

UTILIZATION OF THE MORTGAGE FINANCE
AND INSURANCE INDUSTRIES TO INDUCE
THE PRIVATE PROCUREMENT
OF EARTHQUAKE INSURANCE:
POSSIBLE ANTITRUST IMPLICATIONS

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Institute of Behavioral Science
University of Colorado

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PREFACE

This paper is one of a series on research in progress in the field of human adjustments to natural hazards. The series is intended to aid the rapid dissemination of research findings and information. It was started in 1968 by Gilbert White, Robert Kates, and Ian Burton with National Science Foundation funds but is now self-supporting. The papers are produced by the:

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SUMMARY

This study examines the prospects for using the property/casualty insurance industry and/or the mortgage finance industry to induce large numbers of private property owners to purchase earthquake insurance, and to assess whether and to what extent antitrust law violations might be risked in any such process.

The study first identifies the general attitude held in 1980 by the property/casualty insurance industry with respect to broad-scale underwriting of earthquake insurance for private property. It also explores the attitude of the mortgage finance industry regarding whether real estate interests held for purposes of loan security should be protected by earthquake insurance. It then illustrates pertinent attitudinal changes that have taken place since 1980, identifies attitudes which are proving resistant to change, and offers reasons for both. It suggests possible approaches that might result in one or both industries' affirmatively and significantly influencing the purchase of earthquake insurance by private property owners. It seeks to identify possible outcomes if such influence were to cause large numbers of private property owners to assume the financial responsibility for restoration of earthquake-damaged real property.

In conclusion, the paper offers an analysis of whether the illustrative examples given present significant risks of anti-trust violations, and assesses whether and to what degree such risks can be avoided or substantially minimized.

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PROLOGUE

The Concern Addressed:

It is only a question of when, not if, a major earthquake will occur in the United States. If it hits a metropolitan area, and there is a good chance that it will, the consequences will probably be catastrophic. During the last decade, we have been made aware that well over half the states could suffer such an earthquake. Citizens in those vulnerable states seem to presume that if they are struck by a severe earthquake the federal government will move in quickly with adequate disaster relief to make them whole again, or nearly so.

Contrary to general public expectations, the 1974 Federal Disaster Relief Act and the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (amending the 1974 act) make no compensatory provision for damage to private property. The act limits federal financial assistance mainly to the restoration of essential public facilities. When "the" earthquake does occur, even authorized federal cost sharing might well reach awesome amounts. The consequences of an unfunded need for reconstruction and restoration of private sector damage similar in scope to that suffered in San Francisco in 1906 could only be chaotic. In such circumstances, the federal government, suddenly faced with such a catastrophe, may be pressured to enact emergency legislation under which it assumes much of the financial responsibility for the private sector restoration effort. History has shown us that such emergency-stimulated legislation will

produce results that often fall far short of basic needs, while producing expenditures that are sometimes excessive and easily misdirected.

As matters stand today, if a large urban area suffers the severe impact of a major earthquake, it is probable that emergency federal legislation will be placed quickly before Congress, carrying with it inherent risks of inefficacy, inadequacy, and excessive expenditures. There are a number of decision makers in government, and in the private sector, who believe that the most viable alternative to these chaotic consequences is for private property owners to be persuaded, or required, to assume the responsibility for providing, in large measure, for their own rehabilitation.

The means for carrying out such an assumption of responsibility is, logically, the well-established institution of privately procured property/casualty insurance. Earthquake insurance, of course, is now and for three-quarters of a century or more has been available; however, it has not often been purchased. A number of studies have pointed out reasons for this reluctance to use insurance to protect private residential property from earthquakes. Thus, if insurance is the most logical means of assuring the financial capacity to rebuild private property following an earthquake, an initial problem is how to induce property owners to purchase such protection.

The Question Posed:

How can private citizens be induced to buy earthquake insurance? The simple solution is for government to order them to do so. Alternatively, government might order insurance underwriters to include such coverage in existing fire, extended coverage, and/or homeowners policies at no, or at a minimal, premium increase. But, of course, both of these alternatives must be ruled out, the first clearly so on constitutional grounds. The second must fall for at least two reasons. First, even if it were possible, in principle, to promulgate a valid regulation which required that any underwriter doing business in the regulating state must include earthquake coverage in all property-damage insurance contracts, the correlative requirement, that the underwriter must not consider that coverage in setting the premium charge, would not be enforceable. The second reason, a pragmatic one, is that the insurance industry, world wide, lacks the financial capacity to underwrite the losses that might be incurred through coverage of such a "captive" market, even if a fair premium were permitted. The reason this peril is considered to be uninsurable by underwriters is that insufficient data exist to determine what a fair or reasonable premium would be. There are a few, inside and outside the industry, who at present are not convinced that existing data are inadequate to permit structuring an economically sound earthquake insurance program. However, the present industry consensus is to the

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contrary; for the purposes of this article, that position will be accepted.

How, then, in the absence of a government mandate, can private citizens be induced to purchase earthquake insurance to protect their property against that risk? If they can be so induced, how can the insurance industry be persuaded to undertake such a massive underwriting obligation, and how can it be protected against the catastrophic economic losses it could incur if it were burdened with such a responsibility?

The answer to these questions is complex and not yet fully determined, but enough has been learned to justify expectations that this is a solvable problem. The solution will be multifaceted, and will probably require a finely balanced government/industry sharing of financial responsibility that will be more complex than anything previously attempted. Nevertheless, industry and government officials who are working on it confidently expect the solution to be perfected within a fairly short time. We can reasonably expect that the insurance industry's "capacity problem" will not be solved simply by making the insurance industry more competitively attractive to investors. Rather, it will be accomplished through the development of new and sophisticated risk-management techniques, general adoption of a number of already proven risk-avoidance-and-mitigation strategies, and probably by providing some essential restructuring of tax laws which currently limit the reserves that the industry can set aside for such a situation.

After adopting all reasonable risk-management techniques possible, the ultimate success or failure of the attempt to achieve affordability will be dependent on whether the critical element of government/industry affiliation can be achieved in such a manner that premium costs for an earthquake endorsement can be reduced to roughly one-tenth of the present charge, a range that many insurance industry leaders believe can be achieved.

Even if the capacity problem and the affordability problems are solved, the problem remains of persuading a reluctant public periodically to expend funds to procure earthquake insurance. The insurance industry is unlikely to market the coverage aggressively, having long been very apprehensive about even the small amount of earthquake coverage it does have.

The answer to this aspect of the problem is to find an acceptable and constitutionally sound method of requiring such an expenditure. Indeed, there is a process already in place, tried and found functional, for doing just that. The mortgage finance industry, acting at the points of loan origination, has long required, as a contractual condition for making such loans, that the security property be protected by standardized property-damage insurance coverage. By the simple expedient of adding a few select words to the requirement, such a process could, within a very few years, assure that such a large percentage of real property is covered by earthquake insurance that most other private property owners would be induced to follow suit. More-

over, because of the nature of such insurance contracts, each new premium period would provide a window for satisfying the requirement, without posing any basis for constitutional challenge.

This apparently simple and easy solution runs afoul of one basic problem and two corollary problems. The basic problem is that the mortgage finance industry, largely policy-driven by its secondary market forces, is not interested in becoming an integral part of the solution to the root problem. The industry is so highly competitive that, unless all loan originations were bound to the imposition of earthquake insurance, few lenders would feel comfortable requiring it in the absence of a strong showing that their portfolio of investments in the mortgage finance marketplace was seriously at risk without such an indemnification potential.

One of the corollary problems is that a better method of protecting portfolio investment security would be to procure portfolio insurance directly, if for no other reason than that the costs of administration would be greatly reduced and the problem of retention enforcement would be eliminated.

The other corollary problem, under present conditions, is that the insurance industry is generally strongly resistant to any program which would force it to write earthquake insurance on a comprehensive basis.

In spite of the apparent barriers, the mortgage finance industry still appears to be an effective mechanism for assuring widespread private procurement of earthquake insurance coverage.

Mechanically, the federal bodies presiding over our finance institutions, as well as the deposit insurance institutions, could elect (or be elected) to impose the earthquake insurance requirement as a loan prerequisite, with a strong and reasonable probability that the requirement could survive constitutional challenge.

One more problem suggests itself at this point, and it is the primary question this paper addresses. Obviously, to initiate and implement a program of the sort suggested above would require a level of intra- and interagency cooperation, coordination, and decision making that might subject the participants to possible violations of antitrust laws. If risks of antitrust violations are inherent in the program contemplated, it will be necessary either to have such laws relaxed, or, if possible, to avoid them.

To explore and assess that risk, the Federal Emergency Management Agency (FEMA) commissioned the study conducted by The George Washington University from which this paper is derived. The paper first identifies (as it was in 1980) the general attitude of the property/casualty insurance industry and the mortgage finance industry toward being used to induce substantial numbers of private property owners to purchase earthquake insurance; it then moves on to illustrate developing changes in those earlier attitudes, to sort out situations which are proving resistant to change, and to document reasons for both. It further seeks to identify the probable format of a program intended

to stimulate widespread private purchase of earthquake insurance, and to illustrate through hypothecation (since there is as yet no actual process for examining) the many interactions that may or must occur if a functional process is to be established that will shift the responsibility for the restoration of earthquake-damaged real property to the shoulders of the property owners. Finally, the paper analyzes some of these hypothecated interactions for possible antitrust law vulnerabilities and assesses whether any such risks can be avoided or substantially minimized. It concludes with an assessment of the extent to which the two subject industries might be exposed to risks of antitrust law violation if they were to participate in a strong effort to transfer to the private property owner the responsibility for financing the costs of earthquake damage to private property.

Conclusions Reached in the Study

Both the property insurance industry and the mortgage finance industry have the capacity to exert, individually or in concert, considerable influence over whether and to what extent private property owners will purchase earthquake insurance. Neither wants to do so at present. Neither has any incentive to do so. In the case of a widely insured-against catastrophic earthquake, the insurance industry would not be able to pay all the losses and yet continue to meet its other obligations. Individual lenders might either incur catastrophic losses or be little affected, depending on their individual loan portfolios. If they need protection against earthquake-caused depreciation in

the value of properties encumbered as security for loans outstanding, they would probably find it more economical and subjectively beneficial to procure portfolio insurance. The institutional regulatory system governing lending institutions, however, could with procedural ease institute a valid policy-based requirement that all property tendered as collateral for loans be insured against earthquake damage. In any foreseeable program, the federal government would have to establish general policy supporting private procurement of earthquake insurance on a wide scale. In so doing, the government would have to play a critical role in the reinsurance area.

Any functional process for achieving the goal of vesting in the hands of private property owners the primary responsibility for financing the costs of restoration of their property in the event of its damage by earthquake must involve a large number of interactions among and between lenders and insurers which might subject them to risks of antitrust violations.

National policy regarding the function and application of our antitrust laws has undergone significant change during this decade. Recent decisions have rendered the laws not nearly as antithetical to legitimate competitor cooperation that is designed to enhance the availability and attractiveness of products and consumer welfare as was the case previously, and the circle of uncertainty regarding antitrust law has grown narrower. Thus, the analysis and guidelines set forth in the study should reduce the risk that well-intentioned persons would violate these laws.

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Indeed, it should be possible to achieve all of the legitimate goals of an active earthquake mitigation program with little risk of successful attack under antitrust law.

INTRODUCTION

Sensing the potentials inherent in the mortgage finance and insurance industries for establishing a sound earthquake insurance program within the private sector, but recognizing the possible impediment that antitrust laws impose, the Federal Emergency Management Agency (FEMA) commissioned an exploratory study of the problem in 1980 (Brown and Weston, 1980). The main purpose of the study was to identify and illustrate, within involvements and activities identified as possessing earthquake damage mitigation potential, those which might provoke or be vulnerable to antitrust or restraint of trade challenges. Where such vulnerabilities were identified, they were analyzed to determine whether, how, and with what consequences they might be avoided. The study also noted that few property owners appeared willing to buy earthquake insurance, and it examined the reluctance of both the insurance and the mortgage finance industries to promote such a market.

After 1980, a number of events, developments, and changes occurred which suggested that the 1980 assessment needed to be updated. For example:

- During the last few years, major changes have occurred in the mortgage finance industry, as well as in the general economy. The changes in the general economy have also imposed some significant disruptions within the insurance industry.
- Much has been learned about designing new buildings and renovating existing buildings to better withstand seismic stresses.
- Significant decisions have been handed down by the courts in the field of antitrust law. Some federal and state anti-

trust policies have been subjected to a broad re-examination, and specific legislative attention is being given to the scope of exemption from federal antitrust laws which the insurance industry has enjoyed.

- A particularized override has been judicially upheld with respect to the so-called "grandfathered" status traditionally accorded to existing construction completed under earlier building and safety codes, where a clear, present, and remediable threat to public safety is recognized.
- There has been an expansion of potential liability of municipal governments, with respect to negligence in the exercise of police power responsibilities, though that subject is outside the scope of this study.
- Recent California court decisions have interpreted the doctrine of concurrent causation in such a manner as to extend the scope of coverage of existing property damage insurance policies to include indemnification against loss occasioned by earthquake or earth movement, even where a particular hazard insurance policy expressly excluded such coverage.
- Legislative response to the decisions mentioned above resulted in a compromise dictating that any company writing property damage in California tender to its policy holders a one-time offer to provide, for a stated premium, an earthquake coverage endorsement. This mandate produced a doubling (to about 15%) of the number of one-to-four-family residential properties presently covered by earthquake insurance.
- Also in California, studies designed to find ways to improve land-use regulatory processes for the purpose of mitigating earthquake damage stimulated passage of the Alquist-Priolo Act which requires sellers of housing located in close proximity to known active surface fault lines to make adequate disclosure of that fact.
- A fundamental question has been raised with respect to the capacity of the insurance industry to meet its contractual obligations if a major earthquake should impact a large urban area such as Los Angeles or San Francisco; that issue is at present undergoing active study and evaluation.
- Predictability of major earthquakes has not yet achieved the degree of reliability hoped for a decade ago. Nonetheless, a consensus exists among seismologists and other professionals working in the field that before the year 2000 California probably will experience an earthquake similar in magnitude to the 1906 San Francisco quake.

- Much knowledge has been acquired regarding the vulnerability of sectors of the nation outside of the far west to major earthquakes of an intensity similar to those experienced by New Madrid, Missouri, in 1811 and 1812. Some 37 states now have been identified as sharing the risks of major earthquake damage.

The significance of these developments is considered in this paper.'

GENERAL ATTITUDE TOWARD EARTHQUAKE INSURANCE

In this section we summarize, from the 1980 study, some then apparent intraindustry differences in attitude regarding the underwriting of earthquake insurance; highlight uncertainties which contributed to those differences; recognize some post-1980 developments that have affected those attitudes; and remark on efforts being pursued to reduce the differences and to attain an industry consensus on how best to handle the earthquake peril. We also recognize recent federal and state legislative efforts to narrow the area of industry exemption from application of federal and state antitrust laws. We take note of some practices within the industry that may prove vulnerable to antitrust challenge. We attempt to illustrate why the industry believes that, as matters now stand, it could find itself in a precarious economic state if it were obliged to comprehensively underwrite earthquake damage. And we conclude with a description of some conceptual approaches being analyzed by industry leaders seeking to develop an economically sound program under which all needs for earthquake insurance could be satisfied.

In 1980, California residential and small business property owners represented a very quiescent market for earthquake insurance, with only 7% of property insurance policies carrying an earthquake endorsement. In other states the percentage was even lower. Property/casualty insurers had not actively promoted the sale of this coverage, but they generally made it available to requesting clients at premiums the industry considered reasonable. The industry was well aware, however, that the federal government, in several pieces of proposed legislation and in the National Earthquake Hazards Reduction Act, had shown a continuing interest in expanding private earthquake insurance coverage (see Brown and Schiller, 1979; Cheney, 1987).

The lack of enthusiasm among property/casualty insurers stemmed from a general recognition that it was not sound business to underwrite earthquake protection extensively. This judgment was based on several factors, the foremost being the inability to predict earthquake incidence or to estimate dependably the probable maximum loss (PML) that the industry would sustain. The PML uncertainty resulted from lack of sufficient data within the industry regarding earthquake incidence, coverage, and related matters. (To produce information making it possible to ascertain how much earthquake insurance is in place in California, with respect to buildings of up to eight stories [taller buildings being less susceptible to the type of ground motion that has caused most damage in major earthquakes], the commissioner of insurance issued a "data call" in 1979. Yearly submissions have

been received, summarized, and published subsequently. See Department of Insurance, 1980-1986, for the information for a given year). Another reason for the industry's avoidance of substantial earthquake exposure was its fear of strong "adverse selection"—the tendency of poorer risks to seek or continue insurance to a greater extent than do better ones (Anderson et al., 1981; see also, Winter, 1988). Furthermore, the existing projections for an R8.25 earthquake impacting San Francisco or Los Angeles produced PML damage figures in the multibillion dollar range, causing considerable apprehension concerning the re-insurance market's ability to absorb such losses.

Several studies conducted in the modern period of heightened earthquake awareness (here defined as originating with the 1964 Alaskan earthquake) have probed for reasons why, even in California, such a small percentage of homeowners has purchased earthquake insurance (Kunreuther et al., 1978; see also, Cheney 1987, p. 32). They found that even in California there was a widespread public perception that unless one's property was on or in close proximity to a known surface fault, it was not at significant risk from an earthquake (this perception may be supported by California's Alquist-Priolo Special Studies Zone Act of 1972 which requires disclosure to prospective buyers of close proximity to a known active fault). There also was a commonly held belief that premium costs were relatively high (the rate has typically ranged between \$1.50 and \$2.00 per \$1000 of insured value) particularly when subjected to a deductible clause,

usually pegged in California at 5% of insured value prior to the passage of Assembly Bill 2865 , and at 10% thereafter. (Assembly Bill 2865, described in greater detail below, was a significant earthquake mitigation measure in California. It prescribed that "no policy of residential insurance may be issued or delivered or, with respect to policies in effect on the effective date of this chapter, initially renewed in this state by any insurer unless the named insured is offered coverage for loss or damage caused by the peril of earthquake as provided in this chapter.") Other identified reasons for the low level of consumer interest included a widespread public attitude of complacency or fatalism. Particularly in the eastern and central U.S. there was very little public awareness of the region's significant earthquake history. Not surprisingly, the perception held by many members of the public has been that the probability of a damaging earthquake is remote. Consequently, earthquake insurance is most often seen as a not very attractive investment, instead of as an indemnity type of protection.

During the last eight years, there has been considerable broadening of public awareness of and constructive concern over the peril of earthquakes, especially in California where the relative imminence of a major event is being accorded serious official recognition, and (thanks in large part to the efforts of the Central United States Earthquake Consortium [CUSEC]) in the seven states surrounding the New Madrid, Missouri, fault zone. In general, however, there has not been any notable public demand

for earthquake insurance. Only in the near aftermath of an earthquake of attention getting intensity, such as the Long Beach (1933), the Kern County (1952), the Alaska (1964) and the San Fernando (1971) earthquakes and, more recently, the Coalinga (1983), the Morgan Hill (1984), and the Mexico City (1985) events, has a surge of interest occurred. Historically, a substantial amount of the protection procured in such cases lapsed at an early premium renewal date.

Particularly in California, one might expect loan-originating finance institutions to require mortgagors to purchase earthquake insurance for any earthquake-vulnerable property encumbered by a security interest favoring the mortgagee. However, almost no such pressure was evident in 1980, nor is it today in California, much less in any of the other high-earthquake-risk sectors of the United States (see Palm, 1985a, 1985b). The secondary mortgage market, in 1980, seemed to be equally complacent. The Federal Home Loan Mortgage Corporation (FHLMC) commissioned a study examining its exposure incidental to a major earthquake (Kaplan, Smith and Associates, 1981), but that study did not disclose any intolerable risk for the sponsor, and nothing was done, at least publicly, that showed concern over possible financial disruption to the secondary market as the consequence of a major earthquake. At most, there was a general clause in the standard mortgage documents promulgated by Federal National Mortgage Association (FNMA) and the FHLMC which specified the minimum property insurance coverage a security interest must carry to be

routinely acceptable to the secondary market. That clause did not even mention earthquakes, though a window was left open for individual lenders to add the requirement of an earthquake endorsement or other additional coverage where such additions would reflect common practice within their area of operations.

Paradoxically, the FHLMC requires earthquake insurance coverage for loans originated in Puerto Rico and the Virgin Islands. As far as we could learn, the rates charged in those territories apparently are not prohibitive. Puerto Rico has traditionally been a capital-short jurisdiction with respect to mortgage money and thus has been sensitive to matters that would dissuade investors. Although California has always been in a similar capital-deficit position, eastern lenders apparently have not found the general absence of earthquake insurance dissuasive to mortgage investments there. Perhaps the difference is attributable to bargaining leverage inherent in the vast California market and to the fact that, thanks to branch banking, loan originations in California are largely under the control of a few very large financial institutions.

Differences Within the Industry

In 1980, to a greater extent than today, there were differences of opinion among insurance industry leaders regarding the industry capacity to reinsure earthquake coverage written on a comprehensive scale. Among those feeling that the reinsurance capacity was insufficient, there were further differences of opinion regarding the wisdom of designing a program to cure such

a deficiency through the active participation of the federal government. Alerted in the early 1970s by attempted federal legislation which, had the bills not been defeated in committee, could have mandated widespread private coverage for earthquake damage, many industry leaders were openly antagonistic during that decade and on into the 1980s to any insurance industry/federal government relationship similar to the early National Flood Insurance Program.

Reasons for the Differences

There were a number of reasons for industry leaders differing on the capacity of the industry to deal with a catastrophic earthquake and on the strategy of forming a government alliance of some sort to cope with such an event. One reason was that industry potential for handling an earthquake PML was somewhat dependent upon the marketing strategy that the industry might adopt. If it continued to maintain its low-profile marketing posture, so that it did not subject itself to a level of financial risk for earthquake losses that was disproportionate to its other obligations, the industry capacity was presumed to be adequate. Alternatively, if it should become established federal policy to assume the bulk of the burden of postearthquake private sector rehabilitation and restoration, the industry capacity should be adequate. But these two complementary strategies represented an edging away from the risk-taking function of the insurance business, forfeited a share of the market that might be lucrative, and suggested, whether or not correctly, that the

insurance industry could not handle this peril (and perhaps others).

That the risk was not yet quantified did not mean that it was not quantifiable. There were some who speculated that it might be possible, through various methods of selecting markets, distributing the highest exposures on some sort of a tolerable "FAIR SHARE"² program, combining the earthquake peril with other risks, and managing the deductible clause effectively, to handle all the earthquake business that the market could generate without exhausting or jeopardizing industry capacity. Others speculated that the industry could manage earthquake coverage by developing a program involving the federal government in a limited way to handle any portion of the financial burden imposed by a truly devastating earthquake that was demonstrably beyond industry capacity.

Among the considerations in assessing industry exposure was an impressive and growing body of engineering knowledge concerning earthquake damage mitigation. Remaining to be answered were legal questions regarding such matters as whether earthquake-resistant renovations could be required for existing buildings constructed in full compliance with subsequently outmoded building codes (for a discussion of this issue, see Miller, 1985).

The differences of opinion within the industry over how to deal with the earthquake insurance problem were, and are, rooted in the fact that insufficient statistical data exist to structure a dependable risk management program, and industry committees

continue to struggle with the questions of whether and how earthquake risks can be handled effectively.

Writing Earthquake Insurance: Actuarially Unsound?

In risk management, once the extent of a loss can be reasonably determined, it is possible to pursue various quantitative means for tolerably distributing that anticipated loss. An earthquake is recognized as a "fundamental" or "group" risk. Such risks are

caused by conditions more or less beyond the control of the individuals who suffer the losses, and since they are not the fault of anyone in particular, it is held that society, rather than the individual, has a responsibility to deal with them. Although some fundamental risks are dealt with through private insurance, it is an inappropriate tool for dealing with most fundamental risks, and some form of social insurance or other transfer program may be necessary. (Vaughan and Elliott, 1978, p. 10).

The peril of earthquake has long been considered uninsurable because, of the various methods of handling risk (avoidance, transfer, sharing, reduction, and retention), the processes of transfer and sharing of losses, upon which the business of insurance is based, require a capacity to predict probabilities within the law of large numbers. Again, the problem is that history has not yet provided a "sufficiently large sample" nor has it been possible to dependably identify a "sufficiently large number of exposure units" to permit effective application of probability theory (Vaughan and Elliott, 1978). Thus it has been widely accepted within the industry that in the absence of further data, earthquakes were not insurable within traditional insurance concepts.

Reinsurance capacity limits. In 1980, interviews with some industry leaders and published reports indicated there were some who were convinced that the worldwide reinsurance market was incapable of covering a PML of the magnitude that was then being projected for the San Francisco Bay area or the Los Angeles basin. There seemed to be no dependable projections regarding the PML for a repeat of the great earthquakes that occurred near New Madrid, Missouri; Charleston, South Carolina; and Boston, Massachusetts; but it was speculated that even greater losses might be inflicted by a major earthquake in certain high-risk east coast or midwest sectors than were being projected for California.

In 1980, the California PML projections were based on studies such as those done by Algermissen and others in 1972 (U.S. Department of Commerce, 1972; see also, Steinbrugge, 1978a, p. 203) and 1973 (U.S. Department of Commerce, 1973; see also, Rinehart et al., 1976 [summarized in Steinbrugge, 1978b]). It was expected that the results of the data call in 1978 by the California insurance commissioner (discussed above) would produce more dependable figures, the first set of which would be available during 1980, (but not before the 1980 Brown-Weston study was completed). The Algermissen studies, and those by Rinehart et al., Steinbrugge, and others had produced impressive, detailed estimates which were considered to represent the "state of the art" with respect to projecting the extent of property damage that would be incurred in Los Angeles or in San Francisco as a

consequence of an R8.25 earthquake (approximately the intensity of the San Francisco earthquake of 1906). The 1976 Rinehart study estimated single-family residential property losses at \$2.2 billion for an R8.25 quake along the San Andreas fault in the San Francisco Bay area. Steinbrugge's working group estimated that at 1978 prices, this figure would amount to \$4.1 billion. Similarly, Rinehart estimated single-family residential damage losses of \$4.0 billion for an R8.25 earthquake on the Newport-Inglewood fault in the Los Angeles basin, and Steinbrugge's 1978 update increased the figure to \$7.5 billion (Steinbrugge, 1978b, pp. 50-51). It is important to note that these studies were intentionally limited to "shake" damage and excluded secondary or tertiary consequences.

At the other end of the scale, a 1975 Report of the Special Earthquake Study Committee of the National Committee on Property Insurance (NCPI) recognized the "staggering proportions of the capacity problem that could be created by mandated coverage of one-to-four-family dwelling units in areas of high seismicity, and referenced estimates for California alone as showing an exposure of approximately 200 billion dollars" (Special Earthquake Study Committee, 1975). (Since it was first published, the \$200 billion figure has not been seriously advanced. More recent industry projections, taking into consideration all losses proximately related to the shaking event, such as worker's compensation, business interruption, fire, directors' and officers' and other professional liability lines, etc., range in the neighbor-

hood of \$60 billion. Estimates of the death toll range from 3,000 to 23,000, depending on the time of day, day of the week, and other critical factors.) If there was a justifiable concern over reinsurance capacity under existing market coverage, when that coverage was considered in the context of the inherent obligation to remain solvent with respect to all the other risk exposures underwritten by the industry, then there was little question at the time that mandated coverage for earthquake would clearly exceed industry capacity. Recently, a concerted effort has been initiated to ascertain with reasonable precision what the peripheral, or nonshaking, damages might be. One result has been the publication of a highly regarded study by Dames and Moore, regarding earthquake-caused fire losses (Scawthorn, 1987).

Reserves authorized under tax code. The anticipation of a PML of a magnitude in the neighborhood of \$60 billion intensified industry concerns over the limits imposed by IRS rules on the accumulation of reserves. Under the existing tax code and under the accounting principles traditional within the industry, the reserves needed to establish a fund sufficiently large to permit industry underwriting of major earthquake losses would be treated as taxable profits. Furthermore, the unique nature of insurance accounting practices poses for some observers the question of whether a functional reserve account could be established even if the IRS rules did not impose such an impediment (see, for example, Anderson et al., 1981).

Flood insurance experience. A precedent-setting "non-insurable" or "fundamental" risk is the peril posed by flood, primarily because "adverse selection" is so clearly applicable in flood situations. Experience, augmented by statistical data broadly disseminated, will assure that most people who have real property in a floodplain will be interested in affordable flood insurance, while those who do not reside or own property in a floodplain will be uninterested in purchasing flood insurance. The National Flood Insurance Act of 1968, provided for federal administration of the Flood Insurance Program. The act separated the flood insurance rate-making process into two distinct categories: chargeable premium (subsidized) rates and estimated risk premium (actuarial) rates. The insurance industry, permitted by the act to originate coverages and to service policies and claims, and to receive appropriate premiums for doing so, had become increasingly disenchanted over its relationships with the Flood Insurance Administration, primarily because the administration insisted on the need to participate in decisions regarding rate making and other business matters of the insurance industry. This experience caused many industry leaders to resist any efforts to structure a similar program for earthquake coverage. Others believed, however, that given the need for catastrophic reinsurance, the federal government was the only place to turn if the industry was going to be persuaded and/or directed to write substantial amounts of flood insurance.

Recently, the Federal Insurance Administration (FIA) instituted its "Write Your Own" program, a process in which private insurers sell and service flood insurance under their own names with the federal government as a guarantor against losses. The program has been well received by the industry and has assuaged many of the objections held earlier by the insurers.

Practices of investment versus premium charges. During the period when the first figures in response to the California insurance commissioner's data call were being accumulated, the property/casualty industry was in the midst of the "soft market" phase of what had been identified as a cyclical financial pattern (Cheney, 1987, pp. 25-27, 31). Because of the high interest rates then in force, the industry recognized an opportunity to earn attractive profits by investing funds to the greatest extent possible. This opportunity prompted some firms to lower premiums in order to generate additional investment capital, in turn causing other companies to reduce premiums to be competitive. More recently, that pattern changed dramatically when interest rates declined rather precipitously in the early 1980s, with the efforts to adjust to an abruptly different marketplace producing some uncommon responses, discussed below, which might have anti-trust implications (see Strumwasser, 1986).

Risk Assessments, Premium Categories, Ratings Standards

The present system used in California establishes earthquake insurance rates primarily on a county-by-county basis, the entire state being divided into eight multicounty letter-designated segments, with segments A (San Francisco area) and B (Los Angeles area) being subdivided into three subcategories each. In addition, residential buildings are classified into seven basic categories, some having from two to five subcategories, representing different types of construction. Single-family wood-frame structures are assigned a low risk factor; unreinforced solid masonry structures with brick and sand-lime mortar have one of the highest. Within a given county zone, all buildings of a particular type or class are assigned the same rate, even though local building codes may have dictated differing qualities of construction from one municipal jurisdiction to another. The rating is of the hazard; insurance industry rating practice would not differentiate between a building that had been "rehabilitated" and one that had not. In theory, perhaps, an individual property should be entitled to a premium reduction to reflect an improvement to reduce earthquake damage, but for rate incentives to encourage code modifications or construction practices leading to damage mitigation, the rating process in California would have to be substantially modified. Furthermore, the industry would have to speak and act in concert to avoid geographical fragmentation, and the process might be very unwieldy and expensive to operate. Even if the process was uniformly applied, the prospect

of doing business competitively would seem to be jeopardized, and antitrust considerations might be raised, even if the state was one where prior approval of rates was necessary.

The California Data Call Program

The role of the department of insurance varies from state to state. Under California's "[n]o-file or open competition laws," which have been in effect since 1947, "companies are not required to file their rates for approval of the commissioner of insurance. Insurance companies and rating bureaus may adopt rates and make them effective immediately without this prior approval. . . . The California law makes it clear that competition, not government authority, is the preferred governor of rates, and that barring the existence of an anti-competitive situation or practice, the insurance commissioner is not to regulate rates as such" (Vaughan and Elliott, 1978, p. 140). The responsibility of the commissioner is to assure, within reason, the continued financial ability of each insurer or reinsurer to handle covered losses (Department of Insurance, 1984, p.7).

Reasons. As mentioned previously, in order to make "it possible to estimate the aggregate industry exposure to a great earthquake" and to "have quantified information when developing specific plans of action for dealing with the earthquake threat" (Department of Insurance, 1984, pp. 7-8) the California insurance commissioner issued a data call regulation setting out reporting requirements designed to produce, within a reasonable period of time, the necessary statistical data. General publication of the

data by the commissioner's office would enable the industry to make pertinent business judgments in a sound manner.

Specifics and progression. The data call was issued on August 8, 1978, and has been the source of each annual California Earthquake Zoning and Probable Maximum Loss Evaluation Program Report since 1980 (Department of Insurance, 1980-1988). In 1980 a significant segment of the industry failed to file timely returns, but subsequent reporting has been considerably more diligent. Some deficiencies were identified in the initial data requirements, and subsequent modifications produced data that were more functional. The sixth yearly report, California Earthquake Zoning and Probable Maximum Loss Evaluation Program, based on the data requested, was published in June, 1986 (Department of Insurance, 1986).

Changes Since 1980

In the period since 1980, a number of significant changes and developments have occurred. Specifically, as mentioned above, most credible scientists now believe that California will experience an earthquake of R8.2 or greater either before or soon after the turn of the century. Additionally, contrary to optimistic expectations of a few years ago, it is now generally conceded that accurate, short-term earthquake prediction will not be possible in the near future. A number of more specific changes are addressed below.

Changes Reflected in the Annual Department of Insurance Reports

With respect to the risks related to earthquakes, there are, on the one hand, a number of factors, including recent judicial decisions applying the doctrine of concurrent causation (discussed in detail below, see Department of Insurance, 1986, pp. 15-16), inflation, the effect of Assembly Bill 2865, inclusion of earthquake-related costs of such matters as business interruption, unemployment, and similar socioeconomic disruptions, which, when taken into consideration, generate a much greater PML due to a major earthquake than did the earlier, admittedly limited, assessments.

On the other hand there is also room for optimism. The 1984 report of the insurance commissioner, though noting that "large earthquakes do occur frequently and could occur along the California coast at any time," also adds, "The hopeful aspect . . . is that a large earthquake need not be as great a disaster as it could have been in the past. Significant advances have been made in the design and construction of earthquake resistive structures, and the building codes have been updated to reflect these advances." Further, it advises that "great efforts are being made by government and private industry in earthquake preparedness and in measures to protect computer records, communications, and other essential equipment and functions." Finally, however, it cautions that "the older buildings still remain vulnerable" (Department of Insurance, 1984, p. 7).

As mentioned earlier, Miller has published an important study which helps to dispel a long-held premise regarding "grandfathered" buildings. It had been generally accepted that a building constructed in compliance with building code requirements in effect at the time of construction could not later be subjected to governmentally ordered upgrading to bring it into compliance with newer, more demanding code prescriptions unless the contemplated renovations required replacement of components or systems which were by then regulated by newer codes (Miller, 1985). Miller's study demonstrated that when public safety and health are directly involved, the police powers of state and municipal governments suffice to require essential upgrading or razing, whether other renovations are contemplated or not.

Even before 1980, California had experimented with the opposite side of this coin by permitting seismic-stress-resisting structural changes to be made even to the extent of substantial renovation—without having to replace existing "mechanical systems" (i.e., electrical, plumbing, heating, systems, etc.) which did not fully comply with currently applicable code requirements—if to do so would enhance the public safety (Brown and Weston, 1980, endnotes 11-12).

Department of insurance questionnaire: results to date.

The "main purpose" of the reporting requirement "is to make an effort to quantify each insurance company's exposure to a large earthquake" (Department of Insurance, 1986, p. 4). The 1986 report itemizes several "important benefits" that have already

been "realized from these reporting requirements." It states that the questionnaire "gives a simple methodology for estimating the probable maximum loss on an insurance company's business in each zone. Thus an insurance company can estimate its earthquake exposure in each zone and determine its concentration of risk." It continues, "[The] relative risk between construction classes" is also given, thus enabling a company to "limit its earthquake exposure" by allocating its exposure among the classes. It notes that some companies, after working with the questionnaire, have "decided to extend and refine their analysis of the earthquake risk. This is usually done by taking into consideration proximity to known active faults and soil conditions." It adds, "Re-insurers often use the questionnaire to monitor the earthquake exposures of their primary companies. . . . The Department of Insurance uses the reports to monitor each company's exposure in relation to the company's surplus. . . . The questionnaire makes it possible to estimate the aggregate industry exposure to vibration damage from a great earthquake." The Department believes that a "better insurance product will develop in terms of price and coverage" and that "it can be shown that certain types of homes, because of construction and location, have a very limited risk from damage from earthquakes" thus making it possible for such homes to "have earthquake coverage at nominal cost" (Department of Insurance, 1986, pp. 4-5). This last concept should be evaluated under the caution set forth in Steinbrugge's "micro-zonation" perceptions (see Steinbrugge, 1978a, p. 208).

One fact that the questionnaires have helped to clarify is that large commercial establishments and municipal governments, to a surprisingly large extent, have provided themselves with earthquake insurance (possibly because of the in-house availability or the retention of trained risk managers). Because each business is unique in needs, finances, risk judgment, and other factors affecting their decisions, it is not possible to detail the process generally, but Vaughan and Elliott (1978, p. 500) note that DIC (Difference In Conditions) coverage is often written (DIC is a special form of all-risk coverage written in conjunction with basic fire coverage and designed to provide protection against losses not reimbursed under the standard fire forms, including flood and earthquake), there is often an excess of loss element in the package, and often a number of locations are included within the package negotiated by a given firm. Often there will be a strong, but carefully defined, self-insurance component, with either municipal governments or large industries. It has been suggested that as much as 50% of all large industry and commercial entities have some program of earthquake insurance (see Cheney, 1987, p. 232).

Technical evolution. The 1983 Coalinga R6.7 earthquake; the 1984 Morgan Hill R6.2 earthquake; and the 1985 Michoacan ("Mexico City") R8.1 earthquake combined to increase public awareness of continuing seismic risk, and also provided testing grounds for engineered mitigation efforts. There has been encouraging progress in developing an understanding of seismic forces and in

engineering mitigative measures which can dependably reduce damage and personal injury. Indeed, buildings constructed in compliance with modern "earthquake codes" which subsequently experienced substantial seismic shocks have generally performed close to design expectations (see, for example, Department of Insurance, 1984, pp. 16-18). Land use controls have been less impressive in application and in demonstrated performance, possibly because the area of exposure is usually fairly large; because ground motions created by an earthquake vary in nature and effect with the geologic formations involved; because, in contrast with floodplain designations, there is no "earthquake plain" readily identifiable and quantifiable; and because the laws regulating land use are less certain in application since their functions and purposes are far more comprehensive and interrelated than are those regulating construction practices and materials. California's unique Alquist-Priolo Special Studies Zone Act, mentioned above, demonstrates the limited effectiveness of land-use legislation, as well as its susceptibility to abuse or misapplication (see Palm, 1981, p. 94).

Economics and Need to Make Premium Charges Sound

As mentioned above, the late 1970s and early 1980s were considered a "soft market" with respect to property/casualty insurance. The trend, with respect to earthquake insurance, was toward lower premium costs. In California, the premium rate ranged in the neighborhood of \$1.50 to \$2.00 per \$1000 of insured value, with a 5% deductible clause (Department of Insurance,

1986, p. 17). As noted, there was a considerable tendency within the industry to generate business by price cutting which was sometimes not actuarially sound. The nonallocated funds so produced were channelled to interest-bearing investments.

When interest rates began dropping significantly and rapidly in 1984, a number of companies found that their premium structure was not satisfactory and began to remedy the situation. One obvious strategy was to increase premiums; another was to diminish risk. One means of diminishing risk was to limit doing business in, or to withdraw from, high-risk market sectors; insurers became reluctant to write coverage in areas where large claims had been awarded. It was similarly logical to avoid or diminish the amount of business in areas where insufficient historical data precluded the application of the principle of large numbers—in other words, in fields such as earthquake insurance. Counterpressure arose, however, due to the decision in the 1982 Garvey case (discussed in greater detail below) which, by invoking a broadened concept of "concurrent causation," threatened to incorporate earthquake coverage into every "all risk" policy, in spite of any clause expressly excluding earthquake or earth movement.

In late 1984 and early 1985, when interest rates had leveled off substantially below the levels of previous peak years, one noticeable consequence in California was that a number of insurance firms began requiring a 10% deductible with earthquake coverage.

At the time of the 1980 study, earthquake insurance was available to anyone who requested it, but the coverage was not pushed in the marketplace (Brown and Weston, 1980, p. 15). There were several reasons for this caution. First, agents did not find that commissions earned adequately reflected the effort needed to promote the coverage (this, in turn, perhaps being a reflection of the general industry reluctance, noted above, to push earthquake insurance). Again, there was general industry acceptance of the premise that a major earthquake impacting a metropolitan area could inflict an awesome amount of property damage. Even worse, from an economic perspective, the industry recognized that the peril, by its nature, should stimulate "adverse selection" on a regional and/or type-of-construction basis. Moreover, the major residential market (wood-frame buildings) was (and is) structurally less vulnerable to severe damage than almost any other construction class, thus lessening the attractiveness of any endorsement carrying a deductible clause (even though such a clause was necessary to establish economically tolerable, if not actuarially sound, rates).

The Garvey Case and the Concurrent Causation Complication

The decision of the Superior Court, City and County of San Francisco, in Garvey v. State Farm Fire & Casualty Co.³ startled the property/casualty insurance industry by finding applicable the California doctrine of "concurrent causation" (see Department of Insurance, 1984, pp. 22-25; 1985, pp. 5-17; and 1986, pp. 15-16). Under this doctrine, the court said, an insurer could be

held liable for indemnification of loss caused by earth movement even though the property insurance policy involved contained the customarily used standard clause expressly excepting from coverage damage or injury caused by earth movement. Even though Garvey's property insurance policy "specifically excluded earth movement" the court found that because Garvey's policy provided "coverage for damage caused by negligence," the Garveys were entitled to damages in the amount of \$47,000 as a consequence of the separation of a subsequently built addition from the original structure. Invoking the concurrent cause doctrine, the court based its award on the finding that the loss was "caused mainly (or at least proximately) by negligent construction of the house addition." On appeal, the question of whether the "tearing away" of the addition was attributable to or independent of the earth movement was before the court, but its decision reversing, to allow a jury to reach that issue, was vacated under California law when the California Supreme Court granted review (see endnote 3).

Garvey's ultimate significance will probably be associated more with the legislation it produced than with its ultimate judicial resolution. Under strong pressure from property/casualty insurers, the California legislature responded even before the Court of Appeals rendered its decision. The compromise statute which emerged (Assembly Bill 2865, which, as chapter 916, 1984 California Statutes became chapter 8.5 of the California Insurance Code) required all insurers writing

property/casualty coverage in California to advise their policy holders that they would, if requested, write an earthquake endorsement and to state the terms on which they would do so. This once-only mandatory offer had to be made no later than the next premium billing date. In exchange, the statute provided that the doctrine of concurrent causation would not be available to policy holders who elected not to take advantage of the offer to procure earthquake/earth movement protection.

The California Post-Garvey Statute and its Repercussions

Even before the stimulation provided by Garvey, the insurance industry had embarked on a thoughtful and detailed re-assessment of its earthquake coverage policy. Garvey's "concurrent causation" application compounded the financial threat already hovering over the industry and triggered the intensive lobbying effort which produced the above-mentioned compromise, the 1984 Earthquake Insurance Act, which took effect on January 1, 1985. Section 2 of this new statute stated that:

It is the intent of the Legislature in enacting this act to promote awareness of earthquake insurance by residential property owners and tenants by requiring insurers to offer that coverage. It is the intent of the Legislature to make clear that loss caused by or resulting from an earthquake shall be compensable by insurance coverage only when earthquake protection is provided through a policy provision or endorsement designed specifically to indemnify against the risk of earthquake loss, and not through policies where the peril of earthquake is specifically excluded even though another cause of loss acts together with an earthquake to produce the loss. [emphasis added]
(California Statutes 1984, ch. 916, Sec. 2)

The public benefit written into this contra-Garvey legislation (referred to as A.B. 2865) comes from the provision that:

No policy of residential property insurance may be issued or delivered, or, with respect to policies in effect on the effective date of this chapter, initially renewed in this state by any insurer unless the named insured is offered coverage for loss or damage caused by the peril of earthquake. (Chapter 916, §1, chapter 916, California Statutes, 1984)

Section 10083 of this "Earthquake Code" requires the insurer to provide notice, in clear language and in large print, advising existing policy holders that:

YOUR POLICY DOES NOT PROVIDE COVERAGE AGAINST THE PERIL OF EARTHQUAKE. CALIFORNIA LAW REQUIRES THAT EARTHQUAKE COVERAGE BE OFFERED TO YOU AT YOUR OPTION. . . .

It also requires the insurer to advise the insured specifically as to the amount of coverage which would be offered, the applicable deductible, and the rate or premium to be charged.

Data acquired in time for incorporation into the 1986 insurance commissioner's report indicate that as the result of this mandate the number of California residential properties covered by an earthquake endorsement increased from 7% to about 15% (Department of Insurance, 1986, p 15). There are indications that this increase is much firmer than increases precipitated by major earthquakes--increases which lapse as apprehension wears off.

Other Changes Taking Place

Garvey was not the only "sea change" taking place in the mid-1980s. The insurance industry was also jolted by what were viewed as alarmingly large jury awards in negligence liability cases and feared that such awards could seriously jeopardize the financial integrity of the industry. That very integrity had

recently been put into question, as mentioned above, when many companies, lured by unusually high interest rates, had attempted to generate investment capital by setting policy premiums lower than sound fiscal management might have dictated. This trend was quickly reversed in 1985, when a substantial drop in interest rates forced a number of firms to restructure their premium charges substantially in order to assure fiscal integrity.

These eccentric patterns engendered conservative attitudes among domestic reinsurers (Department of Insurance, 1986, p. 16), and appeared to stimulate a severe tightening of the international reinsurance market, which, even in the best of times, was more difficult to measure with confidence. Reinsurers became increasingly reluctant to maintain prior levels of exposure as U.S. courts granted ever larger damage awards. Indeed, some reinsurers appeared either to pull out of the earthquake market altogether or to become very selective in reinsuring earthquake.

Recent Increases in PML Projections

An additional factor contributing to the erosion of the industry's reinsurance capacity was the emerging projection of a much higher PML than that found in earlier projections. These newer figures were partly a reflection of inflation in property values and also of the end of the soft cycle in the investment market. The increased exposure stimulated first by Garvey and later by A.B. 2865 also was significant. More substantial in effect, however, was the incorporation of a more comprehensive set of considerations, such as business interruption, worker's

compensation, etc., into the calculations. It was significant that some projections produced gross PML figures as much as ten times greater than the several billion dollar amounts listed in earlier estimates which did not take all of these damage potentials into consideration.⁴ On the other hand, the PML was impressively reduced when a 10% rather than a 5% deductible clause was used (Department of Insurance, 1986, p. 16).

Reassessment of Capacity

One significant consequence of these and other changes was that industry leaders no longer debated whether the industry had the capacity to underwrite earthquake on a comprehensive basis. It was obvious that such capacity either did not or soon would not exist (see Cheney, 1987, pp. 40-41). This recognition in turn drove industry leaders toward a consensus that some form of federal involvement in reinsurance would have to be established to deal with catastrophic losses exceeding industry capacity. What that excessive figure would be and how such a federal program could be structured acceptably were matters to be worked out within the industry. Committees were formed, studies were vigorously pursued, and informal discussions were held with FEMA to discuss the matter. Out of this effort undoubtedly will come a draft bill for submission to Congress, once final details of the contemplated catastrophic earthquake reinsurance program are worked out within the industry and between the industry and FEMA.

The Legislative and Regulatory Environment Today

The following section is a brief description of federal and state legislative and regulatory efforts since 1980 which affect the property/casualty insurance industry. It does touch on anti-trust matters, but a more thorough discussion follows at the end of this paper. The subsequent section identifies selected industry practices and developments which by their nature might have the potential to trigger an antitrust challenge.

Historically, the regulation of the business of insurance has been the province of state governments. When the 1944 South-Eastern Underwriters decision abruptly interposed broad federal preemption, Congressional reassessment quickly produced the landmark McCarran-Ferguson Act,⁵ which provided a limited exemption from federal antitrust laws for the insurance industry and assured state governments a considerable continuing power to regulate the industry. California, which had its own antitrust statutes, responded to McCarran-Ferguson by enacting, in 1947, the McBride-Grunsky Insurance Regulatory Act granting the industry certain immunities from those laws.⁶

In 1987, bills were introduced both in the California legislature and in the Congress to weaken the existing antitrust exemptions. A climate for such legislation had been created by the unfavorable publicity which the insurance industry had received as a consequence of the withdrawal of various members from important markets and/or marketplaces, and as a consequence of sharply increased premiums in some lines of insurance.

Some members of the industry, however, felt that premium increases appeared substantial, abrupt, and disproportionate to general economic trends because, as mentioned above, during the soft cycle of the property/casualty market many insurers came to depend too much upon the high interest rates earned in the investment market and not enough on sound underwriting. Again, when the soft cycle ended, an inevitable consequence was that the rates these companies had to charge to assure solvency were markedly higher; still, they were rates which, had they been apportioned over a longer time period, might not have seemed so severe. However, the fact remains that unanticipated developments, such as the trend toward higher and higher jury awards in personal liability cases and changes in the law such as those that followed the Garvey case, contributed substantially to the "fear" that in part led to rate increases that were sufficiently dramatic to stimulate concern among the general public and legislative bodies.

Federal Legislative Activity

At the national level, Senator Simon (D., Illinois) on March 20, 1987, introduced to the 100th Congress, 1st Session, Senate Bill S804, entitled "Insurance Competition Act of 1987," which was referred to the Committee on the Judiciary. In essence this bill would have replaced the general exemption of McCarran-Ferguson with a provision that the antitrust law shall apply to the business of insurance or to acts in the conduct of such business except in certain situations enumerated in the bill.

A somewhat different, more artfully drafted bill with the same general purpose was later submitted by Senator Metzenbaum (D., Ohio), and it, too, was submitted to the Committee on the Judiciary. That bill, the stated purpose of which was "to amend the McCarran-Ferguson Act to limit the federal antitrust exemption of the business of insurance, to reaffirm the continued state regulation of the business of insurance, and for other purposes," was titled "Insurance Competition Improvement Act of 1987." One of its express findings was that "the current broad exemption from the antitrust laws afforded the insurance industry has adversely affected free competition and consumers of insurance." The bill stated that "it is the purpose of this act to promote free competition among insurers and to protect consumers of insurance by modifying the current antitrust exemption of the business of insurance."⁷

Both bills failed in committee.

State (California) Legislative Activity

The California legislature took a different, earthquake-specific approach. On March 4, 1987, State Senator Alan Robbins introduced Senate Bill 1015, providing that the California FAIR Plan Association's (see endnote 2) basic property insurance coverage must "provide indemnity for direct loss due to the peril of earthquake" (California Senate Bill 1015, March 4, 1987). The senate committee consultant's report on the bill summarizes staff comments recognizing that "earthquake and residential property insurance coverage is not available in certain high risk areas of

the state" (Bianco, 1987, pp. 1-2). Those comments also suggest that, contrary to earlier media reports, there is evidence of a distressed market for earthquake insurance in California. The report also notes that some insurers have initiated a practice of cancelling homeowners' coverage in those instances when the insured responded affirmatively to the A.B. 2865-mandated "offer" to provide earthquake coverage (Bianco, 1987, p. 2). However, insurance executives from both the public and the private sector have stated (at the Boulder workshop, see endnote 1) that only a very few companies have taken this approach. One insurance trade association executive added that, within his knowledge, no similar mandate had been enacted in any other state and no insurer was arbitrarily cancelling earthquake protection or arbitrarily refusing to write it. In an earlier conversation with one of the authors (Brown), that same executive opined that with respect to locations where "adverse selection" was an obvious element, a company might elect not to underwrite earthquake. He said, in effect, that it does not take much effort nor does it require collusion for an insurer to recognize and avoid an odious situation. Similar comments were made by another trade association executive at the Boulder workshop.

California legislative consultants attending the Boulder workshop, which convened on July 17, 1988, the day following the end of the 1987 California legislative session, reported that the above-mentioned Robbins bill, S.B. 1015, had not been enacted.

Regulatory Matters and a Possible State-Action Question

The right of businesses collectively to petition government for legislative or regulatory measures is a significant and sometimes complex area of law. Included in it is an area of exemption from application of antitrust law known as the "state action" exemption. This sanctuary is doctrinally recognized with respect to certain industry interactions which, though in themselves anticompetitive, take place under state directive and continuing supervision because the state has recognized that such interactions are best conducted in the specified manner for the good of the general public. The cooperative reporting called for by the annual data call authorized by the California insurance commissioner can be examined in light of this doctrine. Some participants at the Boulder workshop speculated that there seems to be no strong consensus that the regulation as now worded and applied would qualify for the presumed "state action" exemption. The perceived weakness seems to be that the state directive is not sufficiently mandatory; rather, it may be merely permissive, and the speculation is that if the latter is true then the exemption would not be available. This example at least illustrates that the so-called state-action exemption is not always as easy to apply as it is to explain; still, to date there has been no antitrust violation challenge raised with respect to the data call reporting process.

Industry Practices

There are certain insurance practices which might suggest that antitrust constraints exert considerable influence on the industry and several which competent antitrust counsel might consider worthy of attention. The industry itself is unique; it enjoys at present a considerable antitrust exemption; and it is variously, and some say relatively lightly, burdened by regulatory supervision at the state level. Though the extent of regulation varies considerably among the states, it is fair to say that all states "require that insurance rates must not be excessive, must be adequate, and may not be unfairly discriminatory" (Vaughan and Elliott, 1978, pp. 86, 138). Some of these areas merit attention and analysis.

Ratings

Rate making is a complex process involving experience and judgment as well as data.⁸ Rate-making bureaus stem from the post-Civil War period of abuses by insurance companies which stimulated the legislature in New York State to appoint an investigative committee, chaired by Senator W.W. Armstrong, to look into life insurance abuses. The exemplary work of this committee was followed in 1910 by the Merritt Committee, which explored the property insurance industry. Prior to this effort, many states had passed "anticompact laws" prohibiting insurance companies from joining together to make rates, a constraint which severely impeded the application of the principle of large numbers. Many insurance companies went bankrupt following the San Francisco

earthquake and resultant fire, which the case law of the time held to be a covered risk. One principal reason advanced for the bankruptcies was the charging of inadequate rates. An understandable response was that "fire insurance rates then increased throughout the country in what appeared to be a concerted action" (Vaughan and Elliott, 1978, p. 134). The Merritt Committee recommendations "opposed the anticompany laws and urged that rating bureaus be recognized, and further that a company be permitted to belong to a rating bureau, or to file its rates independently if it chose" (Vaughan and Elliott, 1978, p. 134). Rating bureaus are a recognized and legitimate activity under McCarran-Ferguson and state laws, and as long as they publish rates that do not add in a "loading" factor for individual member overhead and profit, their operations do not violate antitrust law.

Today the principal rating bureau for the property/casualty insurance industry is the Insurance Services Office (ISO). Under the California FAIR Plan, companies voluntarily providing basic property insurance in such designated areas are proportionately relieved of liability to participate in the FAIR Plan. The Robbins bill (S.B. 1015 [at §2] mentioned above), proposed to "provide for proportionate relief from liability to participate in the [FAIR] plan for insurers who voluntarily provide earthquake insurance in areas designated as earthquake hazard areas by the Insurance Commissioner."

Lobbying and Informational Activities

The first amendment protects all legitimate efforts to inform legislative bodies of the wishes and demands of citizens. Representatives of insurance companies are free to congregate for the purposes of discussing and establishing points of agreement and/or difference with respect to matters that are or might become the subject of legislative or regulatory attention. Associations of insurers can and do employ lobbyists to monitor pending legislation and to speak for the segment of the industry represented.

Educational efforts by the industry to increase the public's knowledge and understanding of earthquake hazards and to provide useful information on what private citizens can do to diminish their own vulnerability to earthquake damage are extended both through individual company initiatives (with specific advertising credits established) and through industry trade associations and other authorized voices. The technical competence and knowledge within the industry are made available in various ways, including funding assistance, to support the modification of local and state building codes. Assistance and guidance may be offered to federal and to state legislatures to encourage such measures as tax abatements to reward sound efforts to render real property less vulnerable to earthquakes. Such efforts can include industry association originated policy positions and lobbying efforts by association representatives, company representatives, individuals, and, if effectively stimulated, clients.

The National Association of Insurance Commissioners (NAIC) invites to its biannual meetings representatives of the insurance industry "to lobby their positions" and in turn "makes recommendations for legislation and policy" (Vaughan and Elliott, 1978, p. 136).

Most industry lobbying at the national level is done by one or more of the three major trade associations, the National Association of Independent Insurers (NAII), the American Insurance Association (AIA), and the Alliance of American Insurers (AAI). State-level lobbying is conducted primarily by organizations such as the Association of California Insurance Companies. There is often a collective effort made to educate and inform not only members of the legislature, but especially the general public. The Insurance Information Institute is the most comprehensive organization of this sort, and its activities are financed through the participation of a large number of insurers.

Response to Demands by Mortgagees

To date there has been no broad-scale demand by mortgage lenders requiring earthquake insurance as a condition for loan, though there have been a few lending institutions in California which have without fanfare required such coverage, at least where the security property was situated in a known earthquake hazard area (see Palm, 1983, pp. 85, 121; 1985c, pp. 63, 67-68; 1985b, pp. 139, 146-152. Note that "structurally poor ground," such as soil subject to liquefaction, is such an area, though it would not be singled out under the Alquist-Priolo Act. For such poor

ground, according to Steinbrugge (1978a, p. 208), the premium charge for an earthquake endorsement would be assessed at a uniform 25% rate penalty. Of course, the leverage that could be brought to bear by lending institutions would not be directly imposed on insurers. Rather, as a condition of loan, the requirement would be impressed upon the loan applicant, as has typically been the case with respect to fire and extended coverage policies. The FNMA and the FHLMC, through a simple modification of the hazard insurance paragraph of the uniform covenants of their standardized mortgage and trust deed instruments, could impose a specific earthquake insurance requirement as a condition for acceptance of a mortgage security into the secondary market, and such a demand could be geographically selective. If such a requirement were imposed, the insurance industry would have to determine whether the demand would force it beyond its capacity.

It could also be anticipated, because some of the most earthquake-vulnerable residential and light-commercial property lies within urban sectors predominantly occupied by low-income residents, that the legislature would impose for such areas some version of a FAIR Plan. Certainly vigorous negotiations between insurers, secondary lenders, loan originators, and state and federal legislative bodies would precede such a decision. The fact that some borrowers would be more attractive clients than others and that distinctions could often be recognized within

geographical delineations might provoke struggles over just how the insurance burden might be fairly allocated.

If the market for loan-condition insurance coverage was not readily serviced by the industry, charges of discrimination could be expected from prospective borrowers who were precluded from obtaining financing or whose financing was substantially delayed.

In recent years, life insurance companies have expanded operations into the property/casualty field. They have also invested heavily in the mortgage finance arena. Some broad coverage companies have invested in pass-through or other mortgage-backed securities. The recent period of "creative financing" techniques (which seem to be getting more attention again after a period of relative quiescence stimulated by the low interest rates of 1984-86) produced various equity-participation loans. Today a strong marketing effort is being made with respect to "home equity" financing for retirees and others with considerable equity build-up. It would not be unusual for a lender with an equity position in a property parcel to require, directly or indirectly, earthquake insurance as a condition of participation. Such a lender also could have an interest in an insurance company which marketed hazard insurance for real property, given the complexities and intricacies of today's mortgage finance market.

One matter that insurers might be forced to consider with respect to earthquake insurance on mortgaged property is the loan clause giving the lender the right to apply insurance payments,

made in satisfaction of claims involving property damage, toward the settlement or the reduction of the outstanding secured indebtedness. Most such clauses provide that the insurance claim payment must be applied toward restoration of the damaged property, but also contain a "take-out" provision permitting the lender to divert the claim payment to reduction of the secured indebtedness in the event that the security property cannot be renovated to the point where its security value is adequate for the purpose. Considering that location is a major determinant in establishing value, it is possible under certain circumstances that common wisdom, factual impossibility or legislative mandate might preclude continuation of previous uses with respect to a given neighborhood or sector. The "Turnagain" area in Anchorage, and the relocation of Valdez, Alaska, stand as examples of such a possibility. But on a less dramatic scale, simple market reaction or demand factors might be enough to negate or diminish for a considerable time any sound resale potential for earthquake-damaged property subjected to default in mortgage debt service. Under such a situation and taking into account state statutes, a lender might well elect to insist on the allocation of damage indemnity claims payments to it for debt reduction application.

It is highly probable that if a significant demand for earthquake insurance emerged, insurers would find it desirable to unite in a policy of response. Lender reliance on inflation and equity build-up to protect the value of their security interests

may not always be productive. Unless some sort of blanket loan portfolio policy is developed, the insurance industry may be faced with a situation where the value of the "parts" of a mortgaged residence may have to exceed the insurable value to avoid a consumer revolt. In other words, if the lender can selectively deal with different neighborhoods in making the election whether to apply insurance claims to renovation or to debt reduction, then the consumer can be put into the position where a lesser damage, for which renovation is more desirable and less burdensome, may result in the subject residence being restored to habitability and thus to its best potential for present or future marketing. On the other hand, for property so damaged that the insurance payment would come close to satisfying the entire loan, which presumably would be more likely to entice a lender to divert the payment to debt satisfaction, the homeowner could find himself with a satisfied loan, a seriously damaged premises, and insufficient funds or borrowing capacity to restore the property to habitability. In such a case, payment for "parts" damaged would result in a completely functional home, while "replacement" payment would leave the property owner with a useless or costly property that was not readily marketable even in a seller's market.

Building and Zoning Code Changes and Interactions

Engineering studies and technological advances during the past two decades have made it possible to avoid or to diminish many previous structural vulnerabilities to earthquake damage.

The Uniform Building Code, developed by the International Conference of Building Officials (ICBO) has been accepted as the state building code in California, and, with some localized modifications, has been promulgated as the official code by most California communities. The Uniform Building Code now includes an earthquake section. The City of Los Angeles Municipal Code has incorporated as Division 68, "Earthquake Hazard Reduction in Existing Building," provisions "requiring owners to retrofit unreinforced brick masonry buildings" (Miller, 1985, p. 100).

Engineering knowledge gained over the last decade or two, and its dissemination and application, has made it possible for the Insurance Commissioner of California to observe that the PML for a major earthquake in Los Angeles or San Francisco would be substantially higher were it not for the incorporation of modern seismic design (Department of Insurance, 1984, p. 7, 24-25).

HUD Code and manufactured housing. In our 1980 study, we noted the vulnerability of "mobile homes" to natural hazards and reported differing attitudes about regulatory insistence on certain known safety measures such as storm anchors. Still new at that time, the Manufactured Home Construction and Safety Standards Code, often referred to as the "HUD Code", was and is our first and only national building code. This code is limited in application to "manufactured homes," the designation for houses built under the provisions of the Manufactured Housing Act and the regulations promulgated thereunder. California has legislatively accepted the manufactured homes program, as have fourteen

other states. The HUD Code provides for and requires that Manufactured Homes be anchored to solid foundations, and mandates other safety features not assured in the "mobile home" that is not built to the HUD Code standards. With the acceptance by California of HUD-Code-complying manufactured housing, it would not be permissible for such a product to be generally excepted from earthquake insurance coverage. Before the HUD Code, "mobile homes" were given a specific category, "Class 1E" in the California classification of seven major types of real property. Since one major risk for mobile homes subjected to an earthquake was that they might be jolted or shaken off their foundation supports, the HUD Code provisions may justify a different rate structure. As the cost of housing continues to outpace earning capacity of a large portion of our citizenry, it is a reasonable presumption that an increasing percentage of single family detached housing will be provided by the manufactured housing industry. Whether such housing will in fact be treated by lender and/or insurer in a manner suggesting improper discrimination remains to be seen.

Geographical Selection (Redlining Implications)

If a case could be made that a denial of earthquake insurance was based on any improperly discriminatory basis, such a denial might be challenged on the ground that it was done in restraint of trade. If a given geographical area was unattractive because of unstable soil, inhabitation by low-income residents, or a preponderance of "pre-code" lime-mortar un-

reinforced masonry construction, a deliberate "redlining" by a lender or by an insurer of such an area would raise the question of whether the discrimination was within permissible regulatory limits (see Palm, 1985a, p. 655). The California Administrative Code regulation prohibits "redlining," which it defines as refusal to grant mortgage loans to otherwise qualified buyers for sound property in designated areas. Palm advises that "California state law prohibits lending institutions from denying home loans or discriminating in setting the terms or conditions of such loans if the denial or discrimination is based on 'conditions, characteristics, or trends in the neighborhood or geographic area' in which the property is located 'unless the financial institution can demonstrate that such consideration in a particular case is required to avoid an unsafe and unsound business practice'" [emphasis added] (1985a, p. 658-659). Upon challenge, the initial burden of proof would seem to be on the financial institution (see Benston, 1978, for a good general discussion of redlining).

One must wonder whether the same standard with respect to "unsound business practice" would be available to insurers and whether it would be protection against antitrust considerations. It is widely known that certain sectors of Los Angeles, for example, are replete with old lime-mortar unreinforced masonry buildings. In a personal interview with one of the authors (Brown), one insurance industry leader, when asked whether insurers would be inclined to consult with one another with respect

to deciding not to write earthquake insurance in such areas of potential devastation, observed, in essence, that they would not need to get together to avoid such an odious situation. In other words, each insurer could be expected to avoid such a situation as a matter of good business judgment. This judgment might result in de facto designation of a geographic area which would go uninsured in the absence of a FAIR Plan approach such as discussed above. As the Robbins bill, A.B. 1015 indicated, California has no such program applicable to earthquake risks.

"Leveraging" of Agents and Brokers via "Reinsurance Dry-up"

During the period of soft market recently experienced, the threat of a foreseeable major earthquake came to be more generally accepted, the general public became more interested in purchasing earthquake insurance, and a window of opportunity thus opened up which generated a new source of competition for earthquake underwriters. In 1983, as the Garvey case was stimulating the concern which led to the A.B. 2865 statutory offer, each of the three agent/broker trade organization groups took action; the "IIABC, WAIB and PIA started offering, through their members, monoline [single peril] earthquake policies. At the end of 1983, these producer programs were relatively small, insuring approximately 10,000 dwellings for \$1.4 billion in exposure. By the end of 1984, these programs, combined, had increased to approximately 80,000 dwellings with estimated annual premiums of \$19.3 million and exposures of \$11 billion" [emphasis added] (Department of Insurance, 1986, pp. 16-17). "The popularity of these programs

was due to the low deductible (\$1,000 instead of the usual 5%), the lack of any coinsurance provision, and the fact that the applicant selected the amount of coverage" (Department of Insurance, 1985, pp. 15-16). However this producer encroachment into the marketplace was short-lived. The 1986 California Department of Insurance Report advises that "the rise in property/casualty insurance industry losses in recent years caused a severe restriction in reinsurance markets. Because of this, each of these producer programs was suspended in early 1985. No new applicants were accepted and eventually non-renewals were sent" [emphasis added] (Department of Insurance, 1986, p. 17).

There has been some speculation regarding whether the failure of reinsurance, which is often ceded, at least in part, to firms which also underwrite directly, was pure happenstance, or whether in fact it was a deliberate attempt to force out this producer competition which was offering a different and apparently quite attractive package. However, during a session of the Boulder workshop (see endnote 1), one consultant to a California senate committee concerned with such matters attributed the producer withdrawal to the marketplace. Rejecting the suggestion of reinsurer involvement, he said of the producer activity that "you cannot ascribe fear, stupidity, lack of business judgment or improper research to collusion." Another Boulder workshop participant, a well-known insurance industry official, offered a more pithy comment: "It was a crappy program!" He continued,

"The reinsurers were not really reinsurers. Most of them were everybody on the street taking a piece of the action. . . . The reinsurers backed off from an obviously unsound program."

The 1986 Department of Insurance report advised, with respect to the situation, "By April 1, 1985, the market had eased and the Independent Insurance Agents and Brokers [organization] of California (IIABC) was able to propose a new program in a modified form. However, as of June 1986, the program is not yet operational" (Department of Insurance, 1986, p. 17).

Withdrawal of Coverage When a "Statutory Offer" Is Accepted

The "statutory offer" requirement of A.B. 2865 seemed simple and explicit: either make the required offer or don't write property insurance in California. But as we noted above, an apparent "loophole" permitting insurers to avoid writing earthquake endorsements by cancelling the policies of those who accepted the offer of earthquake insurance was quickly recognized and taken advantage of by a few insurers. The extent of this practice does not seem to be known as yet, but it does reflect concern over the capacity problem. One newspaper report commented, "An insurer which wanted to limit its earthquake exposure might elect to stop writing residential property policies on homes with masonry construction, or on homes located on land fills, hillsides, or in close proximity to known faults. If a substantial problem of non-availability of insurance coverage arises because of the mandatory earthquake offer, a solution will need to be considered. A residual market mechanism may need to

be established. If it is decided to do this by expanding the California Fair Plan, then legislation would be required to authorize it to write monoline earthquake coverage, either state-wide or in designated areas" (Department of Insurance, 1985, p. 14). This comment is put in broader context by Miller's linkage of lender to insurer, with respect to recognition of particularly vulnerable property. Either one or both may readily decide to avoid financial involvement in such property without need to coordinate with competitors, but that does not rule out the need for coordination between lender and insurer to avoid writing coverage that would be unsound (Miller, 1985).⁹ One of an insurance commissioner's primary responsibilities is to assure that insurers do not get overextended in writing coverage of unusual risk. The argument set forth by Benston regarding "redlining" by banks, is pertinent here. If the statute, or antitrust laws, force an insurer to "ignore conventional notions of risk and reward" when they insure properties, we may "in effect [be] demanding that [insurers] set aside business logic—and pursue the logic of 'social needs'" (1978, p. 69).

An Illustrative Placement Problem: Banker to Insurer

During the 1987 Boulder workshop, Dale Hatfield, then vice president of a major California bank, described an interaction between his bank and a number of insurers from whom he sought coverage. The subject was not earthquake insurance; rather, it was directors and officers liability coverage (D & O), which was similar in that at the time, the early 1980s, the insurance in-

dustry was almost as reluctant to write D & O as it was to write earthquake coverage.

Hatfield pursued a number of initiatives, largely without success, before ultimately reaching a solution which might well be echoed with respect to earthquake coverage, if major mortgage finance institutions are impressed or enticed into exercising initiatives intended to settle upon the private market a greater portion of the financial burden of a catastrophic earthquake. It also illustrates the need for, and advantages to be derived from, full development of pertinent facts in weighing the capacity question.

The stimulation for the effort was the loss of the D & O and Bankers' Fidelity insurance coverages by California banks. Hatfield advised, "We had a number of studies and a number of facts from the insurance companies, but the only thing that was important was that they weren't writing the coverages. So we did our own study and developed our own numbers, . . . which took six months, and [upon completion] we were able to decide the magnitude of the problem and what the various alternatives were to the solution. . . . [Then] we [contacted insurance carriers across the country and] said, 'with these new [favorable] numbers would you be interested in insuring our Independent California banks?' We did this for about six months and contacted about thirty-seven insurance companies and were turned down thirty-six and one-half times. The half was neither a 'yes' nor a 'no' and after approximately six months [that insurer] decided not to

pursue the matter further. At the very moment when we were [thereby] 'left at the altar' we were considering our solution which was to form our own 'captive' [insurance company]. However, we were saved from having to go with a captive . . . by another group of bankers who had already formed a captive, Bank-Insure, Inc., and who had acquired the necessary reinsurance, which was what was bothering us the most and which we knew was going to be our biggest problem.

"Our survey showed that the exposure in this particular case was greatest with the large banks. Our major concern was the smaller banks, and they had a good loss ratio. What the insurers were doing was lumping all the banks—the Bank of Americas and Bank of Californias—all the banks that had made the headlines with the 95 million dollar losses—lumping all those with the small banks . . . [that had] not had a loss in years, but they couldn't buy a bond or a D & O. We had a thousand bank directors in California with no coverage and that was our message—that we had supporting documents and figures to show that our particular segment of the market was a good risk. It all boiled down to that."

Hatfield continued, "What's interesting is that we have already seen the cycle turn. Now we're in business in a big way, with our own captive company, and now many of the carriers who slammed the door in our face are coming back into California with a vengeance. Who are our competitors now? The very guys who said 'No'! Now they are afraid they are going to lose the market

they voluntarily walked away from" (from the 1987 Boulder workshop, see endnote 1).

A somewhat similar struggle, but one in which the former insurers did not come back into the market, was related earlier during the workshop. This struggle involved the California Insurance Commissioner's office playing a part in helping physicians to form their own domestic companies to provide malpractice insurance. During a short dialogue which took place during the Boulder workshop, between an insurance industry executive and a consultant to a California senate committee, the industry executive opined that the five domestic companies created by physicians were "going broke."

The consultant differed, responding, "No, most of them are not going broke. Ask [a workshop participant well qualified to speak for the Insurance Commissioner's office]: 'Are most of them going broke?'" The queried official responded, "No, most of them are in excellent condition."

The insurance executive retorted that though that may be the fact in this particular case, "a lot of 'bed-pan mutuals' . . . are in bad shape."

The consultant then added the qualification that he was "talking about the California circumstance in which there were some laws changed and some restructuring, . . . and what happened in that circumstance is that the insurers, because of their traditional thinking, did not come back into the marketplace, and the people who were entrepreneurial did, and they prospered."

Argument that Reinsurance is Available

The argument has been advanced that there is a sufficient reinsurance capacity to enable the industry to respond to a great earthquake without a substantial collapse of the industry, even though it is anticipated that as a consequence of such an event a few insurers will become insolvent. It has also been suggested that the capacity to assess earthquake risks in an actuarially prudent manner does exist. As evidence of this capacity, the fact has been cited that the Lloyds of London group has been writing earthquake insurance/reinsurance under that premise. The Department of Insurance report for 1986 suggested that the industry could weather a PML as presently projected by that office, in the range of somewhat over five billion dollars, but indicated that such an amount is close to the maximum that could be tolerated. As mentioned, recent studies have suggested that the true loss to insurance companies and the total insurable damage to property in the event of a great California (or Boston, or Charleston, or New Madrid) earthquake could amount to several times that amount. During the Boulder workshop a considerable difference of opinion surfaced, primarily between those representing facets of the insurance industry and those who represented the financial community or who were economists on the faculties of prominent universities, regarding whether there was in fact a capacity barrier lodged in the reinsurance industry and whether the industry-derived and disseminated PML figures were in fact dependable representations. In this regard, C. Robert Hall,

vice president of the National Association of Independent Insurers, reminded the participants at the Boulder workshop that investment in the insurance underwriting and reinsurance business is a competitive market phenomenon.

Alternative Approach: Richard J. Roth, Jr.'s Plan

Richard J. Roth, Jr., Assistant Commissioner of Insurance for California, allowed the authors to examine a draft of an article he was developing, which set forth a conceptual alternative briefly summarized here. He noted that all recent studies and recommendations distinguish between the upper level of insurable loss (i.e., affordable without severely impeding the capacity of the insurance industry to service its other policy-based obligations to its clients), which is a very substantial figure, and the "catastrophic" event, which would far exceed the financial capacity of the industry. With respect to the latter, he noted that the consensus seems to be that the federal government will have to provide some type of catastrophe reinsurance to pick up where the industry capacity would be seriously jeopardized by taking a more severe "hit."

To keep the federal government as far removed as possible from direct participation in the business of insurance, his suggestion, which reflects what is now being done more and more, was to initiate a 10% deductible along with a coinsurance clause, and to augment that step by permitting some of the most earthquake-vulnerable properties to be excluded from coverage, and, in essence, written off until they can be phased out of existence.

He noted that a number of somewhat similar strategies have been suggested, but all seem to reflect this general approach. The California Insurance Department contemplates that by using available data from past earthquakes and by using actuarial analyses, it will be possible to quantify this coinsurance relationship. Roth recognized that there is some difference in projected rates, but suggested that since that matter is ultimately one for market determination, and since the widest market possible should be encouraged to purchase earthquake insurance, in order to diminish the adverse selection syndrome, it is unlikely that rates will be pushed upward.

During the Boulder workshop, some details from the "Earthquake Project" under development by the National Committee on Property Insurance (NCPI) were elicited. A fundamental element involves the United States government in a limited reinsurance status, funding being triggered only by a major earthquake causing severe damage, injury, and disruption. A trust fund, administered by a federally chartered corporation, apparently is contemplated to cover losses beyond the capacity of the insurance industry, with the management of indemnity payments incorporated into the traditional processes followed by the industry. The concept is one which, according to industry advocates, "should make money for the government" while holding the costs for the insured property owner to an average of about \$15 per year instead of the ten to twenty times that amount experienced under existing programs.¹⁰

Roth has developed some provocative data on PML variations. He observes that "substantial progress has been made in understanding the impact of an earthquake's wave forces on structures," and that "for given types of dwelling structures and knowledge of the location and soil conditions, the state of the art is advanced so that aggregate structural loss estimates can be made with some confidence." Roth observes that:

Following the 1971 [R6.4] San Fernando earthquake, a physical inspection of approximately 12,000 single-family frame dwellings was made with particular attention to the more seriously damaged structures. A distribution of dwelling losses by size of loss was developed where the loss estimates were presented as a percentage of replacement cost values, excluding land values. The total amount of earthquake damage represented 6% of the total replacement cost of the 12,000 dwellings. If all of the dwellings had been insured for earthquake damage at a 10% (of coverage) deductible, then 57% of the damage costs would have been absorbed by the dwelling owners . . . and 43% would have been paid by insurance. If, in addition, the federal government paid, under a reinsurance program the individual dwelling losses which exceeded 30% of the replacement cost, then the federal government would have paid 16% of the total earthquake damage and these payments would have gone only to the owners of the severely damaged dwellings."

Projecting those figures to a Los Angeles scenario, presuming one million dwellings, all insured, with an average replacement cost of \$100,000, and with slight adjustments to reflect a major earthquake, Roth concludes that if the dwelling owner paid the 10% deductible (or less, if damage did not reach that figure), such a system would put 55% of the cost on the dwelling owner. The insurers would carry the layer ranging from 10% to 30%, approximating 25% of the damages incurred, with the federal government carrying the layer of damages ranging from 30%

to 100%, which would approximate 20% of the total cost of damages incurred. Accepting, for the sake of argument, the San Fernando figure of 6% of all dwellings damaged, the computations show that total damages would be 6% x \$100,000 (per dwelling value) x 1,000,000 dwellings, which would equal \$6 billion. The dwelling owner would then pay \$3.3 billion, the insurers, \$1.5 billion, and the federal government, \$1.2 billion, under the percentages listed above.

Given these figures, Roth calculates that the annual premium per dwelling would be approximately \$.30 per \$1000 of coverage, compared with a present premium cost of \$1.50 per \$1000.

In any functional program development, it is obvious that members within the industry will have to plan together, negotiate together, and decide together on many matters. The present framework of the industry provides an institutionalized structure for accommodating these interactive needs. As the law now stands, it is probable that with sound legal counseling, the interactions can be carried out without violating antitrust laws. Still, with bills pending that would modify the McCarran-Ferguson Act and/or impose regulatory controls at the state level that could substantially limit the freedom from constraint the industry now enjoys, continued monitoring, and probably lobbying, are to be expected before any definitive answer regarding the long-range vulnerability of the industry under antitrust laws. How much and what kind of a change would have to occur before necessary planning would be significantly inhibited does not

appear to have been evaluated at this point, but such considerations should be a part of any policy assessment conducted with respect to debate over changing the existing laws.

THE MORTGAGE FINANCE INDUSTRY

This section examines the mortgage finance industry. We describe the prevalent industry attitude regarding whether real estate loan commitments should be conditioned on an agreement by the borrower to protect the security property by earthquake insurance during the loan term. We explore the methods whereby the industry might impose and enforce such a requirement, and illustrate the types of activities associated therewith which might provoke antitrust challenge. We probe the prospect that the secondary mortgage finance market might provide the most functional seat from which to insist upon earthquake insurance protection for real estate collateral. We also note alternative means whereby that market might achieve more effective and less costly protection of its real property interests from earthquake risks without demanding that mortgagors procure and maintain earthquake insurance. We touch briefly on the prospect that the mortgage lending industry might be able to influence governmental land-use decisions to achieve mitigation of earthquake damage and seek to indicate why, in the short term, this is not a promising approach. We then offer a few concluding remarks before finally examining in greater depth the vulnerability of the insurance and mortgage industries to antitrust challenge if one or both active-

ly promote widespread private acquisition of earthquake insurance.

It must be noted here that it is rather unrealistic to presume that the mortgage finance industry is readily manipulable for the national purpose of influencing mortgagor acquisition of earthquake insurance coverage, when such acquisition is at most of marginal concern to that industry. Nonetheless, the potential exists, and it is possible that someday the industry might conclude that it is in its best interest to demand that any real property it accepts as collateral be protected by earthquake insurance, if the property is located in an area of known or suspected seismic activity. There is probably a greater likelihood that the secondary market principals, and perhaps major loan originators as well, will prefer portfolio coverage. It is beyond the scope of this paper to document why this is true. What we do seek to provide here is a limited perspective on those operational activities and interactions of the industry that might bear a relationship to antitrust considerations.

The Primary Market Situation and Developments

During the past decade or more, there have been complex and revolutionary changes both in the primary and secondary mortgage finance industry. The industry's size, operational scope, complexity, economic risk exposures, opportunities, investment leverages, marketing tactics, and institutional structure have experienced remarkable changes. The revolution is not yet over, and future projections necessarily contain a considerable degree

of speculative assessment. Compared with the dynamic changes affecting the industry, our particular consideration, the industry's possible promotion of the private purchase of earthquake insurance and such action's potential antitrust transgressions, could hardly be viewed internally as being of momentous concern. In essence, the industry, after considering whether it need be concerned with earthquake risks, seems to have concluded that, given the present state of affairs and of knowledge, it can live with the risks.

Considerations Relating to the Point of Lender Imposition of a Demand for Earthquake Insurance

The mortgage finance industry is, on the one hand, in a theoretical position to readily exercise influence that could induce its clients in the private sector to procure earthquake insurance as a prerequisite to obtaining a loan and as a requirement of continuing applicability, breach of which would constitute a default. On the other hand, the industry has obviously been very reluctant to impose such a requirement, even though it has traditionally required fire insurance and some form of extended coverage. There are several good reasons for this caution. One is that, without federal directives,¹² individual members of the industry are, arguably, reluctant to take the initiative in such matters for fear of subjecting themselves to a competitive disadvantage (see, for example, Anderson et al., 1981, p. III-54). Before presuming that the small cost of prorating a yearly premium that has typically been estimated at not over \$2.00 per \$1000 of value is not a serious competitive matter, one should

recall that this industry has conditioned itself to compete on such relatively minute economic specifics as fractional differences in "points of discount" and interest rates. Lenders are understandably hesitant to unilaterally impose a requirement for added protection beneficial to the lender which will add \$15 to \$20 or more to the monthly payment for debt service. It might be responsible management for lending officials within a marketing area to get together and agree that it is in the best interests of mortgagors and mortgagees to require the earthquake endorsement. Yet, again, the members tread on treacherous ground if they consult with one another in any manner and shortly thereafter initiate a new demand and charge.

The point for imposition of any condition upon which a loan commitment is dependent must be the originating lender. It might seem that the ease of identifying the point of imposition of such a requirement should reflect the ease of the imposition itself. To the contrary, the mortgage finance industry, vast, complex, and highly competitive, is responsive to a number of regulatory bodies, and reflects a variety of policies and purposes, often in tension. Any decision process weighing the advisability of requiring earthquake insurance would involve financial and risk considerations of broad socioeconomic scope, not the least of which is the issue of whether the industry is willing to incur the considerable additional loan-service monitoring responsibility associated with an earthquake insurance requirement attached to each individual mortgage or deed of trust.

Alternatives Possibly Attractive to the Industry

To require this type of protection, the industry must be convinced that it is sufficiently at risk to justify the costs, financial and otherwise, and that the process suggested is the most efficient method of achieving its purposes. Unless forced to require that each borrower must provide an earthquake endorsement, the industry, if it recognizes the need for this sort of protection, may conclude that an alternative approach is preferable. One alternative that has been practiced to some extent within the industry is for a lender to purchase earthquake insurance to protect its own portfolio of security property. Such a process clearly involves a somewhat different PML assessment, in which the geographic distribution of the security property in an insurable portfolio is a particularly important element to evaluate. By indemnifying itself against loss, the servicing mortgagee (or, at another level, the ultimate investor entity) not only retains direct, single-point control over the maintenance of the protection purchased, but should be able to manage the quality of the security portfolio and negotiate an attractive rate structure.¹³ If such a process will suffice for the needs of the lender, then a mandate (which would have to emanate from a government entity) to institute as a condition for making each loan that the borrower procure an "Earthquake Damage Assumption Endorsement" or similar protection would tend to put into question the purpose of such an imposed demand, and could pose due-process and equal-protection issues.

Earthquake Insurance as a Condition of Loan:
Discretion in Marketing

Within the above set of considerations, there seems to be little incentive for lenders voluntarily to impose a demand for earthquake insurance on residential or small business owner-borrowers. However, this presumption may not be valid, and the question remains: if lenders did decide to require earthquake insurance as a condition of loan, could they readily do so, and what sort of process might evolve that would be reasonably palatable to them? It is clearly within the theoretical province of each originating lender to impose on each new mortgage the requirement that earthquake insurance be provided, but, as is the case with any loan application, the lender will exercise discretion in the decision process. That discretion can include consideration of such matters as the apparent capacity of the applicant to repay the loan in accordance with agreed terms and the security value of the property offered as collateral. Furthermore, lenders (and insurers) do business subject to regulatory guidance and review designed to assure a state of dependable solvency. A spectrum of information sources and institutional structures, ranging from microzonation studies to branch banking, make it possible for many lenders to distribute their loan investments across a sufficiently broad geographical area to justify expectations that no earthquake would inflict damage in excess of the lenders' PML/surplus ratio, and to enhance such expectation by refusing to accept for security an interest in any property determined to be structurally deficient

or locationally at unusual risk. Most lenders could manage their business so as to take advantage of such potentials. Those who do so might well conclude that the dispersion available within the marketplace assures the potential to hold earthquake-related losses within financial tolerance.

Following the above lines of reasoning, a lender, individually or in collaboration with others, clearly can gain by exerting influence directed toward mitigative activities obtained through legislative direction or educational endeavors. Encouraging borrowing to accomplish seismic-stress-resistant improvements is generally beneficial and is not competitively detrimental when engaged in by individual institutions.

Hard facts have a habit of upsetting beautiful theories, however. Whether or not there is general credibility accorded to predictions that a severe earthquake can be expected in the Midwest within the next several decades, Boulder workshop participants were advised by an official from FHLMC and by an officer of a major insurance association that lenders in several western Kentucky counties are now requiring earthquake insurance for residential loans. The counties involved reflect political boundary delineations juxtaposed to and tracing the Mercalli Intensity VII contour projected for a major earthquake on the New Madrid fault. The insurance industry official also advised that the insurance companies writing this endorsement are imposing only a 2%-3% deductible and charging a quite nominal premium. He

said that he had advised these companies to increase the figures because they "don't begin to cover the cost of underwriting."

"Redlining"—A Word of Caution

One problem that will be with us for some time is how to deal with older properties, many of which are particularly vulnerable to earthquake damage. Institutions practicing the strategy of being locationally selective in making loan commitments risk restraint of trade potentials, and/or may violate state or federal laws and regulations designed to discourage "redlining."

"Pooling"—A Tool for Making "Bad Risks" More Tolerable

Governments have recognized that some situations, some locations, and some circumstances have inherent greater risk of loss or damage. One solution, applied to automobile insurance and in a number of other areas including property insurance, has been to institute a process whereby "bad risks" are "pooled" and distributed on an equitable basis among all insurers doing business within the jurisdiction and underwriting in the particular field. California's FAIR Plan (discussed previously), originated to provide for riot damage, is one example. A similar approach, with a different orientation and with some reflections of the federal catastrophe-reinsurance concept now being studied by various industry and governmental groups, was adopted a few years ago by the state of Texas to cope with the rapid growth of "six-figure homes" being constructed on hurricane-vulnerable Padre Island. Resisting pressures to down-zone this fragile barrier

island, Texas elected to permit construction to proceed. Anticipating, however, that a major hurricane could inflict hundreds of millions of dollars worth of damage, the state set up an insurance "catastrophe pool" to respond to losses that otherwise would exceed the safe coverage capacity of affected insurance carriers."

Lenders will have to weigh whether some or all forms of pooling of earthquake insurance coverages pose an added locational risk, an increased risk of debtor default, or a reason for insisting that indemnification of loss payments by insurers be rated giving priority to satisfaction of any indebtedness secured by the damaged insured property. The very fact of pooling, particularly if there is a state (or federal) reinsurance backup, may diminish the strength of lender arguments disclaiming any impermissible discrimination. Lenders may safely lobby for protection against such a vulnerability, but if they consult with each other regarding whether or how to establish a reasonably uniform decision process for avoiding unsound lending, they run a risk of impermissibly acting in restraint of trade. There is nothing in lending circles which mirrors "pooling" for insurance risk purposes. There are mechanisms, public and private, for insuring or assuring against full loss on default by a borrower. The lender's increased risk beyond conventional loans is primarily in working under a higher loan-to-value ratio. "Bad" loans invite attention from examiners, and therein lies one constraint; but what is one lender's bad loan is another's astute investment.

Without coordination, it might be that the most irresponsible lender sets the standard through competition. The choices to be made may be hard ones, with a variety of competing risks.

Secondary Market Influence in Earthquake Insurance Demands

The U.S. Supreme Court's decision in De La Cuesta¹⁵ left little doubt that the federal government, if it so desired, could impose the requirement that earthquake insurance protection be a prerequisite a) to assigning or otherwise channeling a mortgage loan into the secondary market, b) to the insuring or guaranteeing of loan funds, or c) to permitting participation in the FDIC or the FSLIC by any federally assisted and/or regulated financial institution. Whether the insurance industry could satisfy the demand thereby created is another matter. The politics attendant to such a decision and the economic consequences it would produce are matters outside the scope of this study.

Use of FNMA/FHLMC Uniform Instruments as the Earthquake Insurance Demand Mechanism

We should keep in mind that individual lenders have always had the contractual opportunity and the authority to require earthquake insurance for security property. We noted in the section above on "Response to Demands by Mortgagees" that the FNMA and FHLMC could impose a specific earthquake insurance requirement as a condition for acceptance of a mortgage security into the secondary market, and that such a demand could be geographically selective. We also noted that lenders have the right to apply insurance payments, made in satisfaction of claims in-

volving property damage, toward the settlement or the reduction of the outstanding secured indebtedness.

Indeed, lenders have considerable leeway, following a major earthquake, to declare restoration or repair not economically feasible or security of the deed of trust impaired, regardless of the degree of damage incurred. In part, this is so simply because the costs of labor and materials for repair, following a major earthquake, can be expected to be much more than pre-quake costs, and, if the damaged area is sufficiently extensive, the availability of materials and/or skilled labor necessary to effect essential repairs may be so limited that many damaged properties may incur substantial secondary time-related damage or deterioration to such an extent that renovation is no longer feasible by the time it becomes possible. Wage and material cost freezes, such as those that followed the Alaskan earthquake and Hurricane Camille, should not be relied on as a dependable preventive in the event of a major earthquake impacting Los Angeles or San Francisco or Boston, because the entire construction and material delivery processes have undergone such momentous changes since those earlier disasters that the control of sources and tracking of fabricated components for enforcement purposes would require a massive effort in its own right. Unless an insurance policy provided for replacement cost, the insurance proceeds might prove inadequate to effectively restore or repair the insured structure, thus endangering the security interest of the lender. Even if the proceeds did fully provide for restoration

or repair, the lender could assess the situation within the neighborhood and might well conclude in good faith that the security value was impaired simply because the neighborhood itself seemed unlikely to be restored to its former status. On that premise, the lender could assert a right to the indemnification payment proceeds for the purpose of applying the same to the outstanding indebtedness.

A cogent question is whether an individual lender would set the pattern of claiming the insurance proceeds, and if so, what process would induce others to follow or prevent them from following the initiative of the pioneer institution. The temptation would be strong to establish some consensus, at least among lenders who stood to incur substantial losses in a heavily damaged area.

Where a secured loan has been assigned to the secondary market, the decisions affecting insurance proceeds might be made far from the point of loan origination, and with impartial judgment brought to bear, because under "mortgage law" the collateral documentation securing the promise to pay always "follows" the note. The interactions involved in such crisis decision making have not yet been tested, and their resolution is thus left to speculation. It is worth noting that the Federal Home Loan Bank Board (FHLBB) has long required each Savings and Loan Association insured by the Federal Savings and Loan Association (FSLIC) to impose on its secured creditors the obligation to carry fire insurance protection on security property equal to the Savings

and Loan Association's insurable interest in the property. Moreover, as mentioned earlier, the FHLBB also requires that hazard insurance be maintained for "other perils as to which institutional lenders operating in the same area commonly carry hazard insurance." With few exceptions, earthquake insurance has not yet been demanded under this provision.

The Secondary Market Demand in Action: The Puerto Rico Exception

Even though the major players in the secondary finance market—i.e., FNMA/FHLMC—have concluded that it is not necessary to protect security interests by a general requirement that earthquake insurance be procured as a condition of a loan (see Kaplan, Smith and Associates, 1981), we did earlier note that earthquake insurance has been required by FNMA with respect to Puerto Rico for more than three decades. The premium charged, however, is considerably lower than that in California. As a result, the imposition of the earthquake insurance requirement has not been a significant barrier to residential financing. This example may be noteworthy for the mortgage finance industry, if the pending insurance industry proposal to transfer "catastrophic" earthquake damage losses to the federal government does come to fruition, and particularly if the rumored rate of approximately \$0.15 per \$1000 can in fact be achieved. Under such nominal costs, many homeowners would be tolerant of lenders who did make earthquake insurance a condition of loan for residential financing.

The Mortgage Finance Industry and Land-Use Seismic Considerations

The prospects for managing and controlling land use for purposes of mitigating and/or avoiding earthquake damage are more impressive in theory than they are in fact. The use of building codes to accomplish significant reductions of risk has been quite impressive, but the use of zoning codes and comprehensive plans has been less so. Zoning and planning controls can only be prospective in application. There have been some effective zoning-based limitations imposed to prevent land from being used for purposes that would have been socially and economically inappropriate, but in most instances too little has been known to effectively employ zoning to abate or avoid earthquake damage. In addition, zoning is a localized process constantly subject to local political control, and in general it has not proved to be effective in doing more than delaying the effort of entrepreneurs to make a profit from land development and redevelopment.

The most widely known statutory land-use provision related to seismic considerations is California's Alquist-Priolo Act. That act requires disclosure whenever a residential property is offered for sale, if the property lies within a specified distance of a known active fault line. The act applies the designation "Special Studies Zone" to areas within the designated distance. Never intended to provide direct protection against ground shaking, the act has been criticized for doing little to discourage citizens from electing to establish residency within the designated zone. Neither has it been proven that the act has

diminished property values within the zone through the requisite disclosure , although some Boulder workshop participants disagreed with that assertion. Realtors have not found it an impediment, appraisers have not considered it a value depressant, and lenders generally have not modified their loan evaluations where property under consideration was within a special studies zone (Palm, 1985b, pp. 144-149). Of more functional value have been codes limiting construction to specified maximum-surface slopes, and such special ordinances as the San Francisco parapets and cornices regulation and the Los Angeles Seismic Hazards Renovation ordinance (for a description of these laws, see Gutstadt, 1986). General down-zoning of land inappropriate for a variety of high intensity uses has been of some value as a delay mechanism, but sooner or later, as economic demands build up, encroachment takes place. Within the land-use process, both the insurance industry and the mortgage finance industry can exert telling influence, indirectly by education and information dissemination, and directly by their own decision processes. But as directly applied, geographical discrimination must be used only where it can be clearly demonstrated that to do otherwise would result in a breach of financial responsibility owed to those to whom the decision makers stand in some sort of fiduciary relationship. Until recently one might have been forced to conclude that until earthquake prediction becomes more certain, it will be difficult in most cases to make the case for 'redlining' an area on the basis of seismic considerations. In the last

decade, however, geologic hazard analysis has become much more sophisticated and may provide a basis for such decision making that will survive challenges of discriminatory purpose. As the potential for prediction becomes more dependable, it is reasonable to expect some discussion of the significance of developing data which might support a credible prediction. Again, there is some risk that if such a discussion among industry leaders is followed by a change of position by one member and is quickly parroted by others, such a pattern will raise the question of whether this was the essence of competition or follow-the-leader parallel action that can trigger antitrust examinations.

One final field for financial leverage that should be mentioned is the potential for joint venturing. Where equity participations are negotiated, for example, the lines between lender and owner become blurred. The same is true on a commercial scale, when a lender takes a "piece of the action," and particularly when the lender's fee is partly dependent upon profit figures.

Opportunities for "Mid-Course" Changes

Finance industry leverage will be largely prospective, in that its efforts will be generally brought to bear only with respect to loan originations. However, under due-on-sale contract clauses as currently honored, or where the alternative of a seven-year (or other contractually specified) renegotiation clause comes due within a longer-term loan agreement, there is a possibility for demanding an expanded insurance coverage as an

element of the renegotiation of the loan terms. Whether negotiation clauses include such an element by implication in the absence of express stipulation on the matter might be arguable, but in a due-on-sale situation, the concept is that the former loan has been "called" for default, and in such a situation, all terms are subject to negotiation. Under that interpretation, it would seem to be appropriate to impose a new condition that earthquake insurance be purchased for the subject property.

The insurance industry, on the other hand, can theoretically impose added requirements at any premium renewal date, under the alternative of terminating the contract. A voluntary imposition of that nature is not to be generally anticipated. However, if the premium differential is nominal, it is possible that growing public awareness of an impending major earthquake could generate more business than the insurers would care to solicit. Still, if the deductible is raised to 10%, as has already been done in many instances, if some sort of FAIR Plan program which includes a state or federal subsidy is provided to temper the PML on high risk properties, and if the federal government and the industry do work out some acceptable catastrophic reinsurance program, typical hazard policies written a few years hence may include earthquake endorsements.

A SUMMARY OF THE CONSIDERATIONS PUT FORTH SO FAR

Both the property insurance industry and the mortgage finance industry have the capacity to exert, individually or col-

lectively, considerable control over whether and to what extent private property owners purchase earthquake insurance. Neither wants to do so at present; neither has any apparent incentive for doing so. In the case of a major earthquake, the insurance industry simply would not be able to pay all losses. It must be recognized that in addition to fire damage, severe losses will be incurred in such diverse coverages as worker's compensation, medical, contractors' equipment, fine arts, and other inland marine coverage written on an all risk basis. Lenders may incur catastrophic losses or may be little affected, depending on their individual portfolios. If they need protection, they will probably find it more economical to procure portfolio coverage after extensive review and analysis of their individual needs. However, the interactions which both industries engage in, do, in some instances, suggest a theoretical potential for running afoul of antitrust laws. The following section, however, suggests that as the law now stands and is applied, there is less likelihood of a such violation being found or of a restraint of trade challenge being posed today than there was in 1980, but there is always the chance that the laws will be changed in such a manner that present speculations are invalidated.

ANTITRUST LIABILITY

The antitrust risks raised by these methods of mitigating earthquake damage depend on a variety of factors. Indeed, antitrust liability often turns on the factual context surrounding a

particular practice, and the precise analysis of individual actions must incorporate a detailed understanding of their origins and market impact.

Many changes have taken place in antitrust policy and enforcement since the study by Brown and Weston in 1980. In particular, Reagan Administration enforcement officials, antitrust scholars, and courts are taking a far more passive attitude toward mergers, joint ventures, vertical restrictions, and boycotts as the pro-competitive impact of many types of collaborative conduct have been recognized and accentuated. At the same time, the circumstances under which state and local governments can provide immunity for collaborative conduct have been eased and the Local Government Antitrust Act of 1984 has reduced the liability of governments, officials, and employees. Consequently, many of the risks emphasized in the previous study have been greatly lessened. The changes that result in this different assessment are only in part a function of who sits in the White House; they represent a basic shift in the thinking about antitrust that is unlikely to be undone by the elective process in the near future.

In the previous sections, a wide variety of options has been outlined as potentially available for an earthquake damage mitigation program. A complete understanding of the possible antitrust implications of a finance/insurance industry promotion of earthquake insurance must necessarily rest on a thorough review of the laws, cases, and opinions establishing the application of

antitrust doctrine,¹⁶ and, again, it is difficult to give concrete antitrust guidance about these options without a close examination of the facts surrounding their origin and market impact. Nevertheless, the general lines of appropriate analysis can be articulated, and an outline of significant antitrust considerations is given below.

Permissible Independent Single Firm Conduct

Because independent conduct by a single firm does not violate the antitrust law unless monopolization is involved, the mitigation programs that rely on the decisions of independent firms are not likely to raise antitrust issues. Thus, insurance company ratings of buildings based on design or construction, and establishment of insurance premium differentials to encourage more earthquake-resistant construction or remodeling, would not be likely to involve significant risks under the federal antitrust law. Similarly, a single insurer can probably decide independently to "redline" a particular area that has poor building standards, and lending agencies, such as savings and loan associations or commercial banks, may endeavor to protect themselves by requiring borrowers to obtain earthquake insurance. If this action is taken by individual firms without agreement or collusion with others, it would not ordinarily present a substantial antitrust risk.¹⁷

Such decisions, of course, must be truly independent; that is, the decision to deny insurance, or to deny credit, must not be based on some assurance that a rival would make the same de-

cision.¹⁸ Because such decisions are virtually always in the deciding firm's interest whether or not its rivals take similar action (because they are intended to control the deciding firm's risks), there is little likelihood that even similar decisions by rivals would be sufficient to give rise to an inference that the decisions were the result of a combination or agreement.

Furthermore, insurance premium differentials are not subject to the Robinson-Patman price discrimination amendment to Section 2 of the Clayton Act because insurance is not a "commodity." While price or rate discrimination could, in exceptional circumstances, be challenged as an "attempt to monopolize" under Section 2 of the Sherman Act, such a claim could not be made here because differential rates could not lead to market power and because in most states such rates would probably be brought under the umbrella of the McCarran-Ferguson antitrust exemption.

Joint Conduct to Establish Voluntary Building Standards

A combination of architects, builders, lending agencies, insurers, or others may establish "voluntary" building standards as a means of limiting earthquake damage. Such standardization programs present potential Sherman Act antitrust questions because they involve a combination of competitors, but they may have competitive benefits and are usually upheld if reasonable. They must be established and supervised with care to avoid antitrust violation.¹⁹ If the effect of the standards is to eliminate competition in quality, or to eliminate or seriously disadvantage some competitors unreasonably, they may be held unreasonable.

There should be no standards that require use of a patented product or process or scarce material not available to all competitive builders. If a certification mark or seal of approval is used for construction, the certification mark or seal should be made available to any builder meeting the standards. There should be no agreement to adhere to the standards; each builder should retain its own freedom to conform or not.

The use of independent standards-making organizations such as the Underwriter's Laboratory lessens the antitrust risk by removing some suspicion of anticompetitive purpose, but does not provide immunity if, in fact, the standards unreasonably limit competition.⁸⁰ Encouragement by the National Bureau of Standards or other government agency to adopt standards does not protect otherwise unreasonable standards.

To be upheld as reasonable, the following guidelines should be followed:

1) The objectives of the standards—the need to mitigate earthquake damage in particular ways—should be clearly articulated.

2) The way in which the standards achieve their objectives should be articulated, as should the relationships between the standards and the objectives.

3) Care should be taken to eliminate any impact of the standards that is not related to their legitimate objectives; the legitimate objectives should be achieved in the least restrictive way possible.

4) The standards should be discussed at open meetings where competent counsel are present; all persons who have an interest in the standards should be allowed to participate in the process in a meaningful way and fair procedures should be adopted to insure that a sufficient factual basis is developed to demonstrate the relationship between the standards and their objectives.

5) Decisions should be made by groups of persons who are not directly affected by the decisions.

6) A process should be established so that any person or firm that claims to be injured by the standards has an opportunity to demonstrate that injury and to argue that the objectives of the standards can be met in some other way.

7) If there are several means of achieving the objectives effectively, all the means should be incorporated in the standards.

Individual Decisions to Enforce Voluntary Standards

Individual insurance company refusals to insure buildings that do not meet voluntary standards would not violate the anti-trust laws. However, an agreed or concerted refusal by a group of insurers to insure buildings that fail to meet voluntary standards would probably be considered a "boycott" beyond the scope of the McCarran-Ferguson exemption²¹ and possibly in violation of the Sherman Act. Similarly, a single savings and loan association, commercial bank, or other lending agency may, independently and without collusion with others, validly refuse to loan money for construction or permanent financing unless the building complies with "voluntary" standards of construction. However, if there is an agreement or collusion with other lenders to impose such conditions, such collusion could be challenged as a boycott under the Sherman Act. In addition, there should be no agreement or collusion with others, such as builders, land developers, or material suppliers with whom the lending agency may have some potentially beneficial financial relationship. We assume that the standards are ones that any firm would have an interest in implementing even if its rivals did not. Moreover, we assume

that implementing the standards would lower the risks for the firm and thus would make it less expensive to provide insurance or credit, and that this would occur even if rivals did not require the standards. If this assumption is correct, then there is little reason for competitors to communicate about which firms are imposing the standards.

Of course, not all boycotts are automatically unlawful under the antitrust laws.² In order to preserve its claim of independent decision making, each firm should follow these guidelines:

1) Each firm should make an independent evaluation of whether, and why, the standards are in its interest; if there are portions of the standards that are not in its interest it should not require them.

2) If the standards permit several approaches, the firm should be willing to consider all of the approaches.

3) The firm should be willing to consider requests to vary the standards if a good case can be made for doing so.

4) The firm should avoid communicating with competitors about whether the competitors are adopting the standards.

Joint Competitor Refusals to Deal to Enforce Standards

Combined action by insurers to enforce prescribed standards or to "redline" or refuse to insure in any given area lacking adequate building codes would present major antitrust risk. Such conduct would probably be deemed a "boycott," under the U.S. Supreme Court's interpretation of the term "boycott" in the McCarran-Ferguson insurance business exemption. It would therefore probably violate Section 1 of the Sherman Act and not be

exempt under the insurance business exemption, St. Paul Fire & Marine Insurance Co. v. Barry.²³

Joint Venture to Establish Comprehensive Earthquake Insurance

The inadequacies of existing earthquake insurance and serious doubts about the capabilities of present insurers to sustain the catastrophic losses of a major earthquake lead to the possibility of creating one or more joint ventures to establish a comprehensive earthquake insurance system. Joint ventures between competitors or significant potential competitors always present antitrust issues, although they may be held to be reasonable under particular circumstances.

Initially, it is quite arguable that such a joint venture would be exempt from federal antitrust laws under the McCarran-Ferguson Act. However, since the Supreme Court has never passed upon such an issue and there is little definitive precedent, there is no certainty of an exemption. Since such a joint venture would basically involve a method of spreading the great risks involved, the exemption arguably ought to be applicable, provided that states regulate the activities of the joint venture. There should, however, be no agreement by the joint venturers to insure only through the joint venture, because this could be challenged as an unlawful "boycott."

In the absence of the insurance exemption, an antitrust issue would be raised. Under the Sherman Act the validity of a joint venture is determined by its reasonableness.

Joint ventures were recently analyzed in the Antitrust Guidelines for International Operations, issued by the U.S. Department of Justice (1988).²⁴ Although the guidelines are directed at international operations, the analysis in the guidelines is a good summary of current enforcement policy and general thinking on the subject. The guidelines start from the premise that joint ventures "may be created for a variety of good business reasons," including "to take advantage of complementary skills or economies of scale in production, marketing, or R&D; [and] to spread risk."

The first inquiry must be whether the creation of the joint venture itself unreasonably restrains competition. If there is pre-existing competition between the joint venturers that would be eliminated, the joint venture must be shown to create more new competition than it eliminates or to increase significantly productive capacity or economies of scale and efficiencies. On the other hand, where the joint venture creates a product that would not otherwise be available or results in great efficiencies, it would be lawful. Thus, if the participants forming a joint venture can adequately document the fact that without the joint action they could offer no earthquake insurance at all, there is little possibility that the venture reduces competition, and hence no legitimate antitrust obstacle to its formation.

The second inquiry is whether the joint venture involves collateral restraints that are unreasonable. Agreements to fix prices or divide markets or not to compete in other areas that go

beyond the necessities of the joint venture would violate the Sherman Act.²⁵ The members of the joint venture should be left free to compete with the joint venture.

The third inquiry is whether the joint venture creates a "bottleneck" facility that cannot be duplicated by competitors or by competitive joint ventures. If the facility cannot be duplicated, then all competitors should be given access to it on a reasonable nondiscriminatory basis under the Department of Justice interpretation of Associated Press v. United States.²⁶ On the other hand, if competing joint ventures are feasible, then a single joint venture should not be established for an entire industry.²⁷ Joint ventures may also be challenged under Section 7 of the Clayton Act upon the ground that the effect of their creation may be substantially to lessen actual or significant potential competition.²⁸ The standards for applying section 7 of the Clayton Act are likely to be the same as those under the Sherman Act.

Collaborative Action to Seek Government Restrictions

Undoubtedly, one of the most viable approaches for mitigating earthquake losses is to obtain state, local or federal government agency action to impose mandatory construction standards, zoning or land-use controls, or other building restrictions. As mentioned above, conduct that is required by the government, and subject to government supervision, cannot form the basis of a viable antitrust claim, and collaborative action to bring about such government action is privileged and not sub-

ject to the antitrust laws. Any conduct that legitimately, and in good faith, seeks to influence how the government acts is lawful, even if done in collaboration with others and even if the government action injures competition or competitors.

To be immunized, of course, the conduct must be directed at governmental action and not at competitive injury outside of the governmental process. For example, the FTC has held that a concerted refusal by lawyers to represent indigent defendants in order to induce the government to increase its compensation for representing indigents is not immunized from antitrust attack merely because it sought to influence government policy; the competitive injury from the boycott was direct and not through the governmental process.²⁹ Similarly, a campaign of publicity calculated to harass competitors, or to frighten, intimidate, or deter customers, might be challenged as a "sham" even though it purports to seek government action. Thus, if a group of insurers or lenders or builders or a combination thereof were to engage in a publicity campaign that unduly emphasized the dangers of personal injury and financial loss that customers of particular builders might incur in the event of an earthquake, the inference might be drawn that the real purpose was to deter customers from dealing with those builders, although the campaign ostensibly promoted government adoption of legislation or regulations. Similarly, a combination to oppose automatically rezoning petitions or issuance of construction permits and to appeal such actions in the courts could be challenged as intended primarily

to harass competitors, deter them or impose heavy costs upon them, and therefore might not be legitimate governmental activity.

Moreover, where a public official has a personal, competitive interest in the subject matter on which the official is ruling, the immunity may be lost.³⁰ If, for example, a member of a local government zoning board or other state or local government agency is also a builder, developer, or lending agency official, a group seeking restrictive zoning or building standards that might affect the business of that member may be alleged to have conspired with that public official. Of course, the plaintiff would have to prove some conspiracy or concerted action, and the Supreme Court has ruled that governmental conduct does not become "concerted action" merely because it benefits or affects classes of private persons.³¹

On the other hand, the antitrust immunity is normally retained when the government agency acts as a buyer, seller, lessor or franchiser, provided that the challenged restraint of trade is imposed by the government as a result of its policy. Thus, for example, in Greenwood Utilities Commn. v. Mississippi Power Co.,³² the defendant was held to be privileged to petition a federal power company to sell exclusively to the defendant, thereby refusing to deal with the plaintiff. The decision of the "government to market power through the [defendant] reflected its implicit determination of how much competition was desirable."³³ Similarly, in the Airport Car Rental Antitrust Litigation,³⁴ there

was no antitrust liability for defendants who allegedly conspired to influence airport authorities to adopt criteria that would exclude several firms from renting an airport space for car rentals. Although the defendant may have influenced the officials in reaching their decision, any resultant restraint of trade flowed not from the defendants' action but from the government decision.

State or Local Government Action to Mitigate Earthquake Damage

The approach to earthquake mitigation with the least risk of antitrust liability is to have state or local governments mandate such action through mandatory building standards, restrictive zoning, or other restrictive provisions. Again, conduct that is required and supervised by the government acting within its governmental powers cannot form the basis of antitrust liability. In seeking to come within this doctrine, the following guidelines are relevant.

1) The governmental policy must be clearly articulated and affirmatively expressed. A state or local government action which merely approves, acquiesces in, or even actively encourages, a restraint upon competition, is not sufficient to confer antitrust immunity. Thus, approval or encouragement of restraints in the form of construction standards, limitations upon land use, etc. being imposed by agreement among builders, developers, lending agencies or insurers (even as a result of exhortation initiated by the government) would not be exempt. On the other hand, if a state or local government adopts and actively supervises standards or codes as part of the governmental policy, then conduct in accordance with the standards or codes is immune to antitrust suit, even if the standards or codes were recommended by private parties.

2) The Government must be acting "as sovereign." The plurality of the Supreme Court in City of Lafayette, La. v. La. Power & Light Co.³⁵ stated that the exemption for government action applies only to conduct "engaged in as an act of government by the State as sovereign." It emphasized the need for express or

implied delegation from the State to the municipality of sovereign power pursuant to state policy to displace competition with regulation or monopoly public service. Subsequently, such authorization has been found in a wide variety of circumstances that recognize the implied authority of local governments to regulate the health and welfare of its citizens, circumstances similar to those that would be involved in adopting building standards, zoning provisions, and other earthquake regulations.

3) The government must "actively supervise" the policy. The government's role in adopting and supervising the restraint must be significant. Cantor v. Detroit Edison Co.³⁶ emphasized the passive role of the state agency in adopting and supervising the tie-in of light bulbs with electric power and found no immunity for the conduct. More recently, the Supreme Court's decision in California Retail Liquor Dealers v. Midcal Aluminum³⁷ held that a California statute requiring wine dealers to adhere to resale price maintenance schedules filed with the state was in violation of the Sherman Act, because the state did not "actively supervise" the policy. There was no review of the prices to determine their reasonableness, or of contract terms or market conditions. The state simply enforced prices privately established.

In the context of earthquake mitigation programs this means that the regulatory scheme should be carefully reviewed to make sure that the state or local government agency performs an active role in supervising whatever restrictions are adopted to make sure they are consistent with the state policy.

CONCLUSION

Antitrust analysis is not nearly as antithetical to legitimate competitor collaboration that is designed to enhance the availability and attractiveness of products and consumer welfare as was thought to be the case a decade ago. Moreover the circle of uncertainty resulting from antitrust analysis has grown narrower, making it easier for competent antitrust counsel to give good advice with certitude. The analysis and guidelines set

forth above should reduce the risk that well-intentioned persons would run afoul of the antitrust laws.

Certainty can be increased in two other ways. First, the continuing interest of Congress in the problems addressed in the study of antitrust law suggests that where a legitimate case is well presented, Congress would be receptive to arguments for particularized relief, even though there are at present several efforts underway to move to reduce the exemption from federal antitrust law provided by the McCarran-Ferguson Act. Congress has been increasingly willing to enact special legislation to remove uncertainty in particular situations. They did this, for example, in the National Cooperative Research Act of 1984 to encourage pro-competitive joint research and development ventures, and the Reagan administration proposed and Congress passed the Superconductivity Competitiveness Act of 1988 to further expand and amplify the 1984 act. Second, the Department of Justice "Business Review" letters and Federal Trade Commission "Advisory Opinions" provide means for obtaining the guidance of one or another of the enforcement agencies in advance of entering into an agreement or joint venture. The current climate is much more favorable to issuance of such clearances than in the past; the Department of Justice has cleared several joint ventures in recent months.³⁸

In sum, given the analysis in this report, it should be possible to achieve all of the legitimate goals of an active earthquake mitigation program with little risk of successful attack under the antitrust laws.

ENDNOTES

1. A working draft of an earlier (and more extensive) version of this paper served as the framework for discussions at workshops conducted at The George Washington University and at Boulder, Colorado in 1987. Many of the suggestions of workshop participants are incorporated, directly and indirectly, into this paper. In several cases, direct comments are cited here, but attribution is not given in order to preserve confidentiality. In other cases, where comments are attributed, the speakers have reviewed transcripts of their comments and agreed to their publication. One of the authors (Brown) has complete recordings and transcripts of these comments.

2. The California "FAIR" (Fair Access to Insurance Requirements) Plan was a response to the racial riots of the early 1960s. Its purpose was to assist individuals to secure basic property coverage, i.e., fire, in high-risk urban neighborhoods by distributing the risk of insuring against property damage in these riot-vulnerable sectors of metropolitan areas. The California legislature created the FAIR Plan as a joint reinsurance association. Membership is required of all insurers licensed to write basic property insurance within the state. The program is similar to "uninsured motorist" pooling programs. It should be recognized that "pooling" does not increase capacity. It merely assures that, out of the total available capacity, the subject of such a plan will be assured coverage regardless of the demands of other lines, if the capacity to handle all available business is lacking.

3. Department of Insurance, 1986, pp. 15-16 summarizes the "concurrent causation" concerns generated by the Garvey decision and the scope and function of Assembly Bill No. 2865, effective January 1, 1985, which was enacted in response to the opinion in Garvey v. State Farm Fire & Casualty Co., 227 Cal. Rptr. 209 (1986), modified, 182 Cal.App. 3d 470 (1986), rev. granted, 723 P. 2d. 1248 (1986). The trial court decision in Garvey, in a directed verdict, held that plaintiffs Garvey were covered under their homeowner's insurance policy for loss incurred as a consequence of the pulling away of an addition to their house, caused by earth movement, even though their policy expressly excluded coverage for damage caused by earth movement, because a proximate cause of the damage was negligent construction, which was a covered risk under the policy. The court granted the motion for directed verdict on the principle, recognized in California, of concurrent proximate cause, earlier set forth in State Farm Mut. Auto. Ins. Co. v. Partridge, 10 Cal. 3d 94, 109 Cal. Rptr. 811, 514 P. 2d 123 (1973). The Court of Appeals decision reversed the trial court on the basis that it incorrectly directed a verdict in the case instead of sending to the jury the fact question of whether the earth movement caused the negligent con-

struction, or whether the tearing away of the addition was independent of the earth movement.

4. The U.S. Senate committee studying this issue, taking into account a broader but not necessarily comprehensive set of earthquake related risks, (subject to considerable qualification regarding variables such as time of day of occurrence, whether replacement costs or appraised value of a property is the proper figure to use, and whether damage could be repaired by homeowners at far less cost than postearthquake professional repair) concluded that "certain credible earthquake scenarios would result in over \$60 billion of total property losses." In "Table 3 - Property Damage from Possible California Earthquakes" the committee's report projects a total property damage of \$38.7 billion for the San Francisco area as a consequence of a R8.3 event occurring on the San Andreas fault; and for a R7.5 event occurring along the Hayward fault, a total damage of \$43.9 billion. Similarly, for a R7.5 event occurring along the Newport-Inglewood fault, the same table indicates a total estimated damage of \$62.2 billion. (Cheney, 1987, pp. 16-17)

5. McCarran-Ferguson Act, 15 U.S.C. §§1011-15 (1945). This statute partly negates the decision in United States v. South-Eastern Underwriters Association, 322 U.S. 533 (1944) which had held that the business of insurance was subject to the federal antitrust laws, by reinstating, within limits, the power of state governments to regulate insurance. McCarran-Ferguson exempted "insurance ratemaking and underwriting activities from scrutiny under the federal antitrust laws . . . to the extent that such activity does not constitute a boycott, coercion or intimidation." Matters "unrelated to the contract of insurance between the insurer and the insured" remained subject to the federal act.

"Because of the widespread view that it is difficult to underwrite risks in an informed and responsible way without intra-industry cooperation, the primary concern of [insurance industry representatives and of members of the Congress] was that cooperative rate-making efforts be exempt from antitrust laws." Group Life & Health Ins. Co. v. Royal Drug Co., 440 U.S. 205, 221, (1979).

6. McBride-Grunsky Insurance Regulatory Act of 1947, Ch. 9, California Insurance Code, §§1850-1860.3. In its preamble this act granted "certain immunities under other laws which do not specifically refer to insurance." The McBride Act exempts rating and underwriting activities from other state laws protecting against anti-competition or other unfair business activities.

7. See: S804, 100th Congress, 1st Session (specifically §3(b)) (the Simon bill) and S1299, 100th Congress, 1st Session (specifically §2(a) (2) and 3(a)) (the Metzenbaum bill).

8. A "rate" is the price charged for each unit of protection or exposure, and should be distinguished from a "premium," which is determined by multiplying the rate by the number of units of protection purchased. . . . The premium income of the insurer must be sufficient to cover losses and expenses. To obtain this premium income, the insurer must predict the claims and expenses, and then allocate these anticipated costs among the various classes of policyholders. The final premium that the insured pays is called the "gross premium" and is based on a "gross rate." The gross rate is composed of two parts, one designed to provide for payment of losses and a second, called a "loading," to cover the expenses of operation. That part of the rate that is intended to cover losses is called the "pure premium" when expressed in dollars and cents, and the "expected loss ratio" when expressed as a percentage. . . . In general the pure premium is determined by dividing expected losses by the number of exposure units. (Vaughan and Elliott, 1978, p. 87)

9. Miller's paper notes:

Lending institutions and insurance companies with financial interests in noncomplying properties are a potential source of pressure on owners, both as incentives and disincentives. In Los Angeles, lending institutions frequently will not permit use of unreinforced brick masonry buildings to secure loans. However, certain lenders have indicated a willingness to loan against such buildings if the buildings are brought into compliance with the Los Angeles Earthquake Hazard Reduction in Existing Buildings ordinance. Owners wishing to borrow on their equity in such buildings will find compliance in their interest. (Miller, 1985, p. 111)

If lenders are forced to be too sensitive to accusations of locational discrimination, they may bow to the risk of embarrassment and costly defense by substituting as a prerequisite to a loan commitment that the property carry an earthquake insurance endorsement, thus putting the insurer under pressure to depart from sound business judgment in order to accommodate a highly respected lender. If, on the other hand, an insurer will issue an earthquake endorsement, the lender's business judgment decision to abstain from making a loan because the lender feels uncomfortable about the locational risk, is subject to question regarding the true reason for the rejection. The question then arises whether such a relationship can rise to the status of a restraint of trade. Even if a one-to-one relationship of this nature is safe, a further question arises if several insurers coordinate independently with one lender, or vice versa, in as much as one dominant entity could "taint" the arena of such interactions.

10. For a discussion of recent efforts of the Earthquake Project, see Lecomte, 1989.

11. These excerpts are from an untitled and unpublished draft paper by Richard J. Roth, Jr., California Assistant Commissioner of Insurance, forwarded to Professor Brown by covering letter dated March 23, 1987, copy now in Professor Brown's files. Roth observes that "bodily injury losses and business losses are still exceedingly difficult to estimate."

The summary of Mr. Roth's concepts is the authors', and should not be attributed to Mr. Roth. We express our appreciation for his willingness to share this draft with us.

12. Unlike the insurance industry, which under McCarran-Ferguson [15 U.S.C. §§1011 et seq.] is largely state-regulated, the mortgage finance industry, in all of its various elements, is predominantly federally regulated. During the Boulder workshop one insurance industry official observed to an official of a major California bank that, as he saw it, the bankers, in getting together to develop disaster plans for their computerized systems, would not be as comfortable in coordinated planning as insurers might be because the bankers did not have the umbrella of the McCarran-Ferguson Act. The banker agreed, but observed that as long as they were consulting with each other for informational and educational purposes, he did not think they were in any jeopardy, but that in any event, the planning they had initiated in 1982 on their own volition had, in 1985, been brought under a ruling directive by the Comptroller of the Currency, which should absolve them of any antitrust vulnerability with respect to this endeavor.

13. The vice president of a major California bank recounted for Boulder workshop participants an experience that is pertinent here. He described considering whether to insure, against earthquake, a mortgage loan portfolio of a half billion dollars, and, if so, whether he should procure coverage for the entire \$500 million value. To answer the question, he plotted on a map the zip code location of each of the security properties and then analyzed the result to see where the biggest exposures were. As a result, he concluded that the bank's maximum need was to procure \$17 million coverage.

14. When a pool is established, the effect is not to increase the total insurance available but to assure coverage of "bad risks" with sufficient diversity of placement among the companies that none can be financially disrupted by the responsibility they have been obliged to assume for public benefit. To the extent that the state subsidy adds capacity, the intended result may be fostered. However, in the absence of an adequate subsidy, the requirement of pooling to cover high-risk, otherwise uninsurable, property could result in reducing the potential to also cover property that is more readily insurable. For illustration and

discussion of "Distressed and Residual Risk Pools," see Vaughan and Elliott, 1978, pp. 80-82.

15. Fidelity Savings & Loan Association v. De La Cuesta, 458 U.S. 141, 102 S. Ct. 3014 (1982) upheld, on grounds of federal preemption, a 1976 Federal Home Loan Bank Board (FHLBB) regulation that permitted federally chartered thrift institutions to invoke "due-on-sale" clauses in loan agreements without regard to the security value of the collateral. Congress subsequently enacted Pub. L. 97-320, 96 Stat. 1469, the Garn-St. Germain Depository Institutions Act of 1982, which expanded the coverage of the regulation to all lenders, individual as well as institutional, and to both residential and commercial loans, subject to some "window period" exceptions which state governments were authorized to extend (although none seems to have done so) and excepting a few expressly delineated transfers of title.

16. A longer analysis of the pertinent law is contained in the original Brown and Gerhart report to FEMA (available from Professor Brown).

17. United States v. Colgate & Co., 250 U.S. 300 (1919).

18. See, for example, Cement Manufacturer Protective Association v. United States, 268 U.S. 588 (1925) (Circulation of credit information not unlawful); Theatre Enterprises, Inc. v. Paramount Film Distributing Corp., 346 U.S. 537 (1954); Eastern States Retail Lumber Dealer's Assoc. v. United States, 234 U.S. 600 (1914).

19. Compare Roofire Alarm Co. v. Underwriters Laboratories, Inc., 188 F. Supp. 753 (E.D. Tenn. 1959), aff'd, 284 F. 2d 360 (6th Cir. 1960) with Structural Laminates, Inc. v. Douglas Fir Plywood Ass'n., 261 F. Supp. 154 (D. Ore. 1966), aff'd per curiam, 399 F. 2d 155 (9th Cir. 1968), cert. denied, 393 U.S. 1024 (1969).

20. Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656 (1961).

21. See, Roofire Alarm Co. v. Underwriters Laboratories, Inc., 188 F. Supp. 753 (E.D. Tenn. 1959), aff'd, 284 F.2d 360 (6th Cir. 1960).

22. Northwest Wholesale Stationers v. Pacific Stationary and Printing Co., 105 S. Ct. 2613 (1985); American Federation of TV and Radio Artists v. National Ass'n of Broadcasters, 407 F.Supp. 900 (S.D.N.Y. 1978).

23. 438 U.S. 531 (1978).
24. (Draft revision published in June 8, 1988), 54 A.T.R.R. supp. (June 9, 1988). See also, Bradley, Joint Ventures and Antitrust Policy, 95 Harv. L. Rev. 1521 (1982); Pitofsky, A Framework for Antitrust Analysis of Joint Ventures, 74 Geo. L. J. 1605 (1987).
25. United States v. Topco Associates, Inc., 405 U.S. 536 (1972); Citizen Publishing Co. v. United States, 394 U.S. 131 (1969).
26. 326 U.S. 1 (1945).
27. See, United States v. Automobile Manufacturer Ass'n., 1969 CCH Trade Cases §72,907 (C.D. Cal. 1969) (Consent Judgment).
28. United States v. Penn-Olin Chemical Co., 378 U.S. 158 (1964).
29. Supreme Court Trial Lawyers, Ass'n., 3 Trade Reg. Rep. §22,373 (1988).
30. Harmon v. The Valley Nat'l Bank of Arizona, 339 F.2d 564 (9th Cir. 1965).
31. Fisher v. City of Berkeley, 106 S.Ct. 1045 (1986).
32. 751 F.2d 1489, 1505 5th Cir. (1985).
33. Id. at 1499.
34. 693 F.2d 84 (9th Cir. 1982), cert. denied sub rem. Budget Rent-A-Car of Wash.-Or. v. Hertz, 462 U.S. 1133 (1983).
35. 435 U.S. 389 (1978)
36. 428 U.S. 579 (1978)
37. 445 U.S. 97 (1980)

38. See, 54 BNA, antitrust & Trade Reg. Rep. 497 (3/24/88) (clearance of Petroleum Independents Cooperative, Inc. Joint Venture to Cooperatively Market National Gas); 53 BNA, Antitrust & Trade Reg. Rep. 518 (Financial Institutions joint venture cleared); 54 BNA, Antitrust & Trade Reg. Rep. 926 (FTC modifies old order to permit railroads to engage in joint ventures).

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