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Natural Hazard Research

**Insurance and Natural Disasters:
An Examination of
the New Zealand Earthquake
and War Damage Commission**

**Arnold R. Parr
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Christchurch, New Zealand**

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Preface

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INTRODUCTION

In New Zealand,¹ beginning in 1944 and continuing up to the present, a national compulsory program of earthquake insurance has operated. In 1949 the program was extended to cover extraordinary disaster storm and flood damage. Over the years coverage has been extended to include landslip, volcanic eruption, and hydro-thermal activity. This paper analyses New Zealand's disaster insurance program and its success in mitigating natural disasters.

ORIGINS AND FORMATION

Officially, the disaster insurance program was created when the Earthquake and War Damage Act was passed by the New Zealand Parliament in 1944. However, the program actually arose out of developments that had started in 1941 when the War Damage Act was passed by Parliament. This act was modeled on the British example, which had been passed earlier in the same year, but some differences existed. Both acts established war damage commissions. Yet, in Britain the commission was empowered to levy a charge against the assessed value of all property in England and Wales, whereas New Zealand could levy on buildings only, excluding land and property such as fences and perimeter walls, based on the value assessed for fire insurance. In Britain the rate of levy was two shillings in the pound for buildings and six pence in the pound for all open and agricultural land; in New Zealand the rate of levy was five shillings per 100 pounds of fire insurance coverage, or \$.25 per \$100 (NZ). Commission funds in both societies were to be used for compensation for war damage (O'Riordan, 1971:4-7).

The most important aspect of the creation of the Earthquake and War Damage Commission is that it occurred during a period of international crisis. Ironically, a situation of stress that directly affected New Zealand, the second World War, was the setting in which the earthquake insurance program emerged.

1. New Zealand has a population of 3,500,000. There are several pockets of concentration, with two-thirds of the population living in the region surrounding Hamilton and Auckland. The land area is 151,215 square kilometers in the South Island and 115,777 in the North Island. See Appendix A.

The national earthquake insurance program was a war-time development for New Zealand.² In a national emergency, sectional interests in a society are often downgraded for the national interest. In the early years of the war, there was considerable overall consensus, solidarity, and unity in New Zealand. This was conducive to the emergence of a disaster fund that was based on equity of costs and benefits. Thus, the war initially produced and then led to the consolidation of the fund that became a means of reconstruction after earthquakes and other disasters.

Developments in New Zealand over war damage compensation were at least initially a result of diffusion from Britain,³ but this is not a complete explanation for the New Zealand War Damage Commission. The British model did not diffuse to Australia, for example, suggesting that the situation was more conducive for its adoption in New Zealand. New Zealand adopted it for several reasons: first, economic imperatives, that is trade dependence on Britain; second, its isolation as an island nation and the geological and physical features as part of the Pacific Rim of Fire⁴; and third, its small population.

Nevertheless, egalitarianism, especially at the ideological level, has long been considered a major value of New Zealand society; thus, the New Zealand disaster insurance program was based on ideological commitment to equity. This was first manifested in the notion that the costs of compensation for war damage were to be shared by all property owners. As the program was systematically expanded to encompass earthquake and general disaster insurance, the commission persisted with the philosophy of spreading the risk geographically over as many communities as possible and also over several years.

Spreading the risk is a collective strategy for achieving equity of costs and benefits. The operation of the program over a long period of time disperses the costs and permits the accumulation of funds. A pool of accumulated funds is then available for widespread dissemination when a major disaster occurs. The compulsory nature of the program achieves equity by assuring the dispersion of costs over the entire population.

2. New Zealand entered World War II on 3 September, 1939.

3. Japan did not enter World War II until December 7, 1941. Since this is after the War Damage Commission was established, imminent threat of invasion probably did not figure as large for New Zealand as it did for Britain when it came to establishing the War Damage Commission.

4. See Appendix B.

The earthquake insurance program in New Zealand originated as a state initiated and controlled enterprise. New Zealand, with a documented history of considerable state involvement in social life, particularly in the area of national economic policies and developments, had a government in the early 1940s that was prepared to establish a national, compulsory earthquake insurance program, and furthermore, to guarantee all earthquake insurance issued by the Earthquake and War Damage Commission.⁵

From the very beginning, the War Damage Act was oriented toward general disaster coverage. The introduction of a national earthquake insurance program in New Zealand was foreshadowed in October 1941 during the parliamentary debates over the War Damage Act. In these debates, there was discussion about the use of surplus funds for covering other disasters, and coverage of earthquakes was specifically mentioned. It was decided "that any surplus in the fund should be set aside to meet any disaster that might arise, such as an earthquake" (Walter Nash, House of Representatives Debates, 1941).

Refunding to premium payers any surplus in the fund at the end of the war was considered, but discarded in favor of making grants to persons who have had "damage done to their property as a result of earthquakes or other disasters" (Wilson, Leader of Council, Legislative Council Debates, 1941). Thus, the War Damage Fund was viewed from its very beginnings as a general disaster fund.

MAIN DEVELOPMENTS

In this section of the paper the main developments during the 50-year operation of the Earthquake and War Damage Commission will be outlined.

Accumulation of Funds

Only an extremely limited reserve of funds has accumulated for the Earthquake and War Damage Commission over its 50-year history. One factor largely accounts for the limited reserves—the premium rate has been very low during all of the commission's existence except for its first four years.

5. A Labor Government with a manifesto of social democracy, social welfare, and social justice was in power.

By 1944, when the War Damage Act of 1941 was repealed and replaced by the Earthquake and War Damage Act, the Commission fund had accumulated to \$7,944,956 (NZ). The premium rate for these first four years was \$.25 for every \$100 worth of fire insurance and there were few claims on the fund because New Zealand experienced little war damage. Since then the premium rate has been very low, \$.05 for \$100 of coverage, and the rate has remained unchanged up to the present.

The premium rate is uniform throughout New Zealand; there is no variation from one region to another. All parts of society are treated as of equal risk and insured property is assessed only in terms of fire risk, because, from its beginnings, the New Zealand disaster insurance program has been piggy-backed onto fire insurance.

Extension of Coverage

The disaster insurance program has been extended on a number of occasions to cover a greater range of natural disasters. For the first four years it covered only war damage, in the next five years it also covered earthquake damage, and in 1949 it broadened coverage considerably to include extraordinary disaster flood and storm damage. A separate account, the Disaster Fund, was created by diverting one-tenth of the premium levy from the Earthquake Fund. Since 1949 coverage has been further extended to include landslip, volcanic eruption, and hydro-thermal activity. Tsunami and fire damage are covered when they result from the disasters covered by the commission.

Disaster coverage has always applied to any property insured for fire, including such things as home contents and cars. By the 1980s, the Earthquake and War Damage Commission was operating under a comprehensive and encompassing program regarding the type of natural disasters and property covered.

Disaster Claims

The Earthquake and War Damage Commission has always had sufficient funds to cover claims. But from 1944 to 1980 the reserve funds have never accumulated a ratio of reserves to the amount insured that was

better than 86%; this occurred in 1972.⁶ Reserve funds were heavily drawn upon by claims in the latter part of the 1980s: claims in 1986-87 totaled \$125,678,438 (NZ) as a result of an earthquake in the Bay of Plenty region. The lowest ratio (15%) of reserve funds to the amount insured occurred in 1989.

The claims associated with specific earthquake disasters have produced the heaviest demand upon reserve funds.⁷ For example, in 1969 the claims amounted to \$2,573,321 (NZ) as a result of the 1968 Inangahua earthquake. Prior to that disaster, the highest amount of claims for any particular year had been only \$248,224 (in 1963). As noted above, the amount of claims associated with the last significant earthquake disaster was in excess of \$125 million.

Review of the Earthquake and War Damage Commission

The Earthquake and War Damage Commission has not changed drastically during its 50 years, but within the last five years some proposals for radical change have been made. The authority for the commission, the Earthquake and War Damage Act and Regulations, has been amended and consolidated on a number of occasions, but these legislative changes have had only limited significance for commission functions. As recently as 1980 it was observed that the changes illustrate the somewhat piecemeal way in which the legislation has grown to meet a perception of public demand for an increased measure of cover (Commission of Inquiry into the Abbotsford Landslip Disaster, 1980:154).

The recent proposals for radical change have arisen in connection with the review during the latter part of the 1980s of the Earthquake and War Damage Commission. Prior to this review, the commission came under close scrutiny when the Commission of Inquiry into the 1979 Abbotsford Landslip Disaster examined its insurance. In making recommendations for changes to the existing Earthquake and War Damage Commission, the Inquiry Commission took the position that "it may . . . be possible to contrive a scheme which is a . . . kind of pragmatically constructed compromise designed to produce optimum social justice, that has been so

6. See Appendix C.

7. See Appendix D.

typical in New Zealand's legislative history" (Commission of Inquiry, p.152). The compromise should be between a form of true commercial insurance based on market forces and a form of social insurance that is at least partly carried by the whole society over several years.⁸ To achieve this compromise, the Commission of Inquiry made a number of major recommendations:

1. To limit the divergence between indemnity and replacement values and reduce instances of under-insurance and over-insurance, premiums should be assessed on a "declaration of value" basis. The insured should be required to make a declaration as the maximum foreseeable insured loss under the policy, and the premium should be calculated on the basis of the declared amount that would also provide the maximum limit of coverage.
2. Residential property should be treated differently from commercial and industrial property, and only indemnity cover should be provided for commercial and industrial property.
3. On the premise that the Earthquake and War Damage Commission should provide cover only for those specified risks for which cover is not readily available from the insurance industry, it was recommended that earthquake damage, war damage, volcanic eruption, and disaster damage caused by hydro-thermal activity, landslide damage from whatever cause, erosion damage, and damage by action of the sea should be covered. Storm and flood damage were not to be included because of availability of coverage from the insurance industry.
4. Coverage should extend to damage of buildings, personal property, and loss of use of land. In the case of the latter, it was recommended that the premium collecting mechanism should be through local authorities who would collect them as part of the rating demand and as an annual premium from each landowner, based on the unimproved value of the land.

8. The Commission of Inquiry favors a compromise because it assumes the effects of some catastrophic disasters cannot be fully mitigated. The commission states: "It has to be accepted, we believe, that the Earthquake and War Damage Commission, even with the full backing of the consolidated fund, cannot provide full cover in all circumstances, especially in the event of major catastrophes. The capacity of the fund would never be sufficient to meet all the contingencies and the economic cost of full compensation on a replacement basis would, in the event of major catastrophe, be too much even for the government to bear" (1980:159).

5. The Earthquake and War Damage Commission should have the right to charge differential rates and exercise this right in individual risks and high risk areas.

Although none of these recommendations was implemented immediately, it is important to recognize their existence. The more formal review of the Earthquake and War Damage Commission which commenced in 1986 has dealt with the issues covered by the recommendations.

The New Zealand government began the review process in 1986 through the Treasury Department, employing an Australian international insurance brokerage company—Minet, Burn, and Roche—to examine and report on insurance and reinsurance coverage for natural disasters in New Zealand. Before summarizing the major claims and recommendations of their report, it is important to point out that the company was adhering to and strongly influenced by a philosophical position of neo-liberalism. For example, in the introduction of the report it is stated: “We acknowledge that the philosophical premise of Government insuring the private sector through subsidized premiums is inequitable” (Minet, Burn, and Roche, 1987:3). And later, along the same lines: “We deem it inappropriate to comment on the attitude of insurance companies within New Zealand in that, at the end of the day, we still feel that for fire and special perils, *free market forces should prevail*” (Minet, Burn, and Roche, 1987:18; emphasis added). And again, there is the assertion: “We feel in the medium term the government may be able to withdraw from its earthquake insurance commitments” (Minet, Burn, and Roche, 1987:25).

Two of the major claims in the report are:

1. The estimated minimal government liability through the Earthquake and War Damage Commission for Modified Mercalli X earthquake in the capital city, Wellington, would be \$10 billion (NZ).
2. Currently there are severe limits on the available capacity of the world-wide reinsurance market to assume a greater proportion of New Zealand disaster risk, and the government will be unable to discharge much of its existing risk liability in the short term unless it considers it unnecessary to maintain the current level of insurance against earthquake risk. “Natural disasters are currently causing a nightmare for insurers” (Minet, Burn, and Roche, 1987:77).

The major recommendations are:

1. The government should continue its involvement in disaster insurance but consider reducing its liability by slowly decreasing the amount of cover granted.
2. The government should examine the feasibility of the private sector assuming a larger proportion of earthquake insurance.
3. The government should insure a substantial part of its liabilities arising from the Earthquake and War Damage Commission.
4. The government should consider investing its funds in overseas hard currency areas.
5. The Earthquake and War Damage Commission should reinsure overseas for earthquake risk.
6. The way in which the disaster insurance levy is collected should be reviewed. The existing land and property rate collection could be utilized.
7. If the method of levy collection is not changed, the purchase of disaster insurance directly from the commission separate from fire insurance should be permitted.

There are two themes that are emphasized throughout the report; New Zealand disaster insurance should be internationalized and also privatized. In support of their case for internationalization, the report states that "if the Government makes provision for reinsurance overseas, the problem of making good physical damage and seeking help to sustain the country's long-term financial standing will be considerably reduced, both in the short and long term" (Minet, Burn, and Roche, 1987:61).

It is obvious that the report is based on a philosophy that frequently produces an unfavorable evaluation of the Earthquake and War Damage Commission. For example, when discussing reinsurance, the report states:

We also conclude that the way in which New Zealand has insured against earthquake in the past has mitigated against New Zealand as a whole being able to buy the desired amount of reinsurance (Minet, Burn, and Roche, 1987:9).

But inconsistency exists in the report. It is stated that "when a natural disaster occurs of a magnitude that gives rise to the type of loss that we discuss within this report, then it is in the interest of New Zealanders to have a responsive, properly run Government natural disaster fund together with a very sound financial insurance market" (Minet, Burn, and Roche, 1987:22; emphasis added).

Implicit in the report is the position that it is not feasible to attempt to plan and prepare to adequately and effectively mitigate the adverse effects of a catastrophe. This implicit position is revealed through the claim “that the questions of whether the levy or the fund is adequate or indeed whether the private industry’s rates or funds are adequate *can only be answered after a major catastrophe*” (Minet, Burn, and Roche, 1987:10; emphasis added).

The next major phase in the review process occurred when the government, through the associate minister of Finance, issued in July 1988 a public discussion paper on earthquake insurance, which draws very extensively upon the Minet, Burn, and Roche report. Most of its content is taken directly from the earlier report and, more importantly, the two documents are philosophically compatible. There is only one area where the discussion paper diverges from a neo-liberal orientation, which would advocate that disaster insurance be voluntary. The discussion paper takes the position that entirely voluntary arrangements would simply not be effective because “an entirely voluntary scheme would clearly lead to wide-spread non-insurance—at least among owners of residential property—and much greater social costs in the event of a disaster” (New Zealand Government, 1988:21).

The discussion paper called for submissions of comments from the public to a three-member Disaster Advisory Group and made it clear that submissions were to be limited to issues raised only in the 30-page paper’s last five pages. Insisting upon this approach, the government ensured submissions were narrowly focused. Even more constraining is that the paper confined issues to policy implementation only. This section in the paper specifies a number of “implementation options” and advises the public to evaluate them in terms of administrative simplicity, minimum enforcement costs, and maximum effectiveness.

What is much more important, but not intended for public discussion, are the policy changes specified in the first 25 pages of the document. The discussion paper seldom diverges from or goes beyond the Minet, Burn, and Roche report. The key areas and statements of policy are:

1. The government must take care to provide assistance to disaster victims in a way that does not reduce peoples’ incentives to take their own protective measures.
2. Effective disaster insurance arrangements should involve as much reinsurance as possible

through a substantial number of organizations that provide reinsurance.

3. Insurance through the private sector would be competitive and result in cheaper, better insurance packages with greater consumer choice.

There is also the policy of compulsory insurance as a divergence from the prevailing neo-liberal perspective. In addition the paper goes beyond the earlier report and recognizes the impact of any increase in costs on low-income people. The paper states as policy that these increases should be met through nonspecific income support when indexing, supplements, and other existing assistance measures do not cover the increases.

Perhaps the public is precluded from making submissions on these policy areas because the associate minister of Finance feels that "the intended changes do not represent a radical departure from the present earthquake insurance policy. Rather they represent a sensible practical step towards more effective, and prudent administration of this policy" (New Zealand Government, 1988:3). How such a claim can be justified is difficult to discern given that the document outlining the changes clearly states that the Earthquake and War Damage Commission will switch from being virtually the only provider of earthquake insurance to being the insurer of last resort. The proposed switch from largely public to primarily private insurance is surely a radical change.

The next phase of the review consisted of the Disaster Advisory Group receiving, analyzing, and reporting on submissions made in response to the discussion paper. Fifty-one written submissions were received and the following recommendations were made on the basis of the submissions:

1. The Earthquake and War Damage Commission should provide compulsory insurance for all residential properties up to replacement value.
2. The premium rate should avoid wide variations between different areas of New Zealand.
3. Premiums should be collected by local authorities through the rating system.
4. Earthquake insurance on all other property should be voluntary.
5. Coverage should be provided for the disasters presently specified in the Act, with the exception of war damage.

Although these recommendations of the Disaster Advisory Group could be described as neo-liberal,

they are not radical; rather, they are only moderate and reformist in scope. However, this does not reveal the entire picture. The recommendations did not have the support of all of the members of the advisory group. The member representing Treasury dissented and expressed strong opposition to the rejection of the principle of competitive supply of earthquake insurance. The chairperson of the group commented upon the lack of unanimity when presenting the report to the associate minister of Finance: "The summary has the unanimous approval of the Study Group but as you will see, the Treasury representative has dissented from accepting the predominant viewpoints established. This is unfortunate, as I would have preferred to present you with a fully unanimous report. The representative has been exposed to discussion with the most senior members of the insurance industry in an endeavor to avoid this situation. *It would seem that he is locked into 'principles'* " (personal correspondence: McGuinness to Neilson, September 30, 1988; emphasis added).

The review process was considered to be close to completion when the Disaster Insurance Bill was introduced to Parliament in November 1989, and it was to have taken effect on April 1, 1990. Its main features include:

1. Disaster insurance will be compulsory for owners of residential dwellings.
2. The disasters to be covered are earthquake, landslip, volcanic eruption, hydro-thermal activity, and tsunami and fire resulting from these disasters.
3. War damage will no longer be covered.
4. Residential dwellings must be insured for their replacement value.
5. Properties worth less than \$20,000 will be exempted from the requirements of the Act.
6. Owners of properties with replacement values more than twice their market value may apply for the right to insure to indemnity values only.
7. Organizations and individuals with sufficient independent assets to pay for the replacement of their dwellings may also apply for an exemption.
8. The Act applies only to buildings used predominantly as the principal place of residence. All other property, such as business property, motor vehicles, and nonessential household contents, will no longer be legally required to be insured.

9. The Earthquake and War Damage Commission will be responsible for policing the legislation.

10. Private insurance companies will not be barred from providing qualifying insurance policies.

Although this proposed legislation was basically neo-liberal in orientation and did involve making significant changes to the existing disaster insurance program, it is important to recognize that it was more of a pragmatic compromise than a radical departure from previous developments. But the proposed changes were still too extensive for some interested parties and not extensive enough for others. The legislation became bogged down during its consideration in the Commerce and Marketing Select Committee of Parliament, which looked at the Disaster Insurance Bill. A powerful pressure group representing primarily multinational business interests—the Business Roundtable—opposed the bill before the committee. The Roundtable insisted that the Earthquake and War Damage Commission be put on a competitively neutral basis with other insurers and be privatized at the earliest opportunity.

The Insurance Council also strongly opposed the bill before the Select Committee. The council proposed that the bill be dropped and that the existing legislation be amended to ensure that New Zealand was adequately covered for a catastrophe. The council claimed that the proposed legislation was flawed along several lines:

1. The bill's liability estimate of \$17 billion (NZ) was excessive. A more suitable estimate would be \$5.5 billion.
2. The government's position that 20% of residential property was currently uninsured was incorrect. Only 2.5% is uninsured.
3. The bill produces a confusion of statutory and commercial roles. This and other weaknesses would mean that the Earthquake and War Damage Commission would not survive more than five years.

The Select Committee accepted that there were weaknesses in the bill and decided not to report it back to Parliament before the national election in October 1990. The chairperson of the Select Committee stated publicly: "It [the Bill] will not be going anywhere in a hurry because there are some things to be thought through. It will be some time before the Government decides where to go on these issues" (*The Press*, April

21, 1990, p. 10).

The government was not returned to office in the October election and thus the question of whether it would have chosen to make only limited or more extensive changes to the Earthquake and War Damage Commission remains unknown.

Since then the Treasury has commissioned another firm of insurance brokers, Marsh and McLennan, to report on the Earthquake and War Damage Commission. This report recommends the abolition of the commission's monopoly on residential earthquake insurance and the limitation of its role to providing disaster coverage to those who could not get it from private insurers. It would seem to suggest eventual abolition by recommending that the government take the commission's assets into its own accounts. The government minister responsible for the commission has expressed strong reservations about these recommendations.⁹

Nevertheless, the previous government had already started a procedure that had the effect of drawing the commission's funds into the government's accounts. As of March 31, 1990, the government required the Earthquake and War Damage Commission to pay it \$239 million (NZ), which was a large proportion of the commission's annual income of \$355.1 million. This was the first time the government had instituted this requirement. This very high payment meant that the commission's funds rose only 6.5% for the year ending March 31, 1990.

The government, through the finance minister, justified the required payment as a reinsurance guarantee fee and payments in lieu of tax and dividend because the government is the commission's sole shareholder.¹⁰ However, the government has never broken down this figure. When coupled with the general strategies of revenue raising by this government, such policy indicates that this annual requirement is merely another revenue grab, which could leave the commission in a precarious financial position.

9. These developments occurred in early 1991 and were reported in the media in May. The deadline for completion of this paper meant that analysis of unfolding events had to be cut off at this point.

10. It should be noted that the minister of Internal Affairs is responsible for the Earthquake and War Damage Commission, and it would appear that this minister was effectively side-stepped by the minister of Finance in this matter.

MAJOR ISSUES

The five-year review of the Earthquake and War Damage Commission, which is still in progress, has revealed tension and disagreement over a number of major issues. These issues will now be focused upon and the nature of the tension will be analyzed.

Liability: Adequacy of Reserves and Indemnity and Replacement Coverage

The major problem that characterizes New Zealand's disaster insurance program is that sufficient funds are not available to bring about complete restoration after a serious earthquake in a major urban area. The major goal of a disaster insurance program is to build up a substantial reserve of funds in readiness for a major catastrophe. In this regard, Freeman pointed out that the success of earthquake insurance depended upon "the building up of a reserve; recognizing that earthquake insurance . . . meets its severe loss only once in a quarter-century or half-century, with many intervening years without noteworthy loss, and that funds well into the millions of dollars must at all times be kept in readiness to meet this rare emergency" (1932:24). Under this criterion, the New Zealand disaster insurance program has not been successful. Up to the present time, sufficient funds have not accumulated to cope with a severe earthquake. The existing amount in the fund would constitute only a small fraction of the total liability.

This weakness in the insurance program has been carefully analyzed by Sherburd (1981:4-6). In his analysis, the following earthquake specifications were used:

- Magnitude:** 7.5 on the Richter Scale
- Intensity:** X on the modified Mercalli Scale
- Source region:** Close to Wellington, capital, population 350,000
- Depth:** Shallow, less than 40 kilometers
- Aftershocks:** One magnitude 6.0, one magnitude 5.0, numerous tremors
- Time:** 10:30 a.m. on a working and school day

Sherburd has estimated that such an earthquake would produce a claims cost of \$2,000,000,000 (NZ).

This is based on a 20% loss ratio on the total sum insured at risk in the greater Wellington area. This estimated

claims cost greatly exceeds the existing reserves in the earthquake insurance fund, and also exceeds any claims cost up to the present, the highest being \$125,678,438 (NZ) in 1987 for the Bay of Plenty earthquake.

The liability and benefits of the disaster insurance program have developed into quite an unsatisfactory situation. The liability of the commission is the lesser of: 1) the sum insured, or 2) the indemnity value at the time of loss. The Earthquake and War Damage Act does not define indemnity value, and a legal definition of the concept is not readily available, but is frequently referred to as market value.

Replacement insurance has become more available, especially in the last two decades, and it is interesting to contrast liability for indemnity and replacement values. In the case of a 50-year old dwelling, the replacement value could be \$120,000 (NZ), whereas the indemnity value might be only \$80,000. In the event of complete earthquake destruction of a building, the owner would receive an insurance benefit of \$80,000 from the commission and would have to privately obtain another \$40,000 in order to accomplish complete restoration. An insurance program that provides coverage on the basis of indemnity value of property is not going to provide sufficient funds for satisfactory restoration. The indemnity value payments will not come close to meeting the actual costs of reconstruction.

Even more challenging than the issues of reserves and adequacy of insured coverage is: Where does the ultimate responsibility for liability for disaster mitigation lie? This has been debated in terms of the neo-liberal philosophy of the sanctity of private and individual rights and the social democratic philosophy of national interests and social justice. Consideration of the next three issues will elaborate upon this matter as it relates to catastrophic disasters.

Private or Public Sector Developments

New Zealand's disaster insurance program is firmly rooted in the view that public sector developments are better than private sector endeavors when it comes to planning and preparing for catastrophic disasters. The philosophy on which the program is based is stated very clearly by the minister of Finance in the Parliamentary debate of 1944, which accompanied the introduction of the legislation for earthquake insurance. "What has actuated the writing of the measure is the unpredictable nature of earthquake losses, and the injuries that might

come to a few of the people. The endeavor has been to work out a principle under which the whole loss is *deemed to be a national loss*, and under which those people who might be affected will subscribe towards a fund to meet losses which may come to any of them. It is not exactly the same as a fire-insurance premium” (Hon. Walter Nash, House of Representatives Debates, September 28, 1944, emphasis added).

Ten years ago New Zealand society still provided considerable support for a national disaster insurance program. In 1980 the Commission of Inquiry into a major landslide in a residential area took the position that “it is not unreasonable *for the community as a whole* to bear at least a proportion of the cost involved in such disasters, but any scheme devised to do this should, we consider, also leave room for the exercise of individual initiative and prudence and should not be so expensive that resentment at the cost of funding the scheme prevents its acceptance” (Commission of Inquiry into the Abbotsford Landslip Disaster, 1980:150; emphasis added).

However, in the last 10 years, support at the philosophical level for the disaster insurance program has decreased drastically. The Earthquake and War Damage Commission has been attacked vigorously and persistently for carrying out a public, national, community-oriented program. It has been recommended repeatedly that the Earthquake and War Damage Commission should be privatized. The more restrained advocates of the philosophy of free markets and individual responsibility recommend gradual phasing out of the commission’s monopoly on earthquake insurance. Others press for abruptly ending the commission’s activities.

This debate about the merits of social welfarism compared to neo-liberalism has occurred largely at an abstract level of assertions and counter-assertions of philosophical principles. Very little attention has been paid to past practices in New Zealand regarding earthquake recovery. In this respect, there is some evidence that the involvement of the state in earthquake insurance does not resolve all the problems in a capitalist society.

In New Zealand there is a tension between the state and private sector when it comes to earthquake reconstruction, because the building industry is a largely private enterprise. The tension manifests itself in a number of ways. Competition can become extremely intense and stressful. Even though some finance may be available for earthquake construction from insurance payments, in New Zealand there will be strong, and at times invidious, competition for scarce building resources that will be largely controlled by the private sector—a

scarcity of both materials and labor will occur. In fact, because of the small scale of the New Zealand economy, if the entire building industry largely diverted all of its resources to reconstruction, there would be complete disruption of the overall economy.

A major earthquake occurred in 1968 in the Inangahua area when New Zealand was experiencing a severe economic recession, and the building industry in that area was in a slump. There were shortages of skilled tradespeople, equipment, building supplies, and other resources crucial for reconstruction. Coupled with this was the reluctance by the building industry to extend credit because it claimed it was not in a position to carry book debts (Gill, 1969:117). Thus, those who were able to pay cash were able to have their property restored immediately, if the building industry had the available resources. Therefore, socio-economic differences played a significant role in earthquake restoration. A program philosophically based on equity does not produce equity in practice during recovery from an earthquake.

The existence of a state insurance program does not mean that the state will control priority over which tasks should be done first. In New Zealand, the mobilization of materials and labor will be largely controlled by the private sector. This deployment of resources will be largely influenced by monetary incentives rather than societal needs and goals. In other societies with socialist economies, earthquake reconstruction could become a rallying point for intensified efforts for the good of the entire society. Resources could be allocated in the national interest. Moral and collective incentives could prevail.¹¹

Voluntary or Mandatory Participation

Closely related to the issue of the relative merits of public or private developments is the issue of whether participation in disaster insurance should be voluntary or compulsory. In the case of the Earthquake and War Damage Commission, participation has only been compulsory if one chose to take out fire insurance. In practice it has worked out to be mandatory because virtually all property (97.5%) in New Zealand is insured against fire. Given this and the fifty-year operation of the disaster insurance program, it is not surprising that

11. A capitalist and socialist society, United States and China, are compared by Gimenez in her analysis of social response to earthquake prediction. She found that moral and collective incentives predominated over monetary incentives in the socialist society of China (Gimenez, 1976).

the government chose to ignore the neo-liberal recommendations for voluntarism and make disaster insurance compulsory for most residential property.

It was clearly recognized by the drafters of the new proposed Disaster Insurance Bill that when earthquake insurance is entirely voluntary and only available from the private sector, a number of difficulties arise. In areas of low risk, very little insurance coverage will be taken out. In high risk areas, insurance companies will be reluctant to issue much insurance and the amounts insurable will be relatively small while premiums will be relatively high. Characterized by strict limitations, insurance policies could be unacceptable to the insured.

National or International Strategies

Until the mid-1980s the Earthquake and War Damage Commission operated entirely as a national program. All of the commission's investments were on a national basis, primarily in government stocks. There was, however, an implicit international component. Since the liability of the commission was government guaranteed, it was recognized that the New Zealand government may have to raise loans off-shore to meet the claims that would arise from a major earthquake in a large city. It has also been recognized for some time that the government may experience severe problems in funding its liability in a catastrophe. After the 1968 Inangahua earthquake, it was pointed out that "with the economy now strained to the limit of overseas resources and available investment, and likely to remain so, the possibility of sufficiently substantial loans to ensure quick recovery would be slight indeed" (Power, 1968:26). Thus, the Earthquake and War Damage Commission came under strong pressure from the government in the late 1980s to obtain reinsurance coverage internationally, thereby reducing the amount of the government's liability.

Some reinsurance has been obtained by the commission on an international basis, but the amount of coverage has not been stated in any annual report, and the costs are not insignificant. An unconfirmed figure of \$27 million (NZ) a year has been reported in the press. (*Dominion Sunday Times*, 21 January, 1990:30). Hence, at this point in time, switching to a more international strategy is not a straightforward matter for the Earthquake and War Damage Commission.

Uniformity or Diversity of Premium Rate

The Earthquake and War Damage Commission has always had a premium rate that is uniform throughout New Zealand; there are no variations from one region to another. All parts of society are treated as of equal risk. Critics make the case that low risk areas are subsidizing areas of high risk, since the program is uniformly compulsory with no variation in rate to reflect degree of risk.

From its beginnings, the New Zealand disaster insurance program has been coupled with fire insurance. The piggy-backing of disaster insurance with fire insurance has reduced overhead costs such as office expenses, soliciting, inspection, and commission of agents. Although this has meant substantial lowering of administrative costs, it does mean that liability assessment has been totally restricted to the fire risk of the insured property. Vulnerability of the property to risk from other disasters remains unassessed.

CONCLUSION

Are there certain kinds of natural disaster damage, such as from an earthquake catastrophe, that are uninsurable through commercial insurance? The answer to this question would seem to be yes if the commercial aspects of the insurance program are given priority. The insurers are unlikely to have the resources to meet claims that would be associated with a major catastrophe.

The speedy creation of adequate reserves is likely to be beyond the capacity of most insurers. In free market terms, the level of potential risk makes the normal practice of reinsuring available only, if at all, at a prohibitive cost. It would be very challenging to maintain a realistic relationship between premium and risk and still have economically viable premium rates when it comes to a true commercial program of insurance for major catastrophes.

However, it is important not to become ideologically blinkered and locked into principles that limit thinking only to commercially viable insurance. The Earthquake and War Damage Commission points the way to viewing insurance as basically social in orientation, and as such has the potential to be an effective and efficient way of mitigating the severe effects of a major catastrophe. In this respect, the New Zealand program is a pragmatic compromise between outrightly market-controlled commercial insurance and a government-

funded compensation scheme that is based on taxation.

What features should this pragmatic compromise of social insurance have? The New Zealand experience reveals that the program should be state-controlled and operated and participation should be mandatory. Considerable uniformity should prevail over a long time span regarding risk acceptance and cost of maintaining coverage. How international such a program can be is debatable; internationalization would seem to be inappropriate for a program whose premise is that national or community interest must prevail in certain areas of life. When the state assumes the risk for catastrophic damage, liability must then ultimately lie with the national state.

There is the position that the New Zealand disaster insurance program is the result of "the gradual building of a system of disaster insurance on a piecemeal basis in response to public demand" (Commission of Inquiry into the Abbotsford Landslip Disaster, 1980:154). If this is the case, then it is important to figure out what kind of public demand produced particular aspects of the program and to identify the sources of that demand. Public demand is clearly related to the occurrence of major disasters; for example, there was a severe earthquake in the Masterton region just two years prior to the War Damage Commission being extended in 1944 to become the Earthquake and War Damage Commission. The correlation between this disaster and public demand would seem to be obvious.

An equally strong case can be made that public demand is closely related to the prevailing ideology of the time. From the 1940s to the 1970s, egalitarianism and social justice were strong viable components of the New Zealand way of life. The developments over disaster insurance clearly manifest aspects of these philosophical orientations. Over and over again the exponents of disaster insurance speak of the loss from a catastrophe being a national loss, a community problem, and not a private loss or individual responsibility.

The advocates of neo-liberalism who recently recommended that disaster insurance be available on the competitive open market and that individual acceptance of risk prevail are probably recommending the abolition of the Earthquake and War Damage Commission. The commission's existence and operation are simply not compatible with the values of neo-liberalism. If neo-liberalism prevails in New Zealand society, the Earthquake and War Damage Commission will probably not survive as a viable program.

In the midst of this debate about changing the Earthquake and War Damage Commission, it is the major conclusion of this paper that the commission has been effective and efficient in mitigating the effects of natural disasters in New Zealand for the last 50 years. The fact the program has lasted so long, extended its coverage over different types of disasters, and coped with a large number of disasters, many of which have been very damaging, and always had a reserve of funds to call upon, is testimony to the viability of the program. As to its capacity to effectively mitigate the effects of a major catastrophe, it must be concluded that it would be relatively more effective than any of the alternatives that are associated with the proposals for radical change that have emerged in the last five years. To the degree that catastrophic disaster damage can be mitigated in an equitable and effective manner, the Earthquake and War Damage Commission of New Zealand is probably one of the best strategies available in a social democratic society.

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