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Natural Disasters and Taxation in Japan

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Abstract

This paper examines the role of taxation policy in response to natural disasters, particularly earthquakes. Disaster-related measures in relation to the taxation system that can be taken before and after a natural disaster are considered separately. Through a comparison of differences in the relationships between disasters and taxation for each item of taxation in Japan, we aim to work back to some basic points for discussion on several anomalies in the structure of taxation.

Economic relief measures in the wake of a disaster carry a moral risk of reducing the efficacy of pre-disaster measures that provide incentives to take precautions in advance. Of course, post-disaster economic aid itself may be carried out from the point of view of income distribution and must be considered independently of disaster preparedness incentives. It is neither necessarily desirable nor realistic to abolish entirely all post-disaster economic aid measures. However, it needs to be recognized that economic disaster relief effectively plays the role of insurance provided at no cost by public bodies, and that in a political context it is very difficult to put a brake on the expansion of economic disaster relief. Post-disaster taxation measures that exert no adverse influence on prior incentives may be that restrictions imposed with a view to preventing tax evasion can be relaxed in their application to individual victims and corporations in the affected areas.

It is also important to recognize that there is a limit to the role that can be played by disaster-related taxation measures, be they prior provision of incentives or post-disaster economic relief. Reductions in the tax burden affect only those who pay tax, and there are limits on the size of possible reductions. It is obvious that a comprehensive view of disaster-related measures, encompassing budget expenditure and public regulations, is required.

In order for local governments to enact policies that are appropriate in the age of decentralization that will allow “regions to take care of themselves”, it is desirable that they introduce regulations in advance specifying that in the event of a disaster, they will automatically levy extra residential and property taxes. The resources obtained through this kind of extra tax would be used for individuals and localities affected by the disaster, and reconstruction plans could be made that would not depend solely on the support of central government. Local governments would likely also be expected to play a larger role in providing incentives to encourage residents’ efforts to help themselves through taking advance disaster precautions. In particular, since local governments are not vertically compartmentalized like the central bureaucracy, they should be better able to implement comprehensive measures.

Considering that post-disaster economic aid measures need fiscal resources, one of the most important roles of taxation policy is to enable the central government as well as local public bodies to collect sufficient tax revenues.

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I. Introduction

This paper examines the role of taxation policy as a response to natural disasters, particularly earthquakes. We aim to work back, via a consideration of how the relationship between natural disasters and taxation varies with each item of taxation, to identify some anomalies in the tax system as fundamental points for discussion. Although the main subject of the paper is taxation policy as a direct response to natural disasters, it goes without saying that the most fundamental function of taxation is securing revenues with which central government and local public bodies may provide public services to citizens and residents. Accordingly, it is worth affirming at the outset that it is precisely the securing of resources to enable vital disaster-related public expenditures (on advance preparedness and post-disaster recovery measures) by national and local government bodies, which is the most fundamental issue for taxation policy as an instrument of natural disaster response.

The paper is structured as follows. First, in Section II, we consider tax system measures that may be taken prior to a natural disaster. The principal focus is on how the tax system can provide incentives that encourage people's efforts toward disaster preparedness. Next, in Section III, we consider tax system measures that may be taken subsequent to the occurrence of a natural disaster. The principal focus here is on economic relief for disaster victims; from the point of view of incentives, there is an implicit disconnect between the measures prior and subsequent to the disaster. In Section III we also discuss the role that local public bodies are expected to play from the point of view of taxation. Finally, in Section IV we present our conclusion.

II. Prior Tax Measures

By way of tax measures that may be taken prior to a natural disaster, we consider the following specific pre-earthquake measures currently applied in the tax system:

1. allowances for earthquake insurance premiums; and
2. tax measures to promote earthquake resistance improvements.

However, it is necessary to conduct proper studies on the extent to which prior tax measures can contribute to disaster preparedness. Ultimately the measures discussed below are ancillary means of advancing other disaster preparedness policies.

II-1. Allowances for earthquake insurance premiums

Introduced under the Income Tax Law (Income Tax Act Article 77) in 2007, allowances for earthquake insurance premiums replaced the previous system of allowances for damage insurance premiums. Individuals who pay earthquake insurance premiums are thereby able to obtain taxable income allowances of up to 50,000 yen. Since 2008, allowances of up to 25,000 yen have also been introduced on individuals' local residence taxes, in respect of half of the value of earthquake insurance premiums paid.

The reasoning behind the introduction of tax allowances for earthquake insurance was summarized in the "Complete Revised Tax Law" ("Kaisei Zeihou No Subete" FY 2006 version, p.206) as follows:

"Although it is important to encourage uptake of earthquake insurance as part of earthquake preparedness policy, the uptake rate cannot yet be said to be adequate. The establishment of a system of income tax allowances in respect of earthquake insurance premiums that reduce the real burden of those premiums was identified as being effective in promoting the uptake of earthquake insurance by citizens. It was therefore decided to establish allowances in respect to earthquake insurance premiums, with a view to supporting self-help efforts related to provision against losses in earthquake disasters."

Thus allowances in respect to earthquake insurance premiums were introduced as an incentive measure to encourage the uptake of earthquake insurance, which gives them a rather different character from the considerations of 'taxability'[1] that underlie income tax allowances in general. Kaneko (2007) wrote of allowances for earthquake insurance premiums that, like allowances for social insurance premiums, "that part of income used to pay these premiums does not possess taxability," but regarding allowances for earthquake insurance premiums, we contend that premium payments cannot inevitably be associated with reduced taxability. Insurance premium payments (with the exception of any handling charges imposed by the insurance company etc.) are essentially savings of a type that provide a conditional return, namely, the insurance payout that accrues if the scenario being insured against is realized, and does not accrue if the scenario insured against is not realized. It is not inevitable that insurance premium payments, that constitute this type of savings, should attract income tax allowances.

Rather, tax allowances for earthquake insurance premiums are better thought of as special incentive measures to promote the uptake of earthquake insurance. Of course, one cannot know to what extent the introduction of an income tax allowance of up to 50,000 yen annually will encourage people to take out earthquake insurance. Since the allowance reduces the actual cost of the insurance premium by no more than the amount of the allowance multiplied by the marginal tax rate, the sum involved is unlikely to be large[2]. The introduction of earthquake insurance premium tax allowances as an incentive to take on earthquake insurance may thus be of limited efficacy. However, in comparison to the previous loss and damage insurance allowances, it may be said that by being more focused in its applicability and having a higher allowance threshold, the scheme has more of the characteristic of an income tax allowance.

II-2. Tax system promotion of earthquake-proofing

The income tax based system for the promotion of earthquake-proofing was established as part of a policy to boost the earthquake resistance of domestic housing with a view to a target (at least 90% of homes to be earthquake-proofed by 2015) based on the 2005 revision of the Earthquake-Proofing Promotion Law (Act on Promotion of Seismic Retrofitting of Buildings) that followed the 2004 Chuetsu earthquake in Niigata Prefecture and other earthquakes. When local public bodies providing assistance for earthquake-proofing in localities for houses built before 1981 (to older earthquake resistance standards) performed such alterations, 10% of the cost (to a maximum of 200,000 yen) could be deducted from income tax. It was decided that this system would apply from April 2006 until December 2008. In order to qualify under the system, taxpayers are required to attach to their tax return a certificate of the earthquake-proofing work issued by the local public body.

Additionally, individuals who spend more than 300,000 yen on alterations (performed between 2006 and 2009) to homes built under the pre-1981 earthquake resistance standards may have the property tax on the equivalent of $120m^2$ of the property reduced by half for 3 years. This measure is not limited by geographical area, and also applies to earthquake-proofing alterations to housing owned by companies.

Regarding property for business use, business owners who carry out earthquake-proofing alterations to property as specified in the Earthquake-Proofing Promotion Law are entitled to special depreciation of 10% (income tax and corporation tax). This regulation was intended to remain in force until March 2008, but has been extended for a further two years.

II-3. The nature of prior measures

Prior tax measures as discussed above, be they tax allowances in respect to earthquake insurance premiums or tax incentives to promote earthquake proofing, have been introduced as ancillary means of increasing the efficacy of earthquake preparedness measures, namely earthquake insurance and earthquake proofing. Although prior tax measures are intended to work as incentives for people to take up earthquake insurance or undertake earthquake-proofing alterations, their efficacy remains uncertain. Fundamentally, whether or not such incentive measures are necessary is not always self-evident.

Assuming that incentive measures are deemed necessary, they should presumably be justified by reasons along the lines of (1) since people are not always entirely rational[3], they may not take optimal preparedness measures, or

(2) since damage and losses from earthquakes are not limited to the individual but extend to others, preparedness measures have an external economic effect. However, there is some debate about whether such reasons are valid, and a more concrete investigation is probably required. Also, as a separate matter, the low uptake rate of earthquake insurance is frequently cited as a problem, but as a response to that problem, rather than promotional policies based on taxation, the structure of earthquake insurance itself should probably be considered. Also, since 2 years have now passed since the introduction of tax-based measures to promote earthquake-proofing, a quantitative numerical verification of their efficacy is called for.

Another important point for debate is the relationship between prior measures as incentives and economic relief measures subsequent to a disaster. Specifically, there is a conflict between prior and subsequent measures, the problem being that the existence of tax burden relief measures that have the character of economic relief subsequent to a disaster interferes with prior disaster preparedness incentives. This point will be discussed in more detail in section III-6.

From the viewpoint that tax-system based prior disaster measures should, in theory, dissuade people from living in disaster-prone areas, it may be thought that people who live in dangerous areas should be taxed more (e.g. by setting property taxes in excess of normal rates in areas that have a high risk of being affected by natural disasters).[4] However, in reality the introduction of tax-based prior measures of this type would probably be politically unacceptable in Japan.

Lastly, a word on incentive measures for disaster preparedness, and the securing of resources for them. As described above, since the efficacy of providing incentives within the tax system is unclear and those incentives apply only to taxpayers with a tax burden, they provide little disaster preparedness incentive to low-income individuals. However, the most important people to whom disaster preparedness measures should be recommended may be low-income individuals living in older homes unaltered for long periods (because they have been unable to afford the cost of earthquake-proofing alterations). Here, one could imagine disaster preparedness policies involving using funds for earthquake-proofing alterations etc., with the necessary resources being secured through tax increases. In particular, if local governments were to secure the resources needed for such assistance through increased levels of personal residence tax or property tax, one might expect desirable effects to follow. It is hoped that the local governments exercise autonomy and localities have an increased awareness of the need for taking care of themselves.

III. Subsequent Tax Measures

There are many taxation measures that can be taken subsequent to the occurrence of a natural disaster, and many points for discussion. Below, we divide Section III into the following 5 main discussion points:

1. Measures related to personal income tax;
2. Measures related to taxes on corporate earnings;
3. Measures related to consumption and property taxes;
4. Discussion points on the timing of taxation;
5. Discussion points on local taxes and local government finances

III-1. Measures related to personal income tax

III-1-1. Allowances for miscellaneous losses and the reductions/exemptions law

Among frequently-mentioned personal income tax measures that apply to taxpayers who fall victim to natural disasters are the tax burden reductions and exemptions provided as allowances for miscellaneous losses, provided by the Disaster Exemption Law (formal name: Act on Reduction or Release, Deferment of Collection and Other Measures Related to Tax Imposed on Disaster Victims). Here, we compare allowances under the income tax law in respect to miscellaneous losses with the Disaster Exemption Law. Either the allowances for miscellaneous losses under the income tax law or reductions and exemptions in income tax for disaster victims under the disaster exemption law may be selected and applied. [5] Although individual residence tax (local income tax) attracts an almost identical system of allowances to income tax in respect of miscellaneous losses, the allowances on individual residence tax can even be applied when the alternative reductions and exemptions in income tax for disaster victims under the disaster exemption law have been selected.

Allowances for miscellaneous losses are income tax allowances that apply when losses occur due to natural disasters, theft and embezzlement from assets normally required for daily life. The amount is the larger of 1 and 2 below:

1. The difference remaining when 10% of income is deducted from the amount of the loss (here, the amount of the loss means the total of any actual monetary loss plus expenses incurred as a result of the disaster, minus any compensation received from insurance);
2. Expenses incurred as a result of the disaster minus 50,000 yen (here, expenses refer to any outgoing expenditures forced by the occurrence of the disaster).

In the event of losses so large that the allowance would exceed income for that year, the allowance may be rolled over and applied to income from each of the 3 following years.[6]

The Disaster Exemption Law applies when a disaster causes losses to a home and its contents of more than half their value. The exemptions provided against income tax are:

- If income is 5 million yen or less, the whole sum;
- If income is between 5 and 7.5 million yen, half of the sum;
- If income is between 7.5 and 10 million yen, one quarter of the sum.

Thus the amount exempted under the Disaster Exemption Law is a fixed fraction of income tax, and unlike the case of allowances for miscellaneous losses, it is important to note that the amount exempted from tax is not directly related to the amount of the loss suffered. Also, the Disaster Exemption Law does not apply to taxpayers with incomes over 10 million yen. Thus there is an income limit on the application of the Disaster Exemption Law.[7] Also, salaried workers whose tax burden is reduced under the Disaster Exemption Law may have collection of tax at source deferred, or refunded if too much tax had already been collected.

Although taxpayers may choose between allowances for miscellaneous losses and the law providing reductions and exemptions for disaster victims, whichever benefits them most, in general people with substantial incomes who suffer substantial losses will find that allowances for miscellaneous losses benefit them more, whereas others will usually find that the Disaster Exemption Law provides the greater benefit.[8]

In this connection, a National Tax Agency pamphlet makes the following projections for a taxpayer in 2007 with an income of 6 million yen (married with 2 children, and paying 272,500 yen in income tax in the absence of any losses).

Amount of loss	Amount of Income tax in case of allowance for miscellaneous losses	Amount of Income tax amount in case of Disaster Exemption Law
1,000,000 yen	212,500 yen	136,200 yen
2,000,000 yen	112,500 yen	136,200 yen
3,000,000 yen	55,000 yen	136,200 yen

Although the table above shows calculations for a taxpayer with a fixed level of income, the higher the income, more benefit accrues relatively from allowances for miscellaneous losses. This is because since these are allowances against income tax, they have the largest effect on the tax burden for those with high incomes and high marginal income tax rates. Under the Disaster Exemption Law, although the exemptions reduce the burden of income tax, the size of the reduction is determined by the person’s income, not the size of the loss due to the disaster. As seen in the table above, when the Disaster Exemption Law is applied (assuming that the loss is over half the value of home and contents) the amount of tax is fixed independent of the size of the loss.

While the relative merits to disaster victims of tax reductions from either allowances for miscellaneous losses or the Disaster Exemption Law are ultimately case-by-case, at least judging from the above table, the amounts involved are not usually that large. In particular, for those on low incomes who do not usually pay income tax, there is no merit. Even for other taxpayers, though, rather than reductions in income tax, it may be thought that cash support payments under the Act Concerning Support for Reconstructing Livelihood of Disaster Victims[9], for disaster victims to rebuild and return to a normal life, are more likely to be important.

In the year 2004[10], in which the annual total of allowances for miscellaneous losses was greatest to date, dividing the total (8,057 million yen) by the number of recipients (15,212) gives an average allowance per recipient of around 530,000 yen. Assuming for a moment an allowance on income tax of 530,000 yen, the maximum relief on income tax including residence tax would be 265, 000 yen, but for most taxpayers the likely relief would be around 100,000 - 150,000 yen. However, high earners would benefit proportionately more from allowances for miscellaneous losses. For example, taxpayers with a total income of over 50 million yen in 2004 would have received an allowance for miscellaneous losses of 3.6 million yen per person, giving an effective reduction of 1.8 million yen in the tax burden.

III-1-2 The nature of allowances for miscellaneous losses

Allowances for miscellaneous losses apply to losses on "assets normally required for living". This rule, although seemingly innocuous at a glance, actually raises many fundamental points of debate on income taxation in general. Below, we briefly discuss[11] "private assets versus assets for commercial use" and "income as an index of taxability".

Allowances for miscellaneous losses are applied to losses against "assets normally required for living" (specifically, personal effects and real estate required for residence), and do not apply to assets that the taxpayer holds for commercial use. Although losses to commercial property resulting from a disaster are not expenses directly related to business purposes, allowances can apply to the loss of assets (Income Tax Act Article 51) as an essential expense against business income. Thus, obviously, allowances for miscellaneous losses do not apply to assets for commercial use. Disaster-related losses to private assets not essential for normal living may, as capital losses, be offset against capital gains (Income Tax Act, Article 62) but allowances for miscellaneous losses do not apply.

Even if a disaster causes losses to assets held privately for commercial use, they are counted as essential expenses against business income etc., so there is no need for allowances for miscellaneous losses to apply to them. From this it may be thought obvious that allowances for miscellaneous losses apply only to assets necessary for living. However, the restriction on the applicability of allowances for miscellaneous losses makes explicit the feature of the personal income tax system that personal assets are separated into private assets (so-called domestic assets) and assets for commercial use, and separately evaluated.[12]

Even if the value of assets for commercial use changes, the unrealized gains and unrealized losses are not liable to income tax, but depreciation is normally applied. The destruction of value by a disaster is calculated based on the sum remaining after depreciation. Naturally, since capital gains and capital losses arising from the transfer of assets for commercial use are taxable, allowance for losses caused by a disaster as essential expenses may be said to be consistent treatment.

In this regard, the tax treatment of private assets is different from that of assets for commercial use.

Firstly, income resulting from the transfer of assets that serve daily living such as furniture, clothing, etc. is not taxed, but neither are losses resulting from such transfers (Income Tax Act, Article 9). On the other hand, allowances for miscellaneous losses apply to assets usually required for living. Therefore, as pointed out by Sato (2001, p.29), "Although gains or losses on the transfer of personal effects required for normal living are said to be excluded from the calculation of income, that reality is only reflected in the calculation of income when the losses result from 'disasters' etc."

Next, among assets required for normal living, income or losses resulting from the transfer of residential buildings are taken into consideration for tax purposes, with the calculation being based on the purchase price after depreciation. However, when allowances for miscellaneous losses are applied, the amount of the loss is "calculated based on the asset value immediately prior to the loss in question" (Income Tax Act, Order for Enforcement, Article 206, Item 3). That is to say, the value of the miscellaneous losses is said to be calculated from the difference in asset values immediately before and immediately after the disaster. This fact shows that in the system of allowances for miscellaneous losses, the loss resulting from a disaster (or theft or embezzlement) receives a special, nonstandard treatment. Below, we return to the basics of the concept of income to discuss this problem.

The comprehensive concept of income is defined as the consumption during the tax period plus the change in net asset value over that period. Here, the change in net asset value is the net asset value at the end of the period minus that at the start of the period. Accordingly, if a disaster were to occur during the period and the taxpayer's asset value were to fall, the income as determined by asset valuations would fall by the same amount. (We can assume the amount by which the asset value fell as a result of the disaster is not consumed.) From this perspective, it appears to be theoretically correct that the miscellaneous losses be calculated from the difference between asset valuations before and after the disaster[13].

However, in actuality, the treatment of private assets for income tax purposes is radically different from the treatment assumed by a comprehensive income tax. As Sato (2001, p. 57-58) points out, the present income tax system includes many deviations from a comprehensive income tax described thus: "in general adopt a principle of realization, with imputed income untaxed, limited allowances for capital losses, and part of capital gains untaxed". Accordingly, the conclusion is that the system of allowances for miscellaneous losses, that reckons those losses from a comparison of asset valuations before and after a disaster, is "inconsistent with the framework of the current tax system". Thus the current tax system, despite not taxing the imputed income and unrealized gains that arise from "assets normally essential for living", and not taxing capital gains realized on transfers of personal property, in the case only of disaster (or theft or embezzlement), by reckoning losses from a comparison of valuations, allows a conspicuously favorable treatment.[14]

The manner in which such system of allowances for miscellaneous losses should be evaluated is a matter for debate. One interpretation, without worrying about the overall consistency of the tax system, is that the current system of allowances for miscellaneous losses is basically all that tax system measures can do to aid people who have suffered in a disaster.[15] If a basis exists on which to justify this type of system, it is presumably the adjustment (reduction) of the tax burden on taxpayers whose "taxability" has fallen as a result of the disaster. It also seems intuitively easy to accept the view that the loss in asset value due to the disaster corresponds to the fall in “taxability”. However, this concept of “taxability” is extremely vague, and it must be recognized that it provides only a fragile theoretical foundation.

In addition, even if there is a question concerning 'taxability', under the context of income tax, we could more or less maintain a debate on the subject. However, under the framework of taxation of consumption, a fall in taxability after a natural disaster is, in reality, difficult to systematically examine. Of course if one could base the taxation of consumption on an annual, accurately measured consumption figure, it might be possible to take measures to exempt the tax burden on the amount of consumption which the loss in asset value due to a disaster would presumably have given rise to. However, fundamentally this type of consumption taxation exists only in fantasy. Also, in this case too, the efficacy of tax burden reductions is something that emerges over an extended period, and substantial reductions in tax cannot be implemented in a consumption taxation framework immediately following a disaster. Indeed under the present consumption tax system it would be difficult to introduce tax burden reduction policies that would reflect a fall in asset values due to a disaster. In any case, it would be difficult to introduce something corresponding to the system of allowances for miscellaneous losses in a framework of consumption taxation.

There are other reasons why one cannot help but think that allowances for miscellaneous losses are a crude measure applied to reduce the tax burden on disaster-affected taxpayers in consideration of their “taxability”. Firstly, as described above, either allowances for miscellaneous losses or income tax exemption measures under the Disaster Exemption Law may be chosen. However, the provisions of the Disaster Exemption Law that can be substituted for allowances for miscellaneous losses, despite having an income limit, are crude aid measures that nevertheless simply reduce the amount of income tax by 25%, 50% or 100%. The allowances for miscellaneous losses, that can be selected and applied instead of the provisions of the Disaster Exemption Law, may themselves not be a very refined system. Secondly, as introduced by Sato (2001, p.53), after the Hanshin-Awaji Earthquake (the Kobe Earthquake), the tax office within the jurisdiction of the Osaka National Tax Bureau, in applying the allowances for miscellaneous losses, used an “easy guide to calculating losses on homes and furnishings” that is a precedent. Although this was a way of dealing with the abnormal situation of a large number of damage incidents over a wide area, it was nevertheless a rough way of calculating losses from income, number of cohabiting family members, and degree of damage (total loss, half loss etc.). That is, in this case, the allowances for miscellaneous losses were themselves applied on the basis of crude criteria.

From the above discussion of the nature of allowances for miscellaneous losses as an aid measure for taxpayers affected by disasters, it may be understood that aid measures for disaster victims tend to be implemented in quite a drastic fashion. As a result, although taxation policy particularly stresses theoretical consistency even within economic policy, economic aid measures for disaster victims are implemented that fail to satisfy consistency with the tax system as a whole. Of course, this need not necessarily be viewed only in a negative light. The position of disaster victims is deserving of sympathy, and the importance of disaster aid from the viewpoint of the fairness of economic aid to victims itself and the distribution of income cannot be denied. Then again, in the context of economic aid to disaster victims, one must be conscious of the existence of a tendency to lose sight of the theoretical foundations and consistency of policy.

III-2. Measures related to corporate income tax

In the case of corporate income taxation, there is no need to distinguish between "private assets" and "assets for commercial use", since all corporate assets are "assets for commercial use". Accordingly, for corporate income tax, a framework corresponding to income tax allowances for miscellaneous losses is not required. If a corporation writes off assets as a result of a disaster, the book value[16] immediately before the disaster plus the cost of disposal can be included in calculated losses. Thus if assets are wiped out by a disaster, the associated losses diminish the base for taxation of corporate income, and the tax burden is automatically reduced by the amount of the losses.

The cost of repairs to return assets damaged by a disaster to their pre-disaster condition can also be included as repair costs in calculations of losses. However, if the disaster is used as an opportunity to renew or upgrade equipment, the cost is counted as capital expenditure that does not count toward losses for the current year, but is subject to depreciation in subsequent years. For corporate income tax as for personal income tax, disaster-related losses and deficits, even if not declared on a blue tax return, may be rolled over for up to 7 years (Corporation Tax Act, Article 58, Item 1) [17] .

As above, in the case of corporate income tax, whether a reduction in asset values results from a disaster or from some other cause, since the mechanism for taking it into account in income calculations is provided more or less automatically, special regulations dealing specifically with disasters are in principle not required. In reality, the only taxes that are the object of the disaster exemption law are the personal income tax, inheritance tax, and specific commodity taxes (related to liquor, tobacco, gasoline etc.); corporation tax and consumption tax are not within its scope[18].

Additionally, even if one says that corporate income tax automatically takes disaster-related losses into account, this is not necessarily to say that the corporate income tax system aims to provide economic aid to corporations that suffer a blow from a disaster. Simply, if taxable corporate income falls as the result of a disaster, the burden of corporate income tax will also fall, fundamentally just as if taxable corporate income falls as the result of business mistakes, then the burden of corporate income tax will also fall. However, as above, if a deficit occurs, even if declared on a white tax return, points relating to how disaster-related losses and deficits may be rolled over are different from normal deficits.

Fundamentally, there is a basic problem regarding whether or not corporations that have suffered from a disaster can be aided through reductions in corporate income tax. Obviously, the burden of corporate income tax is carried not by a corporation itself, but by associated parties such as shareholders. If corporate income tax is reduced for corporations that suffer a disaster, that might protect the share price, but shareholders do not necessarily live in the affected areas, so the reductions in corporate income tax would not necessarily be aiding the affected area or the people who have suffered the disaster. It is not simple to use corporate income tax as a policy measure to aid disaster-affected areas and people. Then again, it is not entirely unthinkable that corporate income tax measures could be designed to deliver economic aid to disaster-affected areas and people. For example, under the “Temporary Exceptional Measures in National Tax Law for Hanshin-Awaji Earthquake Victims etc.”, as an exception to corporate income tax law, disaster victims were entitled to additional depreciation deductions on rental accommodation and special depreciation rates on replacement assets. These measures indirectly reduced the cost of rent and promoted continued industrial activity and employment in disaster-affected areas, and may have constituted economic aid to those areas and to people affected by the disaster. However, it is not clear how effective such indirect measures can be expected to be. Corporate income tax is essentially a tax levied with attention to the industrial activity of corporations without regard to the taxability of any individual, and the implementation of economic aid policies based on reductions in corporate income tax burden has problematic aspects.[19]

III-3. Measures related to consumption taxes and property taxes

Post-disaster relief measures are, to some extent, applied to taxes other than income taxes. Consumption tax is among such taxes but has its limitations when taken as a special aid measure after a disaster. To deal with this limit, specific measures need to be taken with specific commodity taxes. The contrast between consumption tax and specific commodity taxes are based on fundamental difference between frameworks of these taxes. Also, taxation on property can, although with limits, play a certain role for post-disaster financial aid.

III-3-1. Consumption Tax

It is generally difficult to use consumption tax as a post-disaster relief measure taken to directly aid individuals affected by a disaster. Firstly, there is a question regarding whether or not it is possible to reduce consumption tax burden for disaster victims who are also consumers. To do so, business operators, who are to pay consumption tax, need to check applicability of their customers for the reductions in consumption tax. It may be possible for a small local retailer to check each customer's applicability, but disaster victims would also purchase goods and services from other types of businesses. For example it is presumed impossible, due to excessive cost, for a mail-order store to check whether or not its customer is affected by a disaster. In addition, there would be people who purchase a product under the name of a disaster victim and then make profits through re-selling of the products to other consumers. In any case, it is extremely difficult to reduce consumption tax burden for disaster victims within the framework of consumption tax, and if such reduction measure is forcefully introduced, the efficacy of the consumption tax system would be diminished. This is because in the consumption tax framework, the sales amount made by a business operator is used as a proxy variable of consumptions and the corresponding amount of consumption tax is collected from the business operator.[20]

The next question is whether or not reductions in consumption tax can aid business operators located in the affected areas. Such idea contains a fundamental flaw, since consumers, not business operators, purchase goods and services offered by business operators and are thereby expected to bear the tax burdens in the economical sense. This is the same point of discussion as the case of corporation tax discussed above. Actually, consumption tax and corporation tax are not included on a list of tax items subject to the disaster exemption law that is to aid disaster victims through reductions of their tax burdens.

There is also another system that automatically adjusts the amount of consumption tax to be paid by business operators affected by a disaster. For example, if a business operator cannot deliver goods damaged by a disaster, sales would decrease, resulting in a decrease in the amount of consumption tax to be paid. Also, if a disaster causes damages to a business operator's production facility, the amount of consumption tax to be paid by the business operator would decrease as a result of the sales decrease. On the other hand, the amount of consumption tax included in the purchase price of products or facilities was already reimbursed to the business operator through the input tax credit system. Accordingly, even without any special adjustment measures, the amount of consumption tax to be paid by a business operator would automatically be adjusted as result of reduction by the amount of sales decrease due to a disaster.

Post-disaster relief measures also exist as an exception in the current consumption tax system, however. Specifically, it is allowed for disaster-affected small business operators to flexibly decide whether or not to choose the simplified taxation system on the consumption tax. For example, if a business owner had its equipment damaged by a disaster and selects the simplified taxation system, he/she cannot reclaim the amount of consumption tax paid already upon purchase of the equipment, through the purchase tax credit. In such a case, a business operator who has already selected the simplified taxation system can cancel the selection. This system was introduced upon tax system revision in 2006 in which the disaster-related taxation system was reorganized. The simplified taxation system was initially established with a view to helping small and medium sized business operators (with taxable sales of below 50 million yen) in reducing administrative workload, but it contains a risk of being used for tax avoidance if business operators are allowed to select it for use subsequent to the event. Thus filing advance notice is required for business operators to use the simplified taxation system, but as an exception, they are allowed to select it subsequently after natural disasters.

III-3-2.Specific commodity taxes

Regarding the specific commodity taxes (liquor tax, tobacco tax, gasoline-related taxes), if a manufacturer or a retailer affected by a disaster cannot provide products for the initially intended use although the products are taxed already, due to damage or loss of the products caused by the disaster, the tax amount imposed on the concerned products can be deducted from the total tax amount to be paid after the date of disaster (Disaster Exemption Law, Article 7). The reason why such measures are required is because specific commodity taxes are imposed on goods when the goods are shipped out by a manufacturer, and, unlike the case of consumption tax, no input tax credit is applied thereafter. Accordingly, without such measures, manufacturers and retailers would have to bear the specific consumption tax burdens even if it is impossible for them to sell the goods (i.e. transfer the tax burdens to consumers).

III-3-3.Taxation on properties

When a disaster causes damages or losses to property obtained as inheritance or gifts, the amount of losses is deducted upon calculation of the taxable base of inheritance tax or gift tax, as stipulated in the Disaster Exemption Law.

Reduction and exemption measures also apply to fixed property tax (a tax collected by local municipalities) in the event of a disaster. Specific details of the reduction and exemption measures are not described in the Local Tax Act which only regulates in Article 367 that a municipal mayor can, under an ordinance, provide reductions and/or exemptions in fixed property tax for those who are approved as needing such aid due to a disaster. In actuality, guidance from the Ministry of Home Affairs (now the Ministry of Internal Affairs and Communications), depending on the damage, regulates 40% to 100% of reductions and exemptions in fixed property tax, as "examples of implementation of local tax reduction and exemption measures etc. for disaster victims".[21]

III-4.Disaster and the timing of taxation

Timing of taxation is rearranged (deferment) as a relief measure because confusion at the time of disaster would make it difficult for taxpayers to pay tax and it is necessary to immediately secure an easily accessible liquid funding. This can be considered as a kind of post-disaster measure to reduce tax burdens, since no overdue tax, etc. would be imposed for the delay in tax payment. With limited reduction of tax revenue equal to the amount of interest for the delay, this provides disaster-affected taxpayers with liquidity at hand. In other words, this measure is significant in leveling out disaster victims' consumptions, rather than offering income insurance for victims who experienced damages and losses resulting from the disaster. In addition, relief measures allowing deferment of tax payment may have little or no adverse impact on the effectiveness of prior incentives which encourage potential victims to take precautions a natural disaster. Adjustment of taxation timing can essentially be considered an appropriate and useful measure in the time of a disaster.

Specifically, as a first measure to adjust the timing of taxation, the due date for declaration or payment of national tax can be extended when "inevitable reason such as a disaster, etc." exists (Act on General Rules for National Taxes, Article 11).[22] One might wonder how much merit can be expected from several months' deferment of tax declaration and payment. However, if such deferment does not exist and one cannot file tax declaration or make a tax payment after the due date because of a disaster, overdue tax or additional taxes will be imposed. Therefore it can be said that this is a necessary and important system.

Secondly, a taxpayer who has suffered a considerable loss due to a disaster can, with an application filed by the taxpayer within two months from the day on which such disaster ended, be granted a grace of tax payment for up to one year from the due date for payment (Act on General Rules for National Taxes, Articles 46). Unlike extension of the due date, this grace period of tax payment is intended to postpone tax payment or collection when the initial due date of tax payment is already past.[23] The Local Tax Act also stipulates regulations similar to above (Local Tax Act, Article 15).

In the case of Hanshin-Awaji (Kobe) Earthquake (Jan. 1995), it was decided that allowances for miscellaneous losses resulting from the earthquake could apply to income from 1994. It can be considered that this measure also helped in adjusting timing of taxation t at the time of the disaster. If this measure was not taken, victims of the earthquake would have had to wait for one year until they received the merit from tax reduction through the allowances for miscellaneous losses. It can also be guessed from the actual applications shown below that the effect of allowances for miscellaneous losses started appearing from 1994 income.

Allowances for miscellaneous losses	1993	1994	1995
Number of persons	7587	9106	9024
Amount (million yen)	2889	3638	3559

(Source: National Tax Agency)

III-5.Disaster, local tax and local government finance

Each disaster-related measure in relation to the local tax system was described above to some extent. Below we will discuss problems in relation to local government finance. Natural disasters such as earthquakes normally cause damages concentrated in particular areas. Accordingly, in order to protect local residents, local governments are expected to play a major role in taking advance precaution against natural disasters and in response to a natural disaster. Of course it is critical that local residents make efforts to help themselves. An advantage for local governments to respond independently against natural disasters is that local governments are not vertically compartmentalized like the central bureaucracy and have comprehensive functions in taxation, expenditures (of subsidies, etc.), and regulations (reviewing building standards, etc.). However, there is the problem that local governments would not make sufficient efforts to help themselves if resources from the central government are funded for advance precautions and post-disaster relief measures. Specifically, incentives to encourage local governments to make efforts to help themselves would be diminished, not only because post-disaster financial supports exert adverse influence on prior incentives, but because measures taken prior and subsequent to a natural disaster would be affected by expectations that the local government would have for financial aid from the central government.

As for pre-disaster measures, fixed property tax can be reduced as a part of promotion of earthquake-proofing alterations through the taxation system. It is desirable that a local government can introduce such pre-disaster measures in local personal income tax etc. based upon its own decision. By securing resources through extra taxation in local personal income tax and business tax, local governments can also clearly express an attitude that they intend to take initiatives for pre-disaster precautions for localities. On the contrary, if local governments depend on resources from the central government for introduction of tax reduction measures (incentives for precautions), from the viewpoint of residents, it is difficult to check and for the local governing body that implements such tax reduction, their checking procedures will become less strict. There is therefore a risk that the tax reduction becomes hardly different from grants provided to construction contractors.

Even when a local government provides reductions and exemptions in local tax as post-disaster relief measures for disaster-affected local residents, the scope of the policy differs depending on whether the local government itself raises necessary resources from the local residents, or if the resources are funded by the central government. In the former case, although the problem remains that post-disaster tax reduction measures would exert adverse influence on prior incentives for local residents to make efforts for pre-disaster preparedness, the measure can be considered voluntary efforts made by the local government of disaster-affected areas. In the latter case, in addition to moral hazard at the level of local residents, another moral hazard would arise at the level of the local government as it becomes more dependent on the central government and makes less effort to support itself.

In reality after a natural disaster, financial support from the central government is more important than tax reduction. [24] It is worth paying attention to the fact that local governments with weaker taxation base would receive particularly good financial supports from the central government. For example, applicability of a special financial support for recovery of extremely affected areas is determined based on whether the post-disaster recovery cost exceeds a certain proportion of the local government's standard tax income. Local prefectures are to bear rescue costs in accordance with the Disaster Relief Act that stipulates urgent response in the time of a disaster, but the central government finances 80% of a portion of the rescue cost that is above 2% of the forecasted standard local tax income, and 90% of a portion above 4%, respectively.[25]

When affected by a disaster, a local government needs to raise resources for recovery of the areas from damages resulting from a disaster. It is probably desirable that such resources be raised by the local government itself through bond issuance or extra taxation rather than solely depending on grants and subsidies from the central government. For example, after the September 11 attacks in New York in 2001, the main financial measures that New York State took for New York City were to permit flexible bond issuance and tax increases rather than direct financial support.[26]

Japan also has a special exception of bond issuance by means of "disaster-related municipal bonds". In addition, there are frameworks such as disaster-related special subsidy tax allocation and upfront allocation of ordinary subsidy tax allocation to affected local bodies, but there is no framework under which a local government affected by a natural disaster can increase the local tax. One would consider it basically wrong that a local government in the affected areas increases local tax. In Japan also, the Tokyo Metropolitan Government provided its own resources as financial support for Miyake Island following a volcanic eruption on Miyake Island in 2000. Given that Tokyo is not a receiving body of a portion of the national tax revenue allocated to local governments, the efficacy of this financial relief is, for Tokyo residents, equivalent to the case where the Tokyo government increases the local tax. Of course this would have been just a special case where the disaster-affected area was a part of municipal Tokyo, which has abundant financial resources.

However, regardless of the financial status of the affected areas, it is natural that local government of the disaster-affected areas raises resources through tax increases (extra taxation) to aid victims and assist in the recovery of the areas. Rather, the question is what local governments should be in the age of decentralization. In this case, local residents of the same local government who are not affected by the disaster would bear tax burdens through the extra taxation to aid victims.[27] The extra taxation should be implemented in the local tax such as fixed property tax on house lands and houses, of which local residents other than those directly affected by the disaster would assume tax burdens. If the extra taxation is applied to business tax etc. for which the bearer of the tax burden is not clear, local residents cannot select appropriate measures against a disaster through consideration of burdens and benefits for themselves. In any case, from the viewpoint of promoting local autonomy, it is desirable to establish a framework in advance (pre-disaster), where local governments can raise resources in the time of a disaster for victim relief and recovery of the local economy through extra taxation.

III-6. Measures Prior and Subsequent to a Natural Disaster

In Section III-1 of this paper, discussion was made that the allowances for miscellaneous losses are not theoretically consistent with other frameworks under the income taxation system. The larger problem is that even though post-disaster relief measures such as the allowances for miscellaneous losses (and reductions and exemptions in income tax in accordance with the disaster exemption law) is implemented to diminish economic damages resulting from a disaster, from the viewpoint of pre-disaster, it also has the same effect as providing free insurance to taxpayers.[28] Prior incentives to encourage the uptake of earthquake insurance will be diminished for taxpayers who are offered earthquake insurance free of charge. In addition, the negative efficacy of the incentive becomes larger since the amount of insurance paid out from the earthquake insurance is deducted from the amount of the allowances for miscellaneous losses. Namely, taxation measures for post-disaster relief reduce incentives to encourage taxpayers to buy earthquake insurance. The more sufficient post-disaster relief measures are, the less effective incentives to encourage disaster preparedness will become, and thus the pre-disaster measures, such as taxation system to promote earthquake-proofing alterations, would also become less effective. As seen above, it must be said that there is a conflict between pre-disaster incentives measures and post-disaster relief measures.

The relationship between the allowances for miscellaneous losses and earthquake insurance will be discussed below through comparison with an example using simple figures. Assuming that taxpayers' marginal tax rate is always 50%; under the probability of 1% that an earthquake causing one million yen of damage would occur and that if an insurance premium of 20,000 yen has been paid, one million yen insurance coverage will be paid out. In this case, a taxpayer will buy earthquake insurance if the insurance premium is 20,000 yen, but will not do so if the premium is over 20,000 yen, even if it exceeds by 1 yen. Here, if the allowances for miscellaneous losses are applied and the damage estimate when no insurance is covered reaches 500,000 yen, the taxpayer does not buy the insurance.[29] This case can be expressed by a simple equation as follows, with taxpayers' utility function being U ( ):

If

$1\% \times U(-1{,}000{,}000) + 99\% \times U(0) = U(-20{,}000)$,

Then

$1\% \times U(-500{,}000) + 99\% \times U(0) > U(-20{,}000)$.

However, post-disaster relief measures cannot simply be determined as undesirable policies only because they exert adverse influence (moral hazard). That is because post-disaster relief should also be considered from the viewpoint of fairness, i.e., how societies (other taxpayers) should respond to those who have unfortunately been affected by a disaster. It can also be said that if post-disaster relief measures are to be taken from the viewpoint of fair income redistribution, it would inevitably inhibit efficiency. However, in any case, it is important to realize that, although the issue of moral hazard should never be ignored upon a discussion of fairness, the viewpoint of efficiency is more likely to be neglected in relief measures for disaster victims than in the case of income redistribution policies in ordinary times.

Also, measures in relation to the taxation system are only complementary post-disaster relief measures. Since the efficacy of tax burden reductions applies to taxpayers only, preferential tax treatment provides no benefit to those with low incomes who do not pay tax. High income earners aside, the efficacy of the post-disaster reductions in tax burdens taken as a relief measure is limited in money terms. Thus, measures related to expenditures are required as stronger relief measures. Of course the moral hazard issue also arises in the case of relief measures in the form of expenditures.

The moral hazard issue would arise not only at a personal level but also at the level of local governments. Post-disaster relief measures taken for supporting local governments have risks of offsetting incentives for local governments' efforts to protect localities. It is necessary, by avoiding mixing relief measures for disaster affected areas and adjustment of resources between local governments, to encourage local governments including those with less resources to help themselves through taking advance disaster precautions.

IV. Conclusion: Role of taxation policy against natural disasters

This paper has examined disaster-related measures in relation to the taxation system, where such measures that can be taken respectively before and after a natural disaster are considered separately. Then, it was pointed out that post-disaster measures for the economic relief to victims present a moral hazard, cancelling out the effects of prior measures to promote disaster preparedness. Of course, post-disaster economic aid itself may be carried out from the point of view of income distribution and must be considered independently of disaster preparedness incentives. It is neither necessarily desirable nor realistic to entirely abolish all post-disaster economic aid measures. However, it needs to be recognized that economic disaster relief effectively plays the role of insurance provided at no cost by public bodies, and that in a political context it is difficult to put a brake on the expansion of economic disaster relief.

As another point of discussion, it is also important to recognize that there is a limit to the role that can be played by disaster-related taxation measures, be they prior provision of incentives or post-disaster economic relief. Reductions in the tax burden affect only those who pay tax, and there are limits on the size of possible reductions. It is obvious that a comprehensive view of disaster-related measures, encompassing budget expenditure and regulations, is required. In practice cash support expenditure measures are more often likely to be important than taxation measures.

By way of post-disaster taxation measures that exert no adverse influence on prior incentives, it may be that restrictions imposed with a view to preventing tax evasion can be relaxed in their application to individual victims and corporations in the affected areas. For example, normally in an asset-building pension, tax-related merits will not apply to those who withdraw cash for any purpose other than pension usage. In addition, penalty in the form of tax on interest for the last 5 years will be imposed. However, such penalties will be exempted in the case of "inevitable reasons" such as natural disasters. A similar character is seen in that the flexible selection of the simplified taxation system of the consumption tax can be made after a natural disaster occurs. In the event of natural disasters occurring independent of taxpayers' intention, it is reasonable to apply restrictions flexibly that were initially imposed with a view to preventing tax evasion.

Finally, in order for local governments to enact policies appropriate in the age of decentralization to allow “regions to take care of themselves”, it is desirable that they introduce regulations in advance specifying that in the event of a disaster, they will automatically levy extra local taxes. The resources obtained through this kind of extra tax would be used for individuals and localities affected by the disaster, and reconstruction plans could be made that would not depend solely on the support of central government. Local governments would also be expected to play a larger role in providing incentives to encourage residents’ efforts to help themselves through taking advance disaster precautions. In particular, since local government is not vertically compartmentalized like the central bureaucracy, it should be better able to implement comprehensive measures. In this case also, when local governments need resources for such economic assistance (subsidies and tax reductions) for those who make efforts to help themselves by taking advance disaster precautions, it is desirable that such resources be raised by local governments rather than depending on grants and subsidies from the central government.

In any event, if one considers that disaster preparation and response are major responsibilities of public bodies, a key function of taxation in relation to natural disasters must be to secure the resources necessary for those public bodies to fulfill said responsibilities. This applies not only to individual local governments, but to the country as a whole.

Footnotes

1. We discuss the ambiguity of the concept of “taxability” in Section III-1-2 below.
2. For example, although in Tokyo the annual premium payable by someone living in a wooden house for 30 million yen of earthquake insurance coverage is approximately 94,000 yen, if that person’s marginal income tax rate is 20%, the cost reduction is 10,000 yen, and even adding the cost reduction associated with the earthquake insurance premium allowance on local personal income tax, for a marginal personal residence tax rate of 10%, this only amounts to 12,500 yen. In this case the overall reduction due to the earthquake insurance premium allowance is some 13%. Under the same conditions, since people living in non-wooden houses face annual insurance premiums of around 50,000 yen, the cost reduction associated with earthquake insurance premium allowances on income and personal residence taxes is about 25%.
3. For example, if the probability of a disaster occurring is small, in some cases it has been reported that people ignore the possibility and/or underestimate their losses in the event of a disaster occurring.
4. In the USA, there has been an argument of this kind about the relationship between disasters and taxation. For example see Wildasin (2006).
5. Article 2 of the Disaster Exemption Law specifies that it will apply only to those who are not in receipt of allowances for miscellaneous losses.
6. Losses resulting from a disaster may be rolled over for 3 years even in the case of a white tax return.
7. Historically the upper limit was 6 million yen, but this was raised to 10 million yen following the Hanshin-Awaji Earthquake. The object of reductions and exemptions under the Disaster Exemption Law is (national) income tax. Reductions and exemptions from local personal income tax are only covered under Articles 323 and 45 of the Local Tax Act by general regulations. In practice, guidance to prefectural governors from the administrative vice-minister of the Ministry of Home Affairs (now the Ministry of Internal Affairs and Communications) contained “examples of implementation of local tax reduction and exemption measures etc. for disaster victims” that were fundamentally similar to the treatment of income tax reduction under the Disaster Exemption Law. It appears that these reductions and exemptions from local personal income tax apply even if allowances against local personal income tax in respect tp miscellaneous losses are being claimed.
8. For incomes over 10 million yen the Disaster Exemption Law does not apply. Additionally, for extremely high-value losses, allowances for miscellaneous losses apply against not only income in the current year but may also be rolled over to apply in the following 3 years, resulting in a considerably larger tax reduction effect than the Disaster Exemption Law which applies only in a single financial year.
9. For details see Tajika and Miyazaki (2008).
10. In 2004, in addition to the Niigata-Chuetsu Earthquake there was also damage resulting from Tropical Storm #23.

11. The following discussion owes much to Sato (2001).
12. In general, although personal private assets (particularly, those other than financial assets) do not come with systematic data on assets or a balance sheet, allowances for miscellaneous losses are a measure on the adjusted personal private asset value. It may be thought that the difficulties in its application spring from this problem.
13. From the perspective of comprehensive income tax, it is an error to limit the fall in asset values to “assets normally essential for living”; a fall in asset values should be counted as negative income irrespective of whether or not they are essential for living.
14. Under policy theory that stresses the consistency of the system, as pointed out by Sato (2001), the scope of causes of miscellaneous losses (should it be limited to disaster, theft and embezzlement?) and the scope of assets to which they apply (should it be limited to assets “normally essential for living”, and even if so, what is the criterion for that assessment?) require reevaluation. Also, even if allowances for miscellaneous losses are made, the basis for calculating them should consider the adjustment value immediately prior to the disaster rather than the market valuation immediately prior to the disaster. This is because imputed income arising from private assets for living is not taxed, so if the depreciation component (corresponding to imputed income) is not temporarily subtracted from the loss allowance, it is effectively counted twice in the reckoning of expenses. Also, in the case when a capital gain resulted in a high valuation at the time of the disaster, beyond the fact that the hidden gain made is not taxed, it cannot be said to be consistent treatment to count the capital gain as a loss allowance.
15. If absolute maximum effort were to be made, the subtraction of 10% of income from the amount of the loss should be abolished along with the limit on the roll-over period.
16. This is purely a book value, not a market valuation. If losses are temporarily calculated based on valuations, and the valuation price is larger than the book value, depreciation that has already been paid is recognized as having expensed twice.
17. In the case of corporation tax, unlike income tax, in general deficits can be rolled over for up to 7 years.
18. See Section III-3-1 regarding the nature of consumption tax in relation to disasters.
19. See Watanabe (2008) for a general discussion of the nature of corporation tax.
20. Along with the input tax credit, this system is the ‘core’ for the consumption tax to work in a neutral and efficient way as a tax on consumptions.
21. "Reduction and exemption measures in local tax for disaster victims" (as of April 1, 2000, issue 12 of Jichi Zei ki, notice from the administrative vice minister of the Ministry of Home Affairs to governors of prefectures).
22. In the case of Chuetsu-oki earthquake in 2007, for example, due dates of national tax declaration etc. originally between July 16 and November 12 were extended until November 13 for 3 municipal bodies including Kashiwazaki-shi in Niigata prefecture.
23. Kaneko (2007), p.671.
24. For details see Tajika and Miyazaki (2008).

25. 50% of other portions are also funded from the national treasury. It is compulsory for prefectures to accumulate fund s for post-disaster relief, but the amount is small.
26. See Chernick and Haughwout (2006). "The main state fiscal response to 9/11 was to grant New York City the legal authority to raise income and sales tax rates and issue additional long–term debt for operating expenses." (p. 570). In addition, the federal government provided New York City with direct financial support and tax reduction for local companies in the Manhattan area.
27. Of course it can be difficult for a local government to apply extra taxation depending on the scale of damages and affected areas. In general, also, it may be more appropriate that local prefectures impose extra tax, rather than municipal bodies.
28. Klein, et al. (2006; p.342) discusses that the American exemption system for casualty loss is equivalent to providing taxpayers with an insurance free of charge.
29. Note that the allowances for miscellaneous losses will not apply if you are in an insurance scheme, since insurance reimbursement sufficient to cover the damage amount will be paid out in the event of a disaster. Although the efficacy of tax reductions in insurance premiums is not considered here, the same conclusion can be reached even if such reductions are taken into account.

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