulfilment of public demands, (2) The effect on the redistribution of income and (3) The effect on the economic stability and growth. The function No. 3, as seen from the macrocosmic standpoint, refers to the economic stabilization policy to be attained through taxation, that is, the taxation works to abjust the effective demand level through built-in stabilizers or tax's increase or decrease. Another effect on economic growth is one which works through the adjusting economic growth rate. To realize the optimun growth rate, the taxation aims at cultivating an adequate saving capacity and securing the investment good enough in maintaing a tendency for the normal and complete utilization of productive capacity.

Seen from the microscopic standpoint too, the taxation policies that are in accord with the economic policies as above should be taken. Especially in Japan, the tax measures of the sort have been largely adopted, that is, all sorts of special treatments that are helpful in realizing such economic aims as described below appeared one after another: the substantiation of self-owned capital gathered through

stockholders, the acceleration of profit reserving, the repletion of de-preciation, the encouragement of technical renovation, the aid of new industries and the promotion of international trade.

It is true that these special treatments played important roles in the attainment of the objects for which they were originally provided, but not a small number of them are rather dubious in practical value. For example, we can not but minimize the value of such special treat-ments as the exemption from tax on the increased capital so as to substatiate the self-owned capital and the tax reduction on dividend, as their merits seem to be mutually offset by such a measure as the separate imposition of tax on the interest income, aiming at the en-couragement of savings.[3] Judged by these cases, it is important that the special treatments provided in the taxation system be subjected to a careful reexamination of their merits and some of them should be dismissed.

The three points mentioned in the preceding paragraph are in a way the concise statments of the basic problems in the taxation system of Japan. Here we may conceive a common question for the three: What is the principal object expectant of the taxation system as a policy? The three functional phases of tax,—the procurement of fund for the fulfilment of public demands, the effect on the redistribution of income and the effect on the economic stability and growth,—make at the same time the major objectives of taxation system, consequently of the corporation tax, as an economic policy. It is essential, therefore, that the corporation tax system should decide which of these three functions be stressed, if not so striclty, as a short or a long term economic policy.

Of course, the objects of corporation tax other than these three should be considered. Putting them all together, we would distinguish the unconditional objects (ones that should be attained at any cost) from the conditional ones that are not so urgent,[4] so that tax system may be relieved of its oft-overtasked objectives, thus it will succeed in getting rid of the conflicts among them and maintain its consistency as a whole. If such a step be taken, the Japanese corporation tax system would be freed from the criticism that any of its reforms is

(3) Ryutaro Komiya: *The Accumulation of Capital and the Taxation System, A Report by the Professional Members of the Little Committes on Basic Problems of the Inquiry Commission on Tax System*, September 1963.

(4) Concerning the relationship between the policy objective and its means, see J. Tinbergen: *Economic Policy, Principles and Design*, 1956. B. Hansen: *The Eco-nomic Theory of Fiscal Policy*, 1958.

derived from the consideration on economic growth, in stead of stressing on the equity in taxation.

The last point to be considered is the relationship between the policy objective and the means for its attainment. Just confined to the corporation tax alone, we should first of all examine which of the possible means is best for the accomplishment of the intended objective and is least likely to bring about ill effects, and thus decide on the scope of its application.

In this case, our consideration is confined to the means within the limits of the corporation tax, and we mentioned before how difficult it is to make choice of them in an actual situation. Also, we must be aware that the applicable policies in the enforcement of a particular corporation tax is quite limited both in number and kind, and the friction with the policies of the fields other than the corporotion tax is unavoidable, no mater whatever a policy is adopted. Thus the final decision on the policy of a corporation tax should be made after a careful study of its efficacy compared with the policies of the fields other than the corporation tax. By the policies of the fields other than the corporation tax are meant here not only those of the different sectors of the taxation system, including the corporation tax itself, but the economic policies of the various fields in the world at large. So, the policy of the corporation tax can either be a substitute or a supplement to an economic policy of an entirely different field.

III. SHIFTING OF THE CORPORATION INCOME TAX—AN APPLICATION OF THE KRZYZANIAK-MUSGRAVE MODEL TO THE JAPANESE ECONOMIC SYSTEM

1. Policy Implications of the Shifting-Analysis

What corporation tax system be introduced or how the present one be modified can not be answered without taking into consideration the issues discussed in the preceding chapter. Especially in Japan, the importance of corporation tax can not be overestimated when we know the fact that not only more than 30 percent of the national revenue is procured by the corporation tax, and it has taken the first place in the ranking of the national tax revenue since 1957, but its rate of of procurement is higher than any other country in the world. The weight which the corporation tax now takes in the study of taxation policy would be rather low, if the gravity of corporation tax in the scheme of tax system were so low as it was in the pre-war time.

In view of the high weight which the corporation tax takes in the

taxation system at present and of the high structural complexity it assumes, it is necessary to look into how the people responded to it, and how it has changed in its influence over the economic activities of men. Especiallay, it is important that we obtain an exact knowledge of the character and function of the corporation tax, and a clear, positively assertained incidences of tax burden, if we should ever desire to contribute in the cause of just redistribution of income so as to establish the security and growth of our economic life. Being microscopically observed, the individual corporate enterprises or industries are directly influenced by the corporation tax in the aspects of their employment, wages, investment, capital procurement, and the price of their produce. Macrocosmically, it affects consumption, savings, investment, etc.

Seen from the standpoint of economic policy, the economic effects of corportion tax, in other words, the shifting and incidence of corporation tax pose as a vital object for our study. In has been generally recognized in the past that the corporation tax can never be shifted. Suppose, however, the possibility of the complete shifting of corporation tax be admitted, should we alter our basic concept of the corporation tax? Here we will briefly survey the policy implications of the tax incidence.

A.   Effects on Income Distribution

The existing system of corporation tax in any country is based on the idea that the corporation tax can never be shifted, and its incidence is carried through the profit of an enterprise, that is, borne by the stockholder. The present Japanese system, taking the stand that the corporation tax is an advance payment of income tax, and its double taxation by the corporation and the income tax should not be permitted, manages the mater by deducting a certain perdentage of a dividend out of its tax liability. This is a sincere attempt to stand by the basic role on the horizontal equity in taxation, that is, no differentials be made according to the sources or the uses of income.

If, however, the view that the corporation tax is shifted, that is, it is not incident on the stockholder, prevail, the situation would be different. Since the corporation tax then imposes the stockholder no burden, it makes no case of double taxation, and the tax deduction on dividend now enjoyed by the stockholder, or any other tax alleviating treatment should lose its ground. This will further lead to the necessity of re-examining the basic point in the system of the corporation and the individual income taxation, as to whether the corporation should be taken as an "impersonal entity" or "separate entity".

Again, the corporation tax would be taken almost the same as the sales tax which is charged on the good and the service by the corporation, if the corporation tax is found being shifted on to the consumers at large. Generally, the corporation tax has been rather popular with the persons who support the cause of the "equitable" redistribution of income and thus favors the corporation tax rate which is progressive with the increasing income level of stockholders in accordance with the principle of the vertical equity in taxation. But the corporation tax can not be classified as a progressive taxation, if it is interpreted the same as the sales tax[1].

B. Effects on Economic Stabilization and Growth

Seen from the policy standpoint, the emphasis of shifting in corporation tax seems lately being transferred from the income distribution view to that of the economic stabilization and growth. The short term corporation tax to attain the economic stabilization objective is usually manipulated on the basis of the non-shifting assumption. Some influence on the investment inducement may be expected to come from the impact on the corporation income and expenditure. Since, however, very littele is likely to come from the direct impact on private consumption, the emphasis of corporation tax policy is put on the secondary effect on the private consumption through the effect on investmeut expenditure. On the other hand, the effect of corporation tax on the disposable income and expenditure through the corporation would be only supplementary, if it is made on the assumption that the burden of corporation tax is shifted forwarded to the consumers[2].

Similarly, as seen from the standpoint of economic growth, the shifted corporation tax as compared with the non-shifted corporation tax may affect consumption largely, but seems to stand very little in the way of economic growth by checking investment[3]. The difference, however, in case of economic growth is that the question of investment distribution in addition to the matter level makes an important factor. When burden of corporation tax is completely shifted in other words, so long as the profit after tax or the rate of return on capital remains the same, the gains for the existing shares per unit will be no less. The availability of external funds will sustain no suffering either, since the condition of internal funds and the liquidity stand as

(1) Seiji Furuta: *Corporation Tax Burden in Japan and Its Evaluation* (1)

(2) Seiji Fuauta: "Various Problems of Corporation Tax Shifting", *The Mita Gakkae Zasshi* (Mita Academic Review)

(3) R. E. Slitor: "The Enigma of Corporate Tax Incidence", *Public Finance: Finance Qubliques*, No. 3-4, 1963, pp. 328-332

firm as ever. More than that the profits on the enterprise before tax, increase and the liquidity improves, while the tax goes through the process of shifting. Gaining solvency and being freed from the urgent pressure for the necessary funds, the business is positively looking forward to enlarging its loan.

Macrocosmically observed, however, the relationship between the corporation tax and the economie growth will be ascertained, only when how a corporation tax running through a long term process of shifting affects the conditions of investment and savings, gets well clarified. It is impossible to draw any conclusion on the effects of corporation tax brought about on economic growth on the foundation deducted from the short run process of shifting.

A new light on the importance of shifting in the corporation tax is emphasized in the United States lately.[4] It tells that the country which largely depends on the corporation tax is placed at an disadvantage in international economic competition, if the corporation tax is completely forwarded to consumers. According to the Gatt (General Agreement on Tariffs and Trade), a special reduction and exemption is granted on the sales tax, the consumption tax, the value added tax and similar indirect taxes for the exporting goods. As compared with the countries where the tax policy is centered around the indirect tax, the country that largely depends on the corporation tax suffers from a strategic handicap. While the exporting goods, that are exempt from the consumption tax and similar other taxes, are taken neither as dumping nor subsidy recipiency, the corporation tax which is in fact an indirect tax is not similarly treated. The situation like this would certainly be a disadvantage for the country like Japan or the United States where the revenue from the corporation tax takes a high percentage in the total of taxation.

Another point to be noted in connection with the shifting of corporation tax from the policy standpoint, is the reversible influence of the reduction in tax. As everybody knows, the Japanese budget makes an estimate on the natural increase of revenue corresponding to the prospective economic growth, and whether the resultant surplus be disposed through an increase in expenditure or be managed by a reduction in tax is usually a controversial point. Further, concerning the tax reduction, that is, which of the two—"the general tax reduction" or "the policy tax reduction"—be applied is often hotly debated. At this stage of tax consideration, the question of shifting is not definitely determined. Suppose, however, that the shifting and the

(4) R. E. Slitor: Ibid. R. A. Musgrave: Ibid.

consequent tax reduction takes place, are we granted to assume that it works quite symmetrical to the degree of increase in tax? For example, in case when the corporation tax increases and its burden is forwarded to the consumers through a raised price, are we permitted to expect that the reduction of the corporation tax will bring the low price, that is, it will reduce a reverse effect as that of the increased corporotion tax?

2. The Measurement of Shifting and Incidence

A. Choice of the Alternative Indicators of Shifting

We have learnt what an important problem the shifting of corporation tax is as a policy, but the study on the shifting and incidence of corporation tax is still in a transitional period, with no definite concepts of them being reached yet either theoretically or positively. The traditional price analysis reports that there can be no such thing as the shifting in corporation tax. And the view that the corporation tax never shifts has been controlling until lately. But with the gradual increase of the corporation tax burden, scholars and businessmen have begun to suspect, if a part or the whole of corporation tax burden is in fact shifted. At present, therefore, the following three views concerning the shifting of corporation tax stand opposed to one another: the shifting of corporation tax can not be conceived either as a long run or as a short run proposition, a part of the corporation tax is shifted, and all of it is shifted.

The statistical analysts on the problem are divided into two: those, having concluded that such a shifting has never occurred, picks up, as its measurement standard, the extent of the corporation profit shares taking place in the total of the corporate value added. Examining the fluctuation of corporation profit shares in the long period over the pre-war and the post-war time in the United States, we find the corporation profit shares before tax remained rather constant in spite of the striking rise in the effective rate of tax, while the corporation profit shares after tax seem to have diminished with the rise in tax rate. The fact indicates the non-shiftihg either to the consumers or to the employess.

On the contrary, just the opposite conclusion has been reached by the shholars who adopted the profit shares taking place in the capital stock of corporation, that is, the rate of return on capital, as the measurement standard. In other words, examining the fluctuations of the rate of return on capital over the long pre-war and the post-war period, we find that rate of return on the capital before tax increased with the increase of the corporation tax burden, but the rate of return

after tax remained constant as a tendency over a long period of time; fact shows that the corporation tax shifting nearly completes itself in a long run.

It is important to note there is no inconsistency between the two approaches above, although they differ in their difinitions of the complete shifting.

Suppose: $P =$ profits before tax, $Y =$ value added, $K =$ capital stock, $T =$ effective rate of corporation tax, we obtain the following identity

$$(1) \qquad (1-t)\frac{P}{Y} \equiv \frac{(1-t)P}{K} \cdot \frac{K}{Y}.$$

P/Y on the left expresses the profit shares before tax; $(1-t)P/K$ on the right, the rate of return on the capital after tax; K/Y, coefficient of captal. Those who contend for the non-shifting on the basis of this indentity, indicates the long period constancy of P/Y on the left, and those who insist on the shifting similarly stress the long period constancy of $(1-t)P/K$ on the right. But according to the equation (1), either constancy seems to be maintained through the offsetting relationship between the noticeable decline of $(1-t)$, that is, the rise of corporation tax, and the consequent conspicuous rise of K/Y (coefficient of capital) on the right. Seeing in this way, we consider it dangerous to take either of the measurement standards, as something absolute and thereby to give a judgment on the extent of corporation tax shifting.

To decide, however, what kind of measurement be adopted in the study of corporation tax shifting is a very important matter. It is necessary, therefore, to go into more detials concerning the relation between the two measurement standards. It is possible to make two interpretations in this case.

One is the assumption that the constancy of the rate of return on the capital after tax is the result of the short run shifting through the rise of price. In this case, the oligopolistic price formation is presupposed. With the increase of profits (P) being added to the value added (Y), the coefficient of capital (K/Y) drops. To hold the profit shares before tax (P/Y) constant, the falling of the capital coefficient should be made equal to the rise of the rate of return (P/K) on the capital before tax. Since, however, the corporation profit takes only a very small percentage of the corporation value added, the falling of capital coefficient owing to the shifting must have been far blow the rise of

the rate of return on the capital before. As the profit shares were constant, the rise of the rate of return on the capital before tax must be taken as owing to some lowered capital coefficients caused by the agencies other than the corporation tax. The lowering causes of the capital coefficients, on the other hand, might have raised the rate of return on the capital before tax. If so, only a part of the fall can be attributed to the corporation tax shifting, as is so in case of the rise of the rate of return on capital. Such being the fact, the ad. justing effect of the shifting should be taken into consideration beforehand, when the rate of return on capital is applied as the measurement standard.

The second interpretation is the assumption that a rise in the rate of return on the capital before tax is the result of a long-run shifting owing to the decrease in investment. According to the Cobb-Douglus Production Function, the diminution of capital formation or the fall of coefficient of capital, exerting no influence on profit shares, enhances the rate of return on the capital before tax. We may infer from the above that the corporation tax as a long run affair is shifted through the rate of interest on the capital before tax only, and the profit shares remain constant regrardless of corporation tax. However, this reasoning seems to work only as a partial explanation for long-run process of shifting, since the capital coefficient tends to diminish through some other factors like the technical innovation.

Thus, no matter which of the above two measurement standards is adopted, the next thing we should attend is to clarify our stand as to whether we are interested to know about a short-run shifting or a long-run shsfting. By the short run shifting here is meant the attempt to have the imposition of a corporation tax operate in such a way as to maintain the tax deducted profit level the same as of the pretaxation level by raising the price or reducing the cost. According to this definition, the corporation tax may be taken the same as the sales tax; it exerts no direct influence on investment, but affects it indirectly through the change which takes place in the total demand level or in the supply of outside savings.

Now, we take up the long-run shifting. The corporation tax, being shifted, first decreases profits and then causes the invesment to dwindle. The decrease of investment happens through the rate of return on capital or the diminution of supply in the internal supply of funds. These definitions of the short-and the long-run shiftings are nothing unusual, as they were made basically according to the consideration whether the capital stock be held constat or not.

But seen from the standpoint of the object of shifting measure, it is by no means impossible to define shifting differently. It seems possible to distinguish the short term effect of taxation which can be ascertained, while maintaining the capital stock constant, from the one whose affected degree by the shifting can be established only on a long-term. The long term effect does not appear in a short term; on the countrary, a short term effect does appear in a long series of effect and can be verified. So, the short term effect is important for the inquiry of a long series of effect. On the othe hand, a short term effect is important just the same even when a long term effect can not be verified or is unimportant. Thus, in the measurement of corporation tax shiftiug,—regardless whether it adopts the profit shares or the rate of return on capital as its standard,—a short term shifting measurement which covers only such a short period as one year, and which does not get affected by the changes in capital stocks, is desirable to be used.

B. Applications of the K-M Model to All Industries.
Manufacturing and Electric Industries
a. Shifting Measures in the K-M Model

It is requisite that the measurement standard of the corporation tax shifting is of such a nature which will fully and properly reveal the effect of taxation and which will exclude the influence of any other factor to the greatest extent possible. Judged by this standard, the positive and analytical measurement by the profit shares or the rate of return on capital can not be called a pertinent one, as the measurement by either of these standards has made no attempt to separate the influence of the rapid rise in the rate of corporation tax ranging over the pre-and-post-war period from the effect of the stormy change which took place in the economic structure of Japan. It is essential, therefore, that we inquire into the way by which we will succeed in separating the effect of the fluctuating corporation tax from the influence of various other factors. To meet this purpose, we here take up the corporation tax shifting analysis by the economertic model contrived by M. Krzyzaniak-R. Musgrave, hereinafter called K-M Model. (M. Krzyzaniak and R. Musgrave: *The Shifting of the Corportion Income Tax—An Empirical Study of Its Short-run Effect upon the Rate of Return*, 1963. The Johns Hopkins press.)

So, far, we have given no clear-cut definitions on "shifting" and "incidence". The reson is that there is much arguing about them that there have been reached no generally approved definitions. But it is necessary, that we have some sort of definitions which will serve for

their analytical study regardless of the prevalence of a number of concepts on them. Here we present the definitions on them by K-M Model. The "shifting" of corporation tax is described as the attempt to collect the corporotion tax burden imposed on the tax payer, and the "incidence" as the positional difference of tax payer according as the corporation tax is laid on him or not. Also, in this connection, K-M Model refers to the "degree of shifting", that is, the degree of escaping from or collecting the "potential burden", (in other words, the burden which is imposed when no adjustment step is taken by the tax-payer). The introduction of the idea "degree of shifting" is, as will be mentioned later, the greatest contribution by the K-M Model.

The next question to be considered concerns the decision as to what standard be adopted to measure the "degree of shifting". Out of the two measurement standards described before,—the profit shares or the rate of return on capital,—the K-M Model adopted the latter. The main reason why the rate of return is preferred is in its incentive effect on the economic growth and in its appropriateness from the standpoint of justice in connection with the problem of "double taxation". This raison d'être of the rate of return approach is certainly the great merit it possesses, commanding our appreciation. Viewed from the technical standpoint, it also has the advantage of easier access to the statistical material as compared with the profit shares. Further, we must know that the rate of return, which the K-M Model has adopted as its standard, serves primarily as the short term shiftng standard based on the adjustment of cost, price, etc., and is not intended for the measurement of a long term shifting effect. It does not follow, however, that this fact nullified the significance of the short term shifting effect in the surmise of its long term effect. This advantage, which a short run shifting plan has, was referred to in the preceding section.

In this rate of return approach, the rate of return is made the subordinate variable, and a corporation tax variable—a pre-determined variable—is provided as an explanatory agency of this subordinate variable, so that a structural estimate of the model by a time series analysis will be made. So, the relationship between the corporation tax variable and the function of the rate of return variable should be established before the structural estimate of the model is made. The K-M Model is divided into two, Model A and Model B, according to the type of the corporation tax variable involved. Since the Model A is considered the principal one, we here take up the corporation tax variable of the Model A only.

According to the definitions of shifting and incidence mentioned before, we first explain the conditions for the 'non-shifting and the complete shifting. Using Y_g for the rate of return before tax, Y_n for the rate of return after tax, Y' for the rate of return with no corporation tax, and Z for the rate of tax, the non-shifting is expressed by $Y_g = Y'$, and complete shifting, by $Y_n = (1 - Z)Y_g = Y'$ respectively. In other words, when the rate of return before tax equals the rate of return on the capital with no corporation tax, the situation is judge as non-shifting case, whereas when the rate of return after tax equals the rate of return on the capital with no corporation tax, it is judged as the complete shifting case.

With the shiftings thus explained, the next thing for us to do is to assume some behavioral patterns by which corporations may shift their tax burdens and look into the possible degrees of their shiftings. It is expressed by the linear equation below:

$$(1) \qquad\qquad Y_g - Y' = a\frac{T}{K}.$$

Where T stands for the amount of corporation. According to this assumption, it is necessary for the corporation to take an adjusting step of raising the rate of return before tax large enough to cover a certain percentage, a, to make up for the reduced rate of return on account of the corporation tax (T/K, tax percentage against capital stock). This assumption is made as the basis of presumed price formation in an oligopolistic market. The equation (1) is reformulated below for further clarification:

$$(2) \qquad\qquad \pi_g - \pi' = aT$$

where π_g stands for the profit before tax and π', for the proft without corporation tax. The equation (2) is the equation (1) multiplied by K. This is an abridged expression of the assumption concerning the corporation's behavioral pattern on shifting, by which it raises its profit to the same percentage "a", as of the imposed corporation tax, regardless of the level of profit or corporation tax. As will be further explained later, this coefficient of the corporation variable plays the important role, as it exhibits the degree of a corporation tax shifting.

   b. Structure of the K-M Model and the Shifting Measures

It is necessary that we become acquainted with the characteristics of the K-M Model before we adopt it in connection with the measurement of the corporation tax shifting in Japan. It is important, how--

ever, that we put emphasis on the hypothetical pattern of model which may be applied to the Japanese case rather than elucidating the whole of K-M Model.

The rate of return approach of the K-M Model is a time series analytic method which makes the rate of return a dependent variable, as was mentioned before, constructs the equations which explain it by the predetermined variables including the corporation tax variable, and executes their structural estimates. With the regression coefficient of the corporation tax variable being determined in this way, the differential in the rate of return between the case when the corporation tax is imposed and that when it is not, can be estimated and thus the degree of shifting is brought out.

The pattern of model is determened according to what kind of rate of return function is hypothetically provided. As the pattern of function, which is capable of predicting the charge in Y_g, that is, the rate of return before tax, there are two models, the single equation model and the simultaneous equation model. The fact that the K-M Model makes it essential that the rate of return should be of a reduced form which concerns Y_g of the general macro economic system having the coraporation tax variable as one of the determinants of Y_g, shows that the K-M Model is based on a hypothesis calling for the complete model of simultaneous equations. So, the test by the equation of reduced form only is conducted here. It is true that the hypothesis of a model makes the core in determining whether or not a tax shifting analysis is appropriate, but this point is discussed in the Appendix of this work, as it is not directly related to the subject under consideration.

The definitions and the notations of Krzyzaniak and Musgrave that are to be used in the following discussion on the rate of return functions are presented below:

$\pi_{g.t}$—gross profits=profit before tax.

$\pi_{n.t}$—net profits=profits after tax.

K_t—capital stock.

$Y_{g.t}$—gross rate of return—$Y_{g.t}=\pi_{g.t}/K_{t-1}$

$Y_{n.t}$—ner rate of return—$Y_{n.t}=\pi_{n.t}/K_{t-1}$

Y'—estimate of Y when no corporation tax is imposed.

X_t—general notation of corporation tax variable.

T_t—liabilities of corporation tax.

L_t—ratio of corporation tax to capital—$L_t=T_t/K_{t-1}$

C_t—ratio of consumption to GNP.

V_t—ratio of inventory to sales in manufacturing.

J_t—ratio of all the tax incomes minus the government transfers,

excepting the corporation tax, to GNP.

G_t—purchase ratio of government goods and services to GNP.

U_t—stochastic variable.

S—shifting measure.

Z_t—statutory tax rate.

Z_t^*—effective tax rate—$Z_t^* = T_t/\pi_{g.t}$.

To decide on the pattern of Y_g, the function of the rate of return, it is essential that the predetermined variables are introduced. The variables should be of such a nature that will rightly explane Y_g, and are related to Y_g in a high degree, but are not related of each other. Considering, however, that the usable statistical material is limited in quantity, the number of predetermined variables taken into equations are quite restricted. The K-M Model has obtained the following formula as a result of an experimental test:

$$(1) \qquad Y_{g.t} = a_0 + a_1 \Delta C_{t-1} + a_2 V_{t-1} + a_3 J_t$$
$$+ a_4 X_t + a_5 G_t + a_6 X_{t-1} + U_t \; .$$

Where ΔC stands for the amount of increase in consumption to GNP, V for the ratio of inventory to the sales of the whole manufacturing, J for the tax variable previously defined in relation to all the texes excepting the corporation tax, X for the corporation tax variable, (X will be specified by the later equation), G for the purchase ratio of government goods and services to GNP. Some lagged variables are used for the improvement of model's fit.

The equation (1) is the general expression of the linear equation containing the corporation tax variable. Next, this equation should be specified by the hypothetical behavior of enterprise assumed to be taken as a result of the imposition of corporation tax. In this case, the corporation tax variable is expressed by T, the amount of corporation tax. $T = Z\pi_g$. Formulized like this, the variable gets endogenized, losing its independence, and the equation fails to be a complete reduced form. But it is quite certain that the use of this form of variable intensifies the behavioral pattern of enterprise concerning shifting as was mentioned in the preceding section, in other words, the enterprises endeavor to recover from the imposed tax burden. In the next model, the transformation of variable is made by dividing the variable T by K_{t-1}, the capital stock, that is, T/K_{t-1}.

$$(1A) \qquad Y_{g.t} = a_0 + a_1 C_{t-1} + a_2 V_{t-1} + a_3 J_t + a_4 L_t \, a_5 G_t + a_6 L_{t-1} + U_t$$

This equation is called Model A. The predetermined variables on the

right with the exception of L_{t-1} are all the same as of the equation (1). L_{t-1} is apt to produce an inconsistency, if applied with the least squares method. So, the K-M Model has adopted the instrumental variable approach to obtain a concurrent estimate. This technical arrangement, however, is open for controversy.

Now that the Modle A has enabled us to estimate the regression coefficients of the corporation tax variable, the next thing for us to do is to clarify the question: how can we identify this recurrent coefficient workable as the yardstick for the measurement of shifting? According to the K-M Model, which uses the before tax rate of return as the shifting measure, the non-shifting and the complete shifting are defined as $Y_{g.t} = Y'$, and $Y_{g.t} = Z_t^* Y_{g.t}$, respectively. These, as they are, however, are not capable of measuring the degrees of shifting other than the non-shifting and the complete shifting. Some sort of devise is required, and that the devise should be one which defines the degree of shifting monistically. But it is possible to conceive the shifting measure variously on the basis of the existing theorise for it. The K-M Model expresses it as follows:

$$(2) \qquad S_t = \frac{Y_{g.t} - Y'}{Z_t^* Y_{g.t}}$$

S_t, derived from the previously defined notion on shifting, indicates the degree of shifting. Its theoretical significance is that it attempts to measure the ratio between the amount of corporation tax paid and the gross profits obtained as a result of the raised gross rate of return, in other words, it exhibits the percentage of the actually recovered amount out of the loss suffered on account of the imposed corporation tax.

The merit of S_t consists in its concurrence with the traditional theory on shifting, which divides the corporation tax into two parts: one sustained by the consumer and the other by the enterpriser. It is possible then to inquire into the question how to integrate the corporation tax and the individual income tax on the basis of this yardstick and under the premise that the corporation tax is possible to be shifting.

So, this shifting measure, S_t, is introduced into Model A as follows. With the non-time-lag assumption for the corporation variable, Y' is estimated by the equation (1A) with $L_t = 0$. In other words, while holding the other variables in a year separate from the corporation tax variable, and assuming the rate of corporation tax to be zero, the

value of the rate of return in that particular year is estimated.

So, $Y_{g.t} - Y't = a_4 L_t$ and the measure, $S_{g.t}$, defined by the equation
(2) are rewritten as follows: Derived from $Lt = T/K_{t-1} = Z_t^* Y_{g.t}$

(3) $$S_{g.t} = \frac{Y_{g.t} - Y'}{L_t}$$

Futher,

(4) $S_{g.t} = a_4$

In other words, the shifting measure, S, concurs with the regres-
sion coefficient.   The shifting measure is constant over time.   Besides,
the relationship involved in the shifting measurs is the same as the
one involved in the corporation tax variable.   Thus the shifting measure,
S, is independent both of the corporation tax level and the rate of
return.

<div style="text-align:center">

c.   Application of the K-M Model (2)—Whole
Industry and Manufacturing Industry

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In the last section, an outline of the K-M Model was presented so
as to help understand the aim and scope of the Japanese corporation
tax shifting measure.   In this section is described how the Model is
applied to the whole industry and the manufacturing industry of
Japan.

In the K-M Model are set more than 20 variants corresponding to
the numbers of samples and the periods of samples.   Concerning the
per-war period from 1935 to 1942 as well as the post-war period from
1948 to 1959, and the total capital stock (comprising both the equity
and the debt financed capital), it takes up the whole industry as its
study object.   Expressed by equation:

(1) $Y_{g.t} = a_0 + a_1 \Delta C_{t-1} + a_2 V_{t-1} + a_3 J_t + a_4 L_t + U$

The variables are of the same definitions as prescribed in the pre-
ceding section.   In the estimation of the corporation tax shifting in
Japan, this equation has been made the technical basis for the research.
With, however, no dependable statistical material for the pre-war
period, the study has been confined to the 1952-1962 range.   As to
the objects of analysis also, the Japanese work has limited to the
three items: the whole industry, the manufacturing industry, and the
electrical industry, in contrast to the classification of the K-M Model
by the whole manufacturing industry and the industries, in other
words, by the size-group and the specifications of industry.   Further,
it carried the analysis by the equity capital, instead of by the total

capital fund. So, the following discussion does not preceed in an exact parallel to the design of K-M Model. The discrepany between the two models calls for our further study.

The structural equations on the corporation tax shifting of Japan, obtained as a result of the structural estimates on the basis of the equation (1), have been put together in Table III-1. Compared with the shifting estimates of the United States, ours prove much higher than theirs which strikes us as surprisingly high. It has been found in that country that the corporation tax is shifted extent at least

TABLE III-1: ESTIMATE OF THE CORPORATION TAX SHIFTING IN JAPAN

(least squares estimates; sample period = 1952-1962; annual
unit = ¥ 100,000,000; figure in parenthesis under regression
coefficient = standard error)

(I) Equity Captal Base:

All industries (Mitsubishi Material)

(1) $Y_{g.t} = 0.086951 - 0.155515\Delta C_{t-1} - 0.231514 V_{t-1} - 0.412503 J_t +$
(0.029023)(0.132612)   (0.187064)   (0.473104)
$2.562413 L_t$
(0.169702) $R = 0.991936$

All manufacturing (Mitsubishi Material)

(2) $Y_{g.t} = 0.209851 - 0.135827\Delta C_{t-1} - 0.254526 V_{t-1} - 1.45612 J_t +$
(0.060989)(0.394339)   (0.250050)   (1.514690)
$2.626809 L_t$
(0.195354) $R = 0.993436$

All industries (Finance Ministry Material)

(3) $Y_{g.t} = 0.206949 - 0.067583\Delta C_{t-1} - 1.047376 V_{t-1} - 0.905226 J_t +$
(0.043831)(0.368178)   (0.677859)   (1.165169)
$2.248740 L_t$
(0.249889) $R = 0.967791$

All manufactring (Finance Ministry Material)

(4) $Y_{g.t} = 0.356591 + 0.800681\Delta C_{t-1} - 0.817655 V_{t-1} - 2.654454 J_t +$
(0.061740)(0.661447)   (0.732669)   (2.729343)
$2.475518 L_t$
(0.404958) $R = 0.952485$

All industries (Metsubishi Material)

(5) $Y_{g.t} = 0.072730 - 0.257274\Delta C_{t-1} - 0.338689 V_{t-1} + 2.484249 L_t$
(0.029023)(0.061880)   (0.138572)   (0.141602)
$R = 0.990909$

TABLE III-1: (continued)

All manufacturing (Mitsubishi Material)

(6) $Y_{g.t} = 0.147746 - 0.496978 \Delta C_{t-1} - 0.462053 V_{t-1} + 2.483593 L_t$
  (0.060989)(0.119288)   (0.125525)   (0.125693)

$R = 0.992421$

All industries (Finance Ministry material)

(7) $Y_{g.t} = 0.156231 - 0.288329 \Delta C_{t-1} - 1.295378 V_{t-1} + 2.234262 L_t$
  (0.043831)(0.227415)   (0.580811)   (0.242034)

$R = 0.964491$

All manufacturing (Finance Ministry material)

(8) $Y_{g.t} = 0.222334 + 0.303970 \Delta C_{t-1} - 1.354603 V_{t-1} + 2.347514 L_t$
  (0.061740)(0.418696)   (0.479791)   (0.381490)

$R = 0.944777$

Electrical industry

(9) $Y_{g.t} = 0.026983 + 0.128053 \Delta C_{t-1} - 0.022655 V_{t-1} - 0.218372 J_t +$
  (0.024491)(0.142636)   (0.082707)   (0.524795)
  $2.045257 L_t$
  (0.203157) $R = 0.988732$

Electrical industry

(10) $Y_{g.t} = 0.007594 + 0.076678 \Delta C_{t-1} - 0.035147 V_{t-1} + 2.098074 L_t$
  (0.024491)(0.067076)   (0.072372)   (0.148963)

$R = 0.988405$

(II) Total Capital Base:

All industries (Mitubishi Material)

(11) $Y_{g.t} = 0.065399 - 0.066290 \Delta C_{t-1} - 0.104338 V_{t-1} - 0.367738 J_t +$
  (0.018653)(0.147394)   (0.081697)   (0.556604)
  $2.575095 L_t$
  (0.227028) $R = 0.990810$

All manufacturing (Mitsubishi Material)

(12) $Y_{g.t} = 0.047686 - 0.159668 \Delta C_{t-1} - 0.148426 V_{t-1} + 2.459428 L_t$
  (0.018653)(0.040101)   (0.045195)   (0.138601)

$R = 0.990138$

All industries (Finance Ministry Material)

(13) $Y_{g.t} = 0.125177 + 0.269131 \Delta C_{t-1} - 0.219866 V_{t-1} - 1.121041 J_t +$
  (0.019341)(0.204349)   (0.225298)   (0.885799)
  $2.763050 L_t$
  (0.453997) $R = 0.953730$

TABLE III-1: (continued)

All manufacturing (Finance Ministry Material)

(14) $Y_{g.t} = 0.067238 + 0.070265\Delta C_{t-1} - 0.431348 V_{t-1} + 2.513897 L_t$
       (0.019341)(0.136139)   (0.157474)   (0.426310)
                              $R = 0.940994$

Source: *The White Paper on National Income, An Analysis of the Business Results in Japan*, briefly called Mitsubishi Material. *The Statistical Annual Report on Corporation Business*, briefly called Finance Ministry Material. *Report on Electrical Business by 9 Electric Companies*.

of 100 and at the most of 123 per cent, completely crashing the traditional idea of the non-shifting in corporation tax, and replacing it with the argument "100 per cent shifting of corporation tax".

Apart from the identification by a statistical assumption, there are three bases to support the 100 per cent shifting argument: 1. In view of the fact the non-shifting contention is not necessarily a positive establishment, there is ample reason for the admisson of the minimum 100 per cent shifting; 2. An elevation of the corporation tax at the oligopolistic market is taken as the "signal" for the raise of price. The resulted high price often causes the shifting to soar beyond the 100 per cent level, as there are involved the factors other than the corporation tax. In other words, being operated on rather strongly by the factors other than the impact of the corporation tax, an extra-adjustment is often incited about; 3. Being too eager to effect the complete shifting of corporation tax burden, the enterprisers, on their part, except the "over-shifting" to happen. These three points,—explaining the underlying price formation principle by enterprisers' behavior,—if put concisely, may be taken as the full cost principle working in an incompletely competitive market.

The second affair to be considered by way of explanation for the cause of extra-shifting is inflation. With the coming of an inflation, profit is overvaluated out of proportion to capital, resulting in the overevaluation of Y_g and consequently in an exggerated estimation of corporation tax shifting. Looking over the situation in the United States, we find the degree of shifting amounting to 123 per cent when an inflation is unadjusted, but it is only 100 per cent after an inflation is taken care of. (Table III-2, Case 7) With the removal of the cause for an inflation, the degree of shifting drops markedly.

The approach, which uses the rate of return as the measurement standard, starts its search for the ascertaiment of the shifting degree as an instrument in the adjustment of an inflation, with the asumption that the rise in tax occurs simultaneously with the increase of

TABLE III-2: STRUCTURAL ESTIMATED STANDARD MODEL OF THE MANUFACTURING
INDUSTRY IN THE UNITED STATES. 1935-42, 1948-59

No.	Description	No. of obser-vation	ao	Regression Coefficients, ( ) is t test				Instru-ment	R ad-justed	Durbin-Watson test	Degree of Shit-ing R,( ) is stand-ard er-ror
				Variable							
				ΔC_{t-1}	V_{t-1}	J_t	L_t				
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1.	Total capital base, pre-war, post-war	20	.2859	.4038 (2.6690)	.5272 (−3.0043)	−.8333 (4.7168)	1.3394 (12.2165)	zt	.9765	2.7557	1.3394 (.1096)
2.	No. (1) post-war	12	.2698	.1593 (.5962)	−.1044 (−2.5281)	−1.1223 (−3.1541)	1.2050 (4.3398)	zt	.9191	2.1761	1.2050 (.2777)
3.	Equity base, pre-war, post-war	20	.4234	.3431 (1.8180)	−.9429 (−4.2971)	1.1778 (−5.3266)	1.2331 (10.4348)	zt	.9745	2.4285	1.2331 (.1184)
4.	No. (3) post-war	12	.4742	.6934 (.1923)	−1.1113 (−1.9692)	1.2206 (−2.5209)	1.0783 (2.9213)	zt	.9048	2.2783	1.0783 (.3691)
5.	Equity base, dpr. return-ed to profits all years	20	.2707	.6705 (3.9037)	−.4521 (−2.3027)	−.5409 (−2.6749)	1.4644 (14.3727)	zt	.9803	2.3368	1.4644 (.1019)
6.	No. (5) post-war	12	.2122	.6161 (2.5936)	.0704 (.1910)	−.6233 (−1.9426)	1.2688 (6.8367)	zt	.9270	2.1350	1.2688 (.1856)
7.	Equity base, correct for inflation, all years	20	.2507	.0743 (.4062)	−.4848 (−2.1430)	−.6119 (−2.9182)	1.0050 (8.0746)	zt	.9580	1.9603	1.0050 (.1245)
8.	No. (7) post-war	12	.2111	−.2014 (−.6378)	.1869 (.3259)	−.9737 (−2.2400)	.7848 (2.0120)	zt	.8347	1.9770	.7878 (.3901)
9.	Risk rate, equity base, all years	20	.2627	.6138 (2.7413)	−.4836 (1.8574)	−.9416 (3.5892)	1.4154 (10.0955)	zt	.9652	2.1966	1.4154 (.1402)
10.	No. (9) post war	12	.2129	.1799 (.4679)	.5668 (.9418)	−1.5894 (−3.0779)	1.1243 (2.8562)	zt	.8730	2.0650	1.1243 (.3936)

cost as a result of the renewal of the assets required to cope with an inflation. The two cases can be conceived in this connection. One is the case where the renewed cost increase has made no influence on the price of produce, and the other is the case where price and profit have marked up by the nominal margin to cover the substantial depreciation of redemption fund. The first case, that is, the shifting measure derived from the time serial material as related to an unadjusted inflation is correct. For the measure based on the material related to an unadjusted inflation does not comprise the influence from the renewed cost, and undervalues the substantial shifting which corresponds to the effect of change in tax rate only. The second case, howere, overestimates the degree of shifting through its unadjusted measure, especially when an enterprise is in fact little affected by a raised tax rate because of its quick response to the asset cost arranged to cope with an inflation. So, the shifting measure based on an adjusted material succeeds in properly grasping the effect of tax rate alone. In any event, applied with the shifting measure based on an adjusted material, the tax shifting is bound to be represented in a lowered degree.

The third point to be mentioned is the degree of shifting possibly raised because of the "expenditure effect". Taking the United States, we find the multiple coefficient, R, is lowered as a natural consequence of dropping G—the purchase of the government goods and services—from among the predetermined variables, and the significance of the recurrent coefficients of all the other variables is heightened. Especially, the value of L_t is elevated, bespeaking the existence of multicollinearity with G_t and L_t. The fact that the shifting coefficient of G_t is risen means that in the shifting measure is involved not only the "corporation tax incidence" but the "budget incidence". With an increase in the levy of corporation tax, the public expenditure increases. If the ensuing increase in the total demand tends to increase the demand for the products of corporations, it will heighten Y_g and relieve Y_n of the pressure from the corporation tax, which will result in an enlargement of the degree in the shitfing of corporation tax. Y_g, the shifting measure standard, usually fluctuates according not only to the corporation tax shifting responding to the administrative price adjustment, but to the changes in the general expenditure of the government. We all know that an increase in the government expenditure enlarges the degree in shifting, but it is impossible to eliminate its effect from a model. So, it is necessary to assume that the net corporation tax shifting is somewhat smaller than the degree actually

derived. So, in order to find the net degree of shifting, the obtained degree of shifting should be somewhat reduced, if considered from the standpoint of the corporation tax policy proper.

Now, we turn back to Table III-1. The equations (1)-(4) in the Table are the structural estimates on the basis of the previously prescribed regression equation (1). The Equation (1) and (2) mainly depended on the statistical material in the Mitsubishi Economic Study Institute, edited by: *An Analysis of the Bisiness Results in Japan* (briefly called *Mitsubishi Material* hereinafter), and the Equations (3) and (4), on the Ministry of Finance: *The Statistical Annual Report on Corporation Business* (briefly called *Finance Ministry Material* hereinafter). Looking at the shifting degrees of whole industry, we find 256% with Equation (1) and 225% with Equation (3), the values exhibiting the high degree of extra-shifting. Concerning the manufacturing industry, Equation (2) shows 263%, and Equation (3), 248%, indicating the extra-shifting over that in case of whole industry. Examining R's, the multiple correlations, we find the Mitsubishi Material showing 0.99 and the Finance Ministry Material, 0.96 and 0.95 respectively, rather high. But the estimated correlations of the predeterminad variables in the recurrent equations (1)-(4) can not be called significant with the exception of L_t. Especially, in point of interpretation here is the problem: With the exception of Equation (4), the regression coefficient of each equation ΔC_{t-1} is negative. However, the estimated correlation of every equation is in the minimum.

The equations from (5) to (8) inclusive in the Table are the structural estimates made with the omission of J_t. As a result of the omission of J_t, the estimated correlations of all the variables have turned significant with the exception of ΔC_{t-1}'s of equation (7) and equation (8); naturally R's have been lowered. As to the shifting degree of whole industry, the Mitsubishi Material reveals 248% and the Finance Ministry, 223%, while concerning the shifting degree of manufacturing industry, the former presents 248% and the latter 235%, showing 2 or 15% lowering as compared with when J_t was not omitted.

Judging from the above interpretation of the obtained 8 structural estimates, we may tentatively conclude that the degree of the short-run corporation tax shifting in post-war Japan was carried to the extent with the upper limit of 256% and the lower limit of 223% for whole industry, and with the upper limit of 263% and the lower limit of 235% for manufacturing industry. Of course, besides the corporation tax shifting, various factors may have worked

to bring about the above figures, and thus it is necessary to give thought to their influence and take those figures at a discount, as was made in the United States where the influence of inflation and the expenditure effect were taken into account. Especially, this discount should be made at a larger percentage in Japan as the inflation during the period under consideration was worse than in the United States. But we remind you that we have made no structural estimates of an inflation adjusted model.

d. Application of the K-M Model (2)-Electric Industry

In addition to the structural estimates of several variants, the K-M Model has made the structural estimates according to different industries, sizegroups, price-leaders and followers, and different types of corporation (for example, G. M., U. S. Steel and other corporations). In analyzing the corporation tax shifting of Japan, it is desirable to adopt the similar study itemization as above. But here we have taken up electrical industry only, especially as an object of the regression analysis of corporation tax shifting. The reasons why the electrical industry has been chosen are as follows:

The traditional theory on tax shifting tells that no corporation tax, any part of it, is shifted either in the competitive or the monopolistic enterprise. According to this theory, the net profit is not shifted, for it makes no expense factor and thus exercises no influence on supply. In case of competitive enterprise, the problem of shifting hinges entirely on the issue how the marginal enterprise functions in the process of price formation. Briefly put, the traditional theory on the non-shifting of profit tax runs as follows: (a) price is determined by the marginal enterprise, that is, the enterprise which makes no profit; (b) the marginal enterprise pays no corporation tax since it is getting no profit; (c) so, the profit tax has nothing to do with the determination of price by the maginal enterprise; (d) since profit is the surplus standing beyond the marginal production cost which determines price, any other enterprise than the marginal one which produces this surplus can not raise price on account of profit tax. In case of monopoly enterprise either, no shifting of profit tax is conceivable, so long as the behavioral principle is observed that price or the amount of supply is determined through the equilibrium between the marginal expense, so as to secure the maximum profit.

As everybody knows, this theory has been criticised from all sorts of angles. Suppose, however, we admit this theory, the enterprise which can manage profit, which should be taken for economic surplus, as an expense factor,—concerning the profit tax (corporation income

tax) imposed on the enterprise of this sort, there emerged the possibility for shifting. As seen in this way, especially the profit tax on the public utilities which includes the expense factor in the determination of price is considered on exception to the non-shifting theorem of corporation tax. For example, the public utility like the electrical business had been applied with the ordinance on public utilities, and its standard of charge was set according to the original costs, inclusive of the corporation and other taxes. So long, therefore, as the electrical industry is concerned, there still remains ample possibility for corporation tax shifting.

The electrical fees are set in accordance with the Electrical Charge Computation Standard. Examining the outline of the Computation method, we find at the outset the provisions on the general original costs including the "expenses for the depreciation of electrical business equipment, operating expenses, various taxes and all the other payments for business".[5]

These are applied to fix the rates of charge for all sorts of electric services. It is important to note here that the corporation tax is woven into the general original costs for the reason that otherwise the "tax deducted legitimate profit" could not be secured. In other words, the "principle of just reward" is put in effect. Also, it is ruled that the general original costs be in perfect accord with the amount of income calculated on the basis of the prescribed rates, that is, we should be aware that the determination of price in electrical business is managed in an entirely different way as of any other incorporated enterprise.

The equations (9) and (10) in Table III-1 are the structural estimates of the same regression equation as presented in the preceding section, in accordance with the above descibed rule. The only difference between (9) and (10) is in whether or not they include J_t . Examining the equation (9), we find R rather high next to the case of Mitsubishi Material, and the regression estimate of each predetermined variable can not be called significant except L_t. Concerning the equation (10), which dropped J_t, we recognize nearly the same. Looking forward to the future improvement in the shifting measure by the regression analysis of the electric industry, *we may say that 204 or 209 per cent of the corporation tax burden is shifted in electrical industry.*

(5) The Research Room of the Inquiry Commission on Electrical Business, the Electrical Power Central Research Institute: *Explanation of the Electrical Charge Calculation Standard*, Ordinance No. 3, The Ministry of International Trade and Industry, (Reference material: No. 55), February, 1964, p. 9

Accepting thic conclusion and comparing it with the result obtained in the preceding section, we recognize it run counter to the traditional inference of the matter in two ways. The traditional inference reasons that the degree of shifting in corporation tax theoretically should be 100 per cent, since the shifting of the corporation tax burden is guaranteed by law in electrical industry. the results of the regression analysis shows it likely twice as much. On the contrary, the degree of shifting in clectrical industry is generally considered to be lower than that of the whole industry or the manufacturing industry, the public price of which products are not officially controlled. The traditional tax shifting theorizers, however, assumed that the degree of of shifting in electrical industry is high as compared with other industries; never it could be lower. It is clear that neither of the above assumptions is in agreement with the traditional theorizing on tax shifting. It is necessary, therefore, that the theories on shifting be reexamined on one hahd, and the positive analysis be further pursued on the other, so that the gap between the traditionally admitted assumption and the positively ascertained outcome will be filled in.

Looking back on the analysis we have come through, we find ourselves tasked with too many economic problems awaiting our attention, for example, the examination of the economic theories taken for granted at the time when the K-M Model was constructed, the scrutiny of statistical material, presumptions, and approvals adopted. It is quite natural, however, that we are placed in such a state of confusion, when we come to think that the analysis in this phase of tax shifting has been left entirely unexplored.

The K-M Model is a pioneer devise on the econometric analysis of the corporation tax shifting. There is no question that with this as a clue, either approving or disapproving, there will follow similar designs. As seen in the present state of science, there is no denying that the analytical result offered by the K-M Model will contribute much for the reexamination of the existing corporation tax system. The author of the K-M Model concludes his work with the following words: "There is substantial evidence for a high degree of short-run shifting. and the policy implications thereof should be faced."

The following four points shoul be considered, if we should give credit at all to the American hypothesis "the minimun 100 per cent shifting", and its Japanese corollary "the minimum 200 per cent shifttin" as related to the industries of the United States and Japan.

The first is the effect of the reduction in corporation tax. If the assumption that the decrease and the increase of tax work in an

entirely opposite direction be admitted, the decrease will lower the price of goods or will raise the wages. But so far, no evidence has come out concerning the reversible reaction of the increase and the decrease in tax. On the contrary, the evidence for the irreversibility of reaction has been shown in the estimates by the K-M Model. It has been found that the short-run shifting of an inscreased tax proved 170%, whereas that of a decreased tax was only 7% in the United States. It seems that a large probability for irreversibility is likely the case with Japan, although we have made no special attempt to obtain the structural estimates. With this extremely tentave assumption granted, we seem to be justified at least to say that the decrease of corporation tax heightens the profitableness of an enterprise at least in short term, and works to stimulate the process of capital formation. The benefit of tax decrease mainly reflects on profit, not on consumption, wages and salaries.

The second point to be considered is the relationship between the establishment of the corporation tax system as a long term stabilization and the economic prospect. The "200% shifting hypothesis can not be conceived as separate from the time in which the measurement was made, that is, the period in which Japan actually attained a high economic growth. Of course, the numerical expression,—the 200% shifting,—should be taken at a discount for the reasons mentioned before. We must be aware that the condintion which enabled Japan to realize an extra-shifting of corporation tax burden was her remarkable accomplishment of high rate of economic growth as compared with other countries including the United States. So, it is by no means an exaggeration, if one should observe whether or not Japan can maintain the extra-shifting of corporation tax in the future would depend on how she will endeavor for the further development of her economic life. Thus it is highly desirable to establish a well studied relationship between the long term economic prospect and the possibility of tax shifting, if a sound long term corporation tax system is to be secured.

In the third place, that the rate of return is preferred for the measurement standard means the dismissal of the existing concept on shifting. According to the traditional shifting theory, the tax burden is taken as completely shifted as in the case of an ad-valorem duty, if the price of the taxed good per unit is raised after the imposition of tax by exactly the same amount of the tax. Since, however, the profit tax is a corporation tax, it should not be treated in the same terms as the an ad-valorem duty. So, it is vital that both the profit

tax and the ad-valorem duty be restored to a common yardstick, if they are to be compared on the same basis.

In the last place, it should be mentioned that the positive analysis of the corporation tax shifting is just in its incipiency, and that the theory on shifting itself even is an entirely unexplored field as far as the corporation tax is concerned. There too many things which should be clarified on shifting, but which have been given no light so far with reference to its process either as a complete or an extra shifting case.

Especially from the policy standpoint, in other words, in order to make the corporation taxation one of the powerful agencies in the administration of nationnl finances, it is essential that we are well provided with the two weapons for the analytical study of economics: the theories on shifting and the tools for the analytical observation of shifting. Just as it is important to obtain the optimum combination of capital and labor for the exploration of an underdeveloped region of economy, it is indispensable to have an effective cooperation of the positive analysis and the theoretical analysis on shifting.

e. Application of the K-M Model (3)-A Modification of the Model with the Rate of Return on the Gross Capital as a Shifting Measure

The discussion on the measurement of corporation tax shifting in the preceding section adopted the rate of return on the equity capital as the measuring standard. Theoretically considered, however, the rate of return on the gross capitall seems to be better fit for the purpose. By the rate of return on the equity capital here is meant the rate of profit to the equity capital, and by the rate of return on the gross capital, the rate of profit plus interest to the gross capital.

Seen from a certain angle, the corporation tax has been imposed on profit only, since interest, being taken as a cost, was dropped as a traget for taxation. This preference of the rate of return on the equity capital as the shifting measure seems to show the degree of corporation tax shifting more exactly than by the rate of return on the gross capital. Also, the analytical discussion presented in the preceding sections has been made on the basis of the assumed principle of economics, the maximization of the rate of return on the equity capital[6]. As is often made the subject of criticism, the different treatments of dividend and interest in the administration of corporation tax naturally encourages the procurement of capital by loan rather than by the issue of shares, for the former "costs" an enter-

(6) F. A. & V. O. Lutz: *The Theory of Investment of the Firm*, 1951, pp. 16-43

prise less than by the latter in the "collection of capital". The result
is the rise in the rate of gross return on the equity capital, keeping
the rate of net return on capital unchanged.

In this case, according to our approach which aims at the analysis
of the short-run shifting, the degree of shifting measured by the
rate of return on the gross capital will be greater than by the rate
of return on the equity capital without exercising any influence in the
formation of capital while the shifting is in process. Being judged
by the relationship between the two rates of return, this inference is
quite clear. But this rise in the rate of return on equity capital as
the shifting measure, as compared with the rate of return on the
gross capital is different from the one effected through a raise in the
sales price or the lowering in the price of factors. Further, it is to
be reminded that this rise in the rate of return of equity capital,
which is in fact bound to be reduced through corporation tax and
thus to meet a risk, when handed over to stockholders as per unit
reward. In this way, as seen from the standpoint of stockholders
who are the ultimate owners of a corporation, the increase in the rate
of retrurn and the increase of risk are most likely offset. The value
of rate of return on the gross capital to be used as the standard to
measure shifting hinges on how it will succeed in the management of
the troubles which hang on the rate of return on the equity capital.

Admitting the merits of the gross capital rate of return approach
as above, we have worked the structural estimates in the same regres-
sion equations, using the rate of return on gross capital as the mea-
surement standard; see the equations from (11) to (14) in Table 1.
As compared with the case of the equaty capital, the mutiple coef-
ficients have exhibited a slight diminution, but examining the standard
errors, we find them somewhat improved.

Now, taking up the matter of shifting degree, we find the whole
industry ranging from 258% to 276%, higher than the case of the
equity capital base, and the manufacturing industry ranging from
246% to 251%, lower than the case of the equity capital base. But
the differentials of the shiftings that have been measured respectively
on the gross capital and the equity capital base are neither very con-
spicuous. This, however, does not deny the conclusion held in the
last section that corporation tax shifting is being made to the extent
much greater than is generally considered; it rather supports it.
The fact that these result differentials in shifting, though to a small
extent, according as the gross capital base or the equity capital base
is applied, is in agreement with the assumption that the corporation

tax helps partly the procurement of the loaned capital.

The index of the differentials in shifting degree does not necessarily coincide with the extent of the corporation tax making towards the procurement of the loaned capital. For the K-M Model is not planned for the purpose of directly effecting a shifting peculiarly of the corporation tax in the process of capital formation. So far, no successful attempt has been made to ascertain the actual extent of shifting a high rate corporation tax would bring about in the course of capital formation, in spite of the theoretical clamorous discussion on this point.

As a subject of positive inquiry, it may be possible to make a correlation analysis of the ratio between the amount of the newly marketed stocks and that of the newly loaned fund in the pre-war time when the rate of corporation tax was low, as compared with the similar ratio in the post-war time when the rate of corporation tax was high, but we can hardly expect much of such an analysis as a basis for an actual prediction. Really, it is important that we make special study on the corporation tax as related to capital formation and business finance.

But the tax deducted profit of an enterprise would not be reduced, if the corporatioh tax burden is completely shifted through the raise of its sales price or the lowering of the factor price. Further, the amount and the liquidity of the internal found would be increased, never be decreased, when an extra-shifting is effected. Also, the availalability of the external fund would be heightened; and the return on the existing stocks per unit would risen through the increase of the tax-deducted profit. At the same time, such will happen with the strengthening, not weakening, in the liquidity of enterprise as well as with a bright prospect for an increased dividend, resulting in a large interest yielding on stacks, the favorable condition for the issue of new stocks and the better chance for thg inflow of capital through stocks.

On the other hand, the solvency being enhanced owing to the increased return on business effected through shifting, the enterpriser, that is, the fund borrower, would be relieved of the anxiety concerning the cumulative debts of loan over a long period of time. The situation would affect the lender equally favorably. It is quite natural that under the circumstances as above, the enterprise, which is capable of shifting the corporation tax, becomes ever willing to borrow money so as to strengthen its business at least in its financial aspect[7].

(7) J. Lintner: "Effects of a Shifted Corporate Income Tax on Real Investment", *National Tax Journal*, September, 1955

The generally observed fact, therefore, that the taxation system of Japan promotes the procurement in the loaned fund seems to come partly from the differential in the tax administration between interest and dividend rather than from the corporation tax burden itself, for the decisive factor in the formation of capital consists not in the differential in the apparent fund raising cost alone. Take, for example, Japan. The formation of capital in Japan was due to the economic growth,—the highest ih the world,—enabling her to enjoy a high degree of shifting, and commanding a large demand of outside fund, which was to some extent met through loan, but the main cause for her successful fulfilment of her demand was that the prices in general of stocks failed to rise high enough to facilitate the procurement of fund through stocks and to have the general public interested in the security market. This view, however, should be taken merely as a surmise, as it has not come through a strict theoretical and positive scrutiny. But it shold be added here that no substituting view has appeared yet either.

In this connection, "the paid dividend deductien method" might be adopted again as a policy. This special treatment, probably aiming at the repletion of equity capital, does not seem necessarily to exert a favorable influence in demand and supply of stock capital at the security market. It is true that the conditions on the demand side have been improved, but it is very difficult to give any definite judgement as to, if this treatment should bring about in the business circles of Japan an increase in the paid dividend.

The measurement of how far the lowering of "dividend cost" works in stimulating the dividend, "the so-called net repletion effect of the paid dividend deduction method on the equity capital", has so far made no practical success[8]. Also, we should not be very optimistic in the value of this method, when we become aware of the fact that the disappearance of the benefit derived from the dividend tax deduction enjoyed by the stock holders on the supply side would influence the security market badly.

Appendix: The Theoretical Ttructure of the K-M Model

As was stated before, Y_g—the function of the rate of return on capital—is defined as the reduced form of the macro-model on national

M. H. Miller & J. P. Shelton: "Effects of a Shifted Corporate Income Tax on Capital Structure", *National Tax Journal*, September, 1955

(8) M. H. Miller: "The Corporate Income Tax and Corporate Financial Policies", *Stabilization Policies, A Series of Research Studies Prepared for the Commission on Money and Credit*, 1963

economy. Seen from the standpoint of the basic theory in the model estimation by econometrics, it is essential to show the general forms of the originally pre-supposed complete model of macro simultaneous equations and clarify the theoretical structures of shift analysis, in order to elucidate the nature of the derived reduced forms. Here we shall take up the general forms. But we shall not go into a detaild discussion on them, as we do not necessarily consider Y_g—the function of return on capital—as the complete reduced forms as are assumed in the K-M Model.

The signs adopted to indicate the general forms of the model are somewhat different from those used in the main part of this essay. Below are shown the the signs applied in this Appendix:

Q=quantity of output

N=labor input

N^*=labor force

C=consumption expenditure, money terms

I=investment expenditure, money terms

G=government expenditures

w_g=money wage rate

J=personal tax rate

π_g=gross profits

Z=profits tax rate

V_{-1}=ratio of inventory to sales

M=potential money supply, defined as the excess reserves weighted
　　　by reciprocal reserve ratios

K_{-1}=capital stock at beginning of the period

Y_g=gross rate of return

The forms of macro model presupposed in the shifting analysis of corporation tax:

Ppoduction function:　$Q=Q[N, K_{-1}]$

Aggregate demand function:　$QP=C+I+G$

Consumption function:　$C=C[w_g(1—J)N, \pi_g(1—Z), M, K_{-1}, P]$

Investment function:　$I=I[Y_g, Z, \Delta C_{-1}, G, V_{-1}, M, K_{-1}, P, w_g]$

Labor supply function:　$N=N_s[w_g, J, P, N^*]$

Labor demand function:　$N=N_d[w_g, P, K_{-1}]$

Price equation:　$P=P[M, w_g, J, Z, Q, C]$

Definition equation:　$Y_g = \dfrac{\pi_g}{K_{-1}}$

In this macro model, no presupposition of form is made and the general expressions only are given. It is explained that this arrange-

ment has been taken to avoid the dogmatic selection as to which method be adopted: the Keynesian system, the neo-classicist system, the competive system or the pertect competitive system.

In constructing a model, the first thing to do is the determination of the variables introduced and then to decide on the algebraic forms by which to express those variables: In the K-M Model are selected K_{-1}, G, M, J, N^*, C_{-1}, V_{-1} and Z as the predetermined variables, and are set the reamining 8 variables: Q, N, P, C, I, w_g, π_g and Y_g as the endogenous variables. What makes a model analysis on corporation tax shifting concerning the explanation of Y_g, that is, the function of the rate of return, a success or not is in the important step of making choice of which variables be introduced. And that the way this choice is made reveals either explicitly or imlicitly the economic theory which the model in question presupposes was stated in the substance of this paper. So, this point should be further inquired as an important theoretical subject in the future.

Next, the reduced form of Y_g, that is the function of the rate of return is shown below:

$$Y_g = Y_g(K_{-1}, \; G, \; M, \; J, \; N^*, \; \Delta C_{-1}, \; V_{-1} \; Z)$$

This is certainly too complex a formula; it can not be subjected to statistical test directly. It must, therefore, be reformulated into a linear equation. Of course, a nonlinear equation may just as well serve the purpose. Rather, there is a ground for us to believe that the form of corporation tax shifting, which is likely to reflect in the function of the rate of return, can be represented by a non-linear expression. In other words, it is doubtful, if the forms of shifting as defied in the substance of this paper are capable of explaining the real behaviors of an enterprise, and also the shifting as such would remain steady in relation to the function of the rate of return or the tax that come under the influence of a competitive situation of enterprises or the business fluctuation. Despite the fact, the linear expression is desirable as it meets the primary requisite in the study of this sort, the construction of a practical model. Specifically put, the above equation has been reformulated as follews:

$$Y_g = a_0 + a_1 \Delta\left(\frac{C}{GNP}\right) + a_2 V_{-1} + a_3 J + a_4\left(\frac{G}{GNP}\right) + a_5 Z + u$$

The variables are all put in ratio, as was mentioned before. As comared with the previous equation, there are three variables dropped

on the right: K_{-1}, M and N^*. The omission of K_{-1} is explained with the existence of multicollinearity between it and other variables, and also by the very little probable inprovement in fit, even if K_{-1} takes the place of GNP and be expressed in ratio concerning C_{-1} and G_t. The omission of the two other variables, M and N^*, are similarly explained on the basis of their unimportance as explanatory agencies for Y_g, the function of the rate of return.

The equations that went through the experimental test of the K-M Model is the same as the linear equations presented in the preceding paragraph, but there are some differences in the definitions on J, the rate of tax; G, the government expenditure; and the corporation tax variable, as described below:

(1) J, the tax rate variable, is not a personal tax. It means all the taxes except the corporation tax;

(2) The government expenditures is confined to the Federal Government expenditure;

(3) The corporation tax is to be specified later. Here are shown its general forms only.

Having surveyed through thd characteristics of the model, we have come to learn how important the choice of predetermined variables and the definitions for them are in constructing a model, as well as how decisive a consequence they yield in the analysis of corporation tax shifting. Especially, when we become aware that the analysis of corporation tax shifting is an important tool in the determination of the fiscal policy of a nation, a model should be so constructed as to ensure the constancy of nation beyond the temporal expendiency. Viewing in this way, we should be ever attentive to the mutually controlling relationship among various economic variables. The theory that the shifting worked in the past and the present would similarly be operative in the future is too naive a concept to be applied to the world involved with too many economic phenomena that are historical and ever changing.

In order to avoid the miscarriage of tax policy likely to happen as explained above, the K-M Model has endeavored itself to be an effective parametric device capable of searching into the constant phase of a tax policy. Such an attempt has been very rarely made in the past at least as far as the problem of tax shifting is concerned. So, the contribution to this cause rendered by Krzyaniak and Musgrave should be highly commended. And with their work as the starting point, we should ever be looking forward to the dovelopment of this sort of inquiry.

IV. The Differentials in Tax Burden and the Growth of Corporation

1. The Differential Tax Burdens of Corporations by Size-Groups

Observing the whole industry, we do not feel quite urged to launch out on an immediated reorganization of the Japanese corporation tax system on the assumption that the corporation tax is excessively shifted. There are several reasons why we are restrained from taking prompt action on the matter. One of the most important ones among them is the fact that the different enterprises vary in their ability to shift their imposed tax burden. To look into the differentials of tax burden, it is convenient to use the classification of corporations by industries, but the classification by size-groups is also an important one to be used as list[1].

As was mentioned before, the K-M Model of the United States measured the degree of shifting by dividing the manufacturing industries into two: the large ones with the capital of more than 50,000,000 dollars and the smaller ones with the capital less than that. Contrary to our expectation, the result was that the large industries shifted to the extent of 121%, while the smaller ones to a higher degree of 129%. It is true that the difference was little. But when we remember the fact that the degree of shifting on the average was 123%, in other words, the degree of shifting with larger groups was below the average, while with the smaller ones, it was beyond. The fact

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(1) Here, the importance of the questionaire approach also should be mentioned as a method for the positive analysis of the corporation tax shifting. The Inquiry Commission on Taxation System distributed in summer of 1964 the "questionaire form asking for the view on corporation taxation" to the corporations with the capital of more than 500,000,000 yen throughout the Kansai District, directly to look into the possibility of the corporation tax shifting. The 7 questions asked were as follows:

I. On the difference in the concept of expenditure between the corporation account and the tax office account;

II. On the determination of sales price;

III. On the competitive conditions at market and the corporation behaviors;

IV. On the corporation tax, wages and the raw meterial price;

V. On the determination of the equipment investment;

VI. On the method of procuring capital fund;

VII. On the period of depreciation.

Concerning the results of this factual investigation, see Kazuo Kinoshita: *Report of the Investigated Views on Corporate Taxation*, The Sub-Commission of The Inquiry Commision on Taxation System, August, 1964. A similar factual investigation was made in England. Of its details, see A. S. Mackintosh: *The Development of Firms, An Empical Study with Special Reference to Economic Effects of Taxation*, 1963.

seems to suggest the necessity to reconsider the hitherto conceived interpretation on the differentials in the shifted degree of corporation tax by size-groups.

However, according to Steindle, an analysis of American business reports that the profit rate on the gross capital of smaller groups is higher than that of larger ones. He explains this as follows: "To sum up, the regressive tendency of the profit rates in the income corporations is due to small corporations taking higher risks in exchange for the chance of increased profit in case of success; whereas with the increase in size of the corporation, safety increases steadily, which involves, however, the foregoing of certain chances of very high profits."[2]

Macrocosmically observed, however, the greater shifting ability of smaller industries does not necessarily mean their enterprising superiority to the larger industries; it rather signifies their instability, for, examining the smaller industries individually we find some of them attain a high degree of growth, while the others get bankrupted.

Here then we take up the questions: What special problems are the corporation tax likely to cause, when it is imposed on smaller enterprises (including new ones and growing ones)?, Wherein lies the importance of those problems? What treatment should be made to solve or relieve those problems through tax system?

The corporation tax will inflict undesirable influence on the new enterprise or the growing enterprise mainly through two channels: (1) It tends to lower the expectant rate of return on the new investment, (2) It tends to create the shortage in the fund necessary for the enlargement of business through the profit diminished on account of corporation tax.[3] The above influence seems to be more aggravated on smaller enterprises than on larger ones. To the latter whose business is well founded, the loss resulting from a risky investment can be offset by the return derived in a current year. In case of a smaller enterprise, however, there is very little possibility for the loss to be covered by the return in a current year, or there exsits hardly any chance to carry it over into the coming years. Expressed plainly, any loss directly leads to its ruin.

Examining the five grade capital classification of the corporations of Japan regarding the rate of return on gross capital (Table IV-1),

(2) J. Steindl: *Small and Big Business*, 1947, p. 47.

(3) On this subject the author published another essay before, Seiji Furuta: "Taxation Policy and Business Activities", May Number, the *Mita Gakkai-zasshi*, 1963.

we find the lowest grade (capital less than 10,000,000 yen) shows the highest rate, and the third grade (50,000,000-less than 100,000,000 yen) stands at the lowest. Concerning the rate of return by sales, we find the smaller the scale of business, the lower the rate and the larger the scale of business, the higher the rate. Coming to the turn-over rate of gross capital, we find the reverse the case, that is, the smaller the scale of business, the higher the rate, and the larger the scale of business, the lower the rate. The fact takes no explanation, as it is quite understandable. Only, the additional elucidation on the highest rate of return on gross capital with the lowest capital group may be given, that this salutary effect was made possible for them at a determined sacrifice of their security, as was pointed out by Steindle with reference to the United States. (Also, it should be mentioned that the precision of the statistical meterial concerning the smaller corporations is not very high at the present stage of its technical development, and also that the situation of their business is apt to be represented better than the average of their actual conditions.) This is an important fact which should never be overlooked any person who is interested in the establishment of a proper corporation tax system in connection with the problem of shifting by smaller corporations and their growth.

The second undesirable effect of corporation tax is in reducing the internal fund and thus in restricting the investment from within, especially in case of a smaller corporation which largely counts on its reserved funds (See IV-2). Needless to say, this high dependence of smaller corporation on the reserved fund for the procurement of its capital does not mean that its saving capacity is superior to the large one. All it means is that this high dependence on the reserved fund by the smaller corporation is that its ability to raise fund is inferior to the larger one for which it is not only possible to borrow money for investment from home agencies, but to collect it through the public security market or even from abroad. But these facilities for the acquisition of capital are all beyond the reach of the smallers and denied to them. Such a difference in the enterprising opportunities between the larger and the smaller corporation comes from the amount of credit which the public grants to each of then. Also, this differene is to be ascribed to the low productivity, the embarrassed business management, the inferior working conditions, etc. of the smaller corporation, as if often pointed out in the discussion on the "double economy" of Japan. In addition to these peculiarities of the smaller corporation, we should be aware of the large gravity which the smaller

TABLE IV-1: THE RATES OF RETURN ON SALES, TURN-OVER RATES OF GROSS
CAPITAL AND PROFIT ALLOTMENT RATES BY THE SALES OF INDUSTRY:
ALL INDUSTRIES AND MANUFACTURING INDUSTRIES

	Profits / Sales	Sales / Gross Capital	Profits / Gross Capital	Corpora- tion Tax / Net Profit	Bonus / Net Profit	Dividend / Net Profit	Reserved Within / Net Profit
All Industries							
I	3.6%	2.44 times	8.8%	55.1%	6.9%	12.3%	25.7%
II	4.2	2.01	7.5	51.3	6.3	15.9	26.5
III	4.4	1.68	7.4	48.3	4.7	18.9	28.1
IV	5.8	1.41	8.2	45.0	2.6	22.4	30.0
V	7.8	1.04	8.1	39.7	0.7	29.4	30.2
Manufactur- ing Industries							
I	5.4%	2.07 times	11.2%	53.3%	7.0%	11.5%	28.2%
II	6.7	1.61	10.7	49.2	5.3	13.9	31.6
III	7.1	1.41	10.0	47.5	4.6	17.9	30.0
IV	8.6	1.23	10.6	44.5	2.4	22.2	30.9
V	11.3	0.90	10.2	39.3	0.7	26.3	33.7

Notes: (1) Source: Ministry of Finance, *Annual Statistical Report on Corpora-*
tion, 1960.

(2) Corporations classified into the following five grades according to
capitals:

  I. Less than 10,000,000 yen
  II. 10,000,000-50,000,000 yen
 III. 50,000,000-100,000,000 yen
 IV. 100,000,000-1,000,000,000 yen
  V. Above 1,000,000,000 yen

corporation takes in the industrial structure of Japan as compared with
other advanced countries, offering a field filled with a variety of
unique problems.

Here we are not to make any survey on the so-called smaller cor-
poration problem of Japan either retrospectively or prospectively[4].
But it is important to know that as far as the demand and supply of
capital was concerned, there has been a distinct difference in its ma-
noeuvering according to the size of enterprise, in other words, the
smaller the scale of bussiness, the greather the difficulty in the pro-

(4) On the subject here are cited only a few of the recent publications, Hiroshi
Kawaguchi and others: *The Basic Structure of Japanese Economy*, 1962. Yoshihiko
Morozumi and others: *The Reorganization of Industrial System*, 1963. Tokutarō
Yamanaka and others: *Economic Growth and the Smaller Enterprise*, 1964.

TABLE IV-2: Sources of the Financed Corporation Capital
(Total for the Period 1956-1962)

	Smaller Corporations		Larger Corporations	
Capital	98,800,000,000 yen	9%	456,900,000,000 yen	18%
Reserved within	270,300,000,000 yen	26%	516,200,000,000	20%
Borrowed from banking agencies	213,900,000,000	20%	716,300,000,000	28%
Bought on credit, debts	343,500,000,000	33%	533,900,000,000	21%
Other items	125,500,000,000	12%	316,400,000,000	13%
Total	1,052,000,000,000	100%	2,539,700,000,000	100%

Notes: (1) Source: Board of Smaller Corporations, White Paper on Smaller
Corporations, 1963.
(2) "Reserved within" includes the depreciation account.

curement of capital is a generally recognized fact. Macrocosmically observed, this marked difference in the ability to procure capital, according to the size of business seems to have come basically from the absolute shortage in the total amount of capital. It is true that Japan has attained a great economic development following the post-war rehabilitation, but financing has always been the bottleneck to her. Throughout the economic inflation in the post-war rehabilitation period, the total amount of capital of Japan increased immensely,—we might say, nominally. Yet, there is no denying that she constantly suffered from the insufficiency in the absolute amount of capital in consequence of her ever growing economy. The fact can be plainly perceived, if we compare it with the pre-war condition; take one of the Marshallian K's, and you will find its value dwindled by about one-half after the war. If compared with the country like the United States amply provided with capital you will notice the differential far more conspicuously. It is natural, therefore, that the differential between the larger enterprise and the smaller one became aggravated in Japan where the larger one started on the basis of deficient capital and accomplished its growth under the patronage of the preferential policy for it.

As seen from the aspect of capital cost and timing also, the larger enterprise was given a better treatment than the smaller one. The capital formation of corporate business after the war mainly depended on the loan capital, which enabled the larger corporation to adopt the modern production method with a highly intensive capacity for the

acquisition of capital through the aid of a relatively low substantial interest. On the contrary, the smaller corporation had no choice but to adopt a heavily labor force dependent production method with an inferior capacity for the acquisition of capital. This differential cost through the rates of interest according to the size of enterprise along with the question of differential wages should be carefully studied, as it makes an important factor in setting the pattern for the growing Japanese economy, as is often referred to.

The next differential to be considered in financing according to the size of enterprise concerns with the question of timing. With the coming of a downward trend in business, followed by the slack in the demand for capital, banks turn to smaller corporations as the outlet for their surplus funds. But once the heat of prosperity is restored, the shortrun financing to the smaller enterprise gets straitened under the pressure of demand from the larger one. When the demand of the larger corporation reaches its peak, the fund to be advanced to the smaller one is exhausted. The trend as described above well exemplifies the relationship between the larger enterprise and the smaller one in money market: the target of the short-run financing by private money agents is centered on the larger enterprise. Thus the smaller enterprise is at ease in money when the larger enterprise is not pressing hard for money, but its faces the financial difficulty when the larger enterprise is tight with the money market.

Briefly put, the various differentials produced in money market between the larger enterprise and the smaller one were instrumental in something the way for the procurement of fund by the larger enterprise, in spite of the shortage in the absolute amount of fund, while the smaller enterprise in this connection, never standing in the way of the larger enterprise financially, aided the latter indirectly or negatively in its venture for the attainment of the high degree economic growth centering around the larger corporations. So, considering the corporations as classified by size, we observe that the immediate vehicle of the high degree economic growth of Japan was the larger corporation with the smaller corporation acting only as its adjustant.

Let us summarize the points so far discussed. It seems that the burden of corporation tax considered according to the sizes of the agencies concerned affects the rate of return and the internal reserve fund differently. We must know that there had existed in the Japanese economy a number of unbalanced developmental patterns before the differentials on account of the burden of corporation tax should emerge, and the government activities including the imposition of corporation

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tax, being accelerated by these patterns, produced a badly crippled differential economic growth between the larger corparotion and the smaller one. Seeing through the corporation tax, we may safely say that these developmental economic patterns were certainly active in the aggravation of unequal development of Japanese economy. The fact is quite obvious, if one should glance over Table IV-3 presenting the differentials in the corporation tax burden by size-groups from 1958 through 1960.

First, a clear-cut differential in the coporation tax burden by size-groups according to capital is shown between the corporations with the capital less than 50,000,000 yen and those with the capital larger

TABLE IV-3: DIFFERENTIALS IN THE CORPORATION TAX BURDEN
BY SIZE-GROUPS, 1958-1962

	(1) Number of Corporation	(2) Assets	(3) Business Profits	(4) Corporation Tax	(5) Depreciation	(6) Corporation Tax / Business Profit	(7) Corporation Tax / Business Profit-Depreciation
All Industries							
I	93.8%	21.0%	23.1%	28.2%	22.1%	59.5%	32.7%
II	3.3	5.1	6.4	6.8	5.8	52.0	30.0
III	2.1	9.1	6.9	6.3	7.2	51.9	28.4
IV	0.3	4.0	3.9	4.2	3.8	51.8	28.0
V	0.5	60.8	59.7	54.5	61.1	44.2	22.5
	100.0%	100.0%	100.0%	100.0%	100.0%	49.3%	25.7%
Manufacturing Industries							
I	92.9%	15.7%	17.0%	21.1%	15.3%	58.6%	37.3%
II	3.5	4.4	5.2	5.7	5.1	51.7	30.2
III	2.3	7.4	8.1	9.0	8.2	52.5	29.7
IV	0.5	3.7	3.5	3.9	3.5	52.7	30.0
V	0.8	68.8	66.2	60.3	67.9	43.1	24.0
	100.0%	100.0%	100.0%	100.0%	100.0%	47.3%	27.1%

Notes: (1) Source: Ministry of Finance, *Annual Staticstical Report on Corporations.*
(2) Corporations classified into the following five grades according to capital:
    I. Less than 50,900,000 yen
    II. 50,000,000-10,000,000 yen
    III. 100,000,000-500,000,000 yen
    IV. 500,000,000-1,000,000,000 yen
    V. Above 1,000,000,000 yen

than that. Secondly, another marked differential is seen between the giants with the capital of more than 1,000,000,000 yen and the corporations with the capital smaller than that. Consulting the Table, we find these two lines of differential manifest both in "all industries" and "manufacturing industries" (see column (6) of the Table).

Here is the question which strikes us immediately: What has brought about this difference? To clarify this point, it seems we should again reason along the twofold observational paths; (1) the observation of the private economy as conditioned by its internal mechanism, (2) the observation of the special treatments that are expectant in corporation taxation. These two lines of pursuit should be distinctly demarked as each of them makes an important cause for the differential in the corporation tax burden as classified by the size of corporate body.

As everybody knows, smaller corporations are constantly exposed to the danger of bankruptcy to be replaced by new ones. Concerning the "factors that will help the smaller corporations in their maintenance", the reader is adviced to turn to Steindle or Beacham for information[5]. The point is that this peculiarity of smaller corporations is related to the differential in the tax burden according to their sizes. In Japan too, the growth of the smaller corporation is hampered because of the factors previously mentioned, but the gravity which the smaller corporation takes in the whole of industries is on the increase rather than decrease, despite the apparent rapid change of rise and fall in smaller business.

Also, the gain or the loss of the smaller corporation is quite keen and wide as compared witn the larger one. This is a natural inverse reflection of the high profit rate of smaller corporation. Thus the high probability of bankruptcy and the violent fluctuation in the gain and loss of the smaller corporation tantamounts to a heavier corporation tax as compared with the larger corporation which enjoys a low probability in bankruptcy and a steadiness in business. Such being the case, even the proportional tax rate, if taken over some years, tends but to produce the differential in the tax burden classified by the size of corporate body, although the corporation tax may adopt the two grade progressive rate in practice.

Taking this point into consideration, Table IV-3 has estimated the five year average of corporation tax burden by size-groups. The implication of this Table is: Suppose a corporation suffered a deficit in 1958, the year when the general rate of return reached the bottom, but made profit in the following year, the corporation in question

(5)   J. Steindl: Ibid., A. Beacham: *Economics of Industrial Organization*, 1955.

would pay no corporation tax in the deficit year but would have to bear the tax burden in the following surplus year. Now, if his rate of tax is calculated on the basis of the net profit in the two years, the rate of his substantial tax would be taken as raised in practice. Such would never happen with a larger corporation whose return is stabilized. But with a smaller corporation it is the situation of frequent occurrence.

But here is an opposite view to it. With the application of the recognized expedients in taxation,—the deficit carried over five years, and the one year carry-back deficit,—violently fluctuating losses and profits of the smaller corporation would be smoothed through the tax rate, averaged over some years, since the deficit carried over would be taken care of by the profits in the future, and the presumed profit in a deficit year, by the profit in the past.

This opposite view, however, is overlooking the fact that the smaller corporation which often gets bankrupted is quite restricted in its resorting to the deficit carried over method. This method is available only to the larger corporation which can stand the years' deficits. As to the carry-back deficit method, the smaller corporation practically has no chance of utilizing it, if not provided with an ample fund necessary for it. (Usually, a new smaller corporation is hard up for it.) This is, therefore, useful only for the larger corporation that has amassed profit in the past. On the other hand, to the corporation which is reaping a steady profit, this is just a superfluity.

The facts as described above are the conditions which we had in mind at the beginning, when we stated that the differentials in the tax burden are determined by the internal mechanism of private economy. Concerning the other phase of tax burden differentials by the size-groups, we may turn to the structure of corporation tax system for explanation.

In Table IV-1 are presented the differetials in coraporation tax burden for 1960, showing the possibility of differentials even just for one year period. The fact is to be accounted for through the biased application of the "Taxation Special Treatment Law" for the larger corporation. Table IV-4, A and B are the results of a sample study to ascertain the extent how far the special treatments were responsible for the differentials in the tax burden by size-groups.

Either of these tables shows the taxable income of the larger corporation more contracted as compared with the smaller one, indicating a relatively lightened taxation on the large corporation. Looking over the Investigation A for 1959 and the Investigation B for 1961, we

TABLE IV-4: THE COMPARISON BETWEEN THE LARGER CORPORATION AND THE SMALLER CORPORATION
WITH REFERENCE TO THEIR TOTAL INCOMES AND THEIR TAXABLE INCOMES CALCULATED
ON THE BASIS OF SPECIAL TREATMENTS INVESTIGATION A: 1959

Corpo-rations	Num-ber of Corpo-rations	Total Income	Specifications of the Tax Exempt Income and the Non-taxable Reserve Fund								Taxable Income
			Tax Exempt Important Products Income	Tax Exemption on Dividend for Capital Increase	Export Trade Income Reckoned into Loss Account	Reserve for Dead Loan	Reserve for Price Fluctua-tion	Security for Retire-ment Bonus	Special Redemp-tion	Total	
Larger	136	100	0.9	—	3.1	2.9	3.4	6.3	3.9	20.5	79.5
Smaller	300	100	—	0.3	1.5	2.2	3.0	1.3	0.5	8.8	91.2

Notes: (1) Source material: The Inquiry Commission on Taxation: *The Replies on the Pressing Revision of Taxation System*, 1960.

(2) Larger conporations: Investigated of the corporations settled in May-October, 1959. Smaller corporations: Investigated on the average rates of the corporations (the capital less than 50,000,000 yen) settled in the 3 business years 1957-1959, under the jurisdiction offices in Tōkyō and Ōsaka.

Total income refers to the income refers to the income for which no special treatment is applied.

TABLE IV-4: INVESTIGATION: B, 1961

Corpo-rations	Num-ber of Corpo-rations	Total Income	Specifications of the Tax Exompt Income and the Non-taxable Reserve Fund							Taxable Income
			Tax Exempt New Important Products Income	Export Trade Income Reckoned into Loss Account	Reserve for Dead Loan	Reserve for Price Flutuation	Socurity for Retirement Bonus	Special Redemp-tion	Total	
Larger	190	100	0.3	2.6	3.4	0.3	5.1	6.3	18.0	82.0
Smaller	170	100	—	2.2	5.4	2.1	2.1	0.3	12.0	88.0

Notes: (1) Source: The Inquiry Commission on Taxation: *The Source Materials Collected by the Inquiry Commisson on Taxation*, Vol. 1, 1963.

(2) Larger comporations: Investigated of the corporations settled in the period May, 1961-April, 1962, Smaller corporations: Investigated of the corporations settled in the business year, 1961, for which more than one special treatment was applied under the jurisdiction of the Nihombashi and Kōjimachi Taxation Office, the Tōkyō National Bureau of Tax,

find the differential in the tax burden by size-groups being shrunk in the transition of these two investigations, verifying that the absolition of some special treatments were arranged.

But we should remind you that the sampling for this investigation was made largely out of the smaller corporations that were favored with some sort of special treatment. Take for example, upon the examination of the investigation of 1959 case by case, the comment is made that the percentage of the taxable income to the total income of the larger corporation is about 60 or 70%, while the smaller corporation it is 80 or 90%[6]. Judging from this outcome, the Taxation Bureau of the Ministry of Finance concludes the effective rate of tax, if involved with special treatment, to be 31.3% with the larger corportion as against 38.0% with the smaller corporation. Lately, this difference is diminishing, but the basic trend seems to be quite unaltered. In the column (7) of Table IV-3 are shown the tax burden rates estimated on the basis of the gross profit consisting of business profit and the security for depreciation. This estimation was made keeping eye on the significance of the relative size of the depreciation fund kept by the smaller corporation, still there is questioning that there exists the differential.

In brief, it is important to call the attention of the people to the fact that there exists in Japan a peculiar and undeniable taxation system which makes use of the so-called "special treatments in taxation" as the tax exemption, the reserve fund, the security fund, the special redemption, etc. by which the larger corporation is alleviated in its tax burden, whereas the smaller corporation is not benefited by them. In this connection, it should be mentioned that the so-called reserved income tax imposed on the family partnership corporations which compose the majority of the smaller corporations, tending to aggravate the tax burden differentials by size-groups. We can not take up this problem now, since no statistical study has been made on the matter yet.

2. The Proportionate Growth and the Corporation Income Taxation

Now, we arrive at a conclusion. As pointed out at the beginning of this work, it is indispensable that we give a theoretical consistency to the corporation taxation so as to establish a long term stablized tax system for future, by clearly explaining the reason for the necessity of corporation tax, and at the same time by definitely setting up

(6) The Inquiry Commission on Taxation System: *Explanation of the Contents and Process concering the Replies and Discussion on the Pressing Reform in Taxation System,* 1960, *p.* 241.

the policy stand by which it will be usefully enforced. The study which Japan has made so far on the shifting of corporation tax would hardly meet all the requirements now under consideration, but there is no question that it makes the foundation for the clarification of the character and the function of corporation tax, and that it will lead to the proper solutions for the number of questions which the corporation tax system now faces, such as the equitable distribution of tax burden and its effect on the stability and the growth of economy.

From this standpoint, we made a positive, analytical measurement concerning the shifting of the Japanese corporation tax in Chapter III. The values thus derived, however, can not be used as they are, because of the unsatistactory attainment in the study of corporation tax as an economic policy.

As everybody knows, the corporation tax system in any country is formed on the basis of "non-shifting assumption". The system, however, should be radically reexamined in all of its aspects including the administrative phase, if we should accept the previously mentioned "assumption of the excessive shifting (200% shifting)".

Suppose this reexamination be executed and demands a thorough reorganization of the corporation tax system, we should still observe a certain period of time necessary for a smooth transition for fear that any sudden change in the corporation tax policy may cause friction and confusion of the economic activities among the people, both individual and corporate. Here, however, we are not to go into the details of the policy aspect of the corporation tax, since it is in fact out of the field which this work deals. What we are concerned is to find out to what extent the corporation tax burden is shifted and what should be the proper form of the corporation tax when the primary point is established.

In this connection, we again examine one of the major comments on the most important revenue source in the national taxation system, that is that the high rate corporation tax tends to restrict the economic growth. This comment is based on the idea that the high rate corporation tax, different from other kinds of tax, exerts a strong restricting influence on the general economic activities of the corporation which make the enduring motive force for economic growth. This comment implies the two ideas: (1) The restricting influence of the corporation tax on economic growth will be relieved, if the tax revenue is kept at a fixed amount and the corporation tax is abolished being replaced by other taxes, (2) the assumption that the majority of the

corporation taxes, if not all, are carried by the corporation, that is, by the stockholders. Any person, therefore, who criticizes the corporation tax of its restricting influence on the economic growth should be prepared to be able to explain the conditions on which his argument is based, and answer the questions that are likely to be made.

Further, it is important for him to be equipped with a clear-cut knowledge of corporation investment, if he should ever want to have a definite concept concerning the significance of the corporation tax on the growth of corporate business. But at the present moment, there exists neither the satisfactory theory on investment behaviors nor the techniques for their analytical study. Thus, concerning the effect of the corporation tax on the investment also, nothing theoretical or final has been said, leaving the matter in a very unsatisfactory manner. No statistical evidence has been forwarded in this connection either. The effect of the corporation tax on the corporation investment is too complex a matter to be answered definitely on the basis of the empirical knowledge.

But judging from the diffentials in the corporation tax burden by size-groups discussed in the preceding section, we feel rather positive of the probable influence of the corporation tax as a disturbing factor to the proportionate growth of corporation. As is well-known, the Japanese corporation tax has adopted the two grade progressive rate system on the set standard of definite incomes, This system, however, seems to run counter to the "impersonal entity theory of corporation" which is considered to be the basis of the corporation tax since the advice by Shoup.[7]

According to the "impersonal entity theory", the corporation tax rate should be a proportionate rate for the reason that the corporation tax is the taxation levied at the source of the individual dividend income. Despite of the fact, the two grade progressive rate is adopted for the apparent consideration in favor of the smaller corporation[8]. The application level for the reduced corporation tax rate has been repeatedly raised for the apparent consideration for the smaller enterpriser.

Quite countray, however, to the policy consideration like this, we clearly observed in the preceding section the existence of differentials in tax burden as classiffed by size-groups. Really, the two grade pro-

(7)   The Inquiry Commissian on Taxation System: *Ibid.,* p. 108.

(8)   The Inquiry Commission on Taxation System: *Explanation of the Contents and Process concerning the Interim Replies and Discussion on the Reform of the Taxation System for* 1964, 1963, p. 3.

gressive rate should be done away with, if we should ever stand by the principle of the "impersonal entity theory of corporation". Further, all the treatments as the "Taxation Special Treatment Law", that are apt to produce the differentials in tax burden by size-groups should be abolished. Then, the theoretical consistency in taxation that has been tending to be lost sight of since the establishment of the Shoup's taxation system will be nearly restored.

Here is another factor which underlies the economic growth: the process of growth in scales of enterprises. Various industrial enterprises make advance at the different rates of growth through the agency of such development determinants as the investment opportunity, the prospective profit, the corporate amalgamation, etc. The corporation tax also should be taken as a restricting element in the determination of industrial scale.

We all know that as the enterprises of a nation grow and follow the proportionate course of growth, the distribution of enterprises by size-groups takes the long-normalities, and in that event the chance for the difinite proportionate growth of each enterprise is the same[9].

Generally speaking, there has been offered practically no convincing analysis as to what brings about the differentials in the development and growth of enterprises. Just as, however, it is possible to predict the balanced growth rate of a total economy from the policy standpoint, it seems possible to tell the balanced scale rate of various enterprises. This, however, does not necessarily mean that the attainment of the balanced growth rate of a total economy coincides with the attainment of the balanced scale rate of various enterprises, and its vice versa. This is especially true with reference to Japan where a crippled economic growth process happened, bringing about a marked differential between the larger enterprise and the smaller enterprise, on account of the post; war rapid recovery and the sudden economic growth. So long as, however, the economic growth rate is grasped as the average level of the national income or as the rate of increase in the economic level of the nation per capital, the differentials in the average economic levels among individuals, enterprises and districts should be taken as "illegitimate children" bron out of the economic growth. But these fluctuating differentials should be treated as the worthy "legitimate ones", when the question how they would dictate on their part the growth rate of economy at a specific point of its development comes to be set forth.

(9) Chōtarō Takahashi: *Economic Growth and the Distribution of Income*, Chapter VII. 1962.

From the policy standpoint, however, some attempts have been made to bring these fluctuating differentials, mainly aggravating ones, under control; "The Fundamental Laws on the Smaller Enterprise" enacted in summer 1963 may be mentioned here as typical of them. The Laws are generally considered being aimed at the elevation of the smaller enterprise in efficiency and modernization. The industries indicated in the Modernization Furtherance Law are expected to be granted with the special treatment in capital raising, and the extra depreciation system in relation to the modernized equipments after the modernization bill will be approved. Behind these special treatments lie the government intention not only to aid the smaller enterprise but to adjust the imbalance created among the enterprises of different sizes as a result of the high economic growth policy centering around the larger enterprise. Needless to say, the smaller enterprises indicated in the Modernization Furtherance Law are limited in number. A doubt remains as to what extent the equilibrium among the enterprises of different sizes would be attained even after the modernization of the scores of smaller enterprises is effected.

Coming to the corporation tax policy, we get worse struck with this doubt. It is quite obvious that there is an imbalance between the larger coraporation and the smaller one concerning the corporation tax burden by size-groups, and this tendency will continue unless a revision is made in the taxation system to adjust the existing imbalance.

The treatment like the Modernization Furtherance Law has been provided to accelerate the growth of the smaller enterprise on one hand, while on the other there remains untouched such a measure as the differentiation of tax burden by size-groups which prevents the enterprise from growing.

Upon the abolition of the Taxation Special Treatment Law and other similar acts, there will be opened the way for fair competition among the enterprises, as far as tax is concerned. Along with it will be naturally realized the primary object of the Fundamental Laws on the Smaller Corporation at least with reference to the taxation. Seen from this point of view, the direction which the revision of the taxation will take in the future snould be carefully watched.