

What Is the Appropriate Role of the Federal Government in the Private Markets for Credit and Insurance? What Is the Outlook?

Robert E. Litan

It is a privilege to appear on such a distinguished panel, and I thank the organizers for inviting me and for organizing this excellent conference.

The theme of this panel discussion centers on the unrecognized liabilities of the federal government and what to do about them. I will skip some of the most obvious ones—the pension guarantee system, Social Security, and Medicare—as they have been addressed at this conference and by many others. Instead, I want to concentrate on federal relief for natural disasters, a topic addressed in David Cummins’s (2006) excellent paper and which is quite timely given the recent devastation of Hurricane Katrina and other hurricanes of the extraordinary 2005 “season.”

There should be two objectives in dealing with natural disasters: (i) to encourage individuals, businesses, and all levels of government to take cost-effective measures to minimize the cost of disasters that do occur and (ii) to encourage compensation of losses in a way that does the least to discourage mitigation or objective (i). Government policy, in fact, has attempted to achieve both these

objectives, in part. But a few comments on them at the outset are warranted.

First, the notion that the best policymakers can do is to minimize the costs of disasters, taken the *fact* that disasters will occur as a given, is probably true only in the short run and only for some kinds of disasters. In the long run, government policies that affect the emissions of carbon dioxide and perhaps other compounds can have a significant effect on the environment, which in turn can affect the frequency and severity of hurricanes and droughts, for example.

Second, the federal government has gradually assumed the role of providing compensation and reconstruction assistance following a variety of natural disasters and, in the case of the tragic events of 9/11, man-made disasters (or attacks on the United States). Putting aside the man-made events and some natural disasters (such as tornadoes), where it may be difficult (though not impossible) for potential victims to take measures to minimize losses should these events occur, there are well-known steps that individuals can take to mitigate losses from hurricanes (reinforcing roof ties to house frames, ensuring that garages are well constructed, etc.) and earthquakes (bolting foundations to the rest of the house, bracing water heaters, etc.). But the more people expect the government to compensate them after one of these catastrophes, the less likely they are to pursue mitigation and, thus, reduce both the personal and societal losses from these disasters. Furthermore, disaster relief provided to state and local governments for reconstruction of destroyed infrastructure can perversely attract more people and

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businesses to high-risk areas. This is exactly what seems to have occurred in Florida following the hurricanes of 2004-05. Construction is booming in the same places that were wiped out. In short, the problem of moral hazard arising from disaster relief is one that deserves policymakers' attention.

Third, private insurance can and does play an important role in helping the government meet both its mitigation and compensation objectives. Assuming that insurance premiums for residences and commercial establishments are actuarially appropriate, insurance prices and deductibles then provide economic incentives for insureds to take some or all of the mitigation-related steps I have just noted. Furthermore, the more people and firms that are covered by private insurance, the less need there is for government-funded disaster relief. Accordingly, it is very much in the government's interest for individuals and businesses to purchase private insurance.

Government policy formally recognizes this in the case of floods, for which the government has operated an insurance program since 1968. Individuals in defined flood zones are *required* to purchase flood insurance if their residence was financed by a federally chartered lending institution. A key problem, however, is that this requirement is not well enforced, in part because it is difficult to do so. Families that take out flood insurance when they buy a home and assume a mortgage often drop coverage at a later point, and there is little that the originating lender (who has probably since sold the loan into the secondary market) or the government can do about that.

Mortgage lenders, also on their own, without a formal government mandate, typically require purchasers to buy standard fire and wind policies. This seems to have worked better than the flood insurance requirement. After the Northridge earthquake in 1994, the state of California required insurers doing business in the state to offer also earthquake coverage in their homeowners' policies, either directly or through a separate state-sponsored earthquake fund (the California Earthquake Authority). Similarly, after Hurricane Andrew, the state of Florida established what eventually would become two funds to support insurance coverage for hurricanes: Citizens

Property Insurance, a residual insurer that provides primary coverage to individuals who cannot find it in the "voluntary" market; and the Florida Hurricane Catastrophe fund, which extends reinsurance to all primary insurers that do business in the state and are exposed to hurricane risk. So far, take-up rates for hurricane coverage are far higher in Florida (which has a residual markets facility that offers subsidized rates) than in California (where even under the California Earthquake Authority fund, earthquake coverage comes with a high deductible—15 percent of the loss).

Still, the central question in the wake of the unprecedented devastation of Katrina is whether the private insurance industry, buttressed by state insurance plans in selected high-risk states, can reasonably handle future catastrophe risks. Here is where I part company with Professor Cummins. I do not have his faith that the private sector—including private reinsurers and the nascent catastrophe-linked securities market—can be expected to provide adequate coverage at affordable premiums for "mega-catastrophe" years, like 2005, indefinitely into the future. In other words, I believe that there is a kind of "market failure" for these very large risks that only a formal government reinsurance program can remedy. Indeed, somewhat paradoxically, *only* if the federal government takes on this role will it in the long run minimize the costs it bears for disaster relief and the larger social costs that natural disasters inevitably impose on the private sector.

As Cummins demonstrates in his paper, insurance works because of the "law of large numbers" coupled with independence of the risks covered. Even "ordinary" natural catastrophes—those costing several billion dollars—stretch these assumptions. Hurricanes or earthquakes cause damage to many properties in the same location, violating the independence condition. And if the catastrophe is large enough, then the law of large numbers won't help: Insurer's capital, or surplus, can be devastated by one or more very large events.

In principle, insurers—and their reinsurers—can deal with "high consequence" events by raising premiums sufficiently high to cover not just the *expected losses* associated with them, but

the possibility that the events occur well before insurers have collected sufficient premiums (plus interest) to cover the claims they ensure. Insurers call the latter possibility “timing risk,” and they attempt to deal with it by charging premiums that reflect a multiple of expected losses, or a “risk load.” Prior to the 2004-05 hurricane seasons, the Congressional Budget Office reported that reinsurers charged risk loads as high as five to six times expected loss. It is too early to know how high-risk loads on reinsurance contracts will be after this hurricane season, but, needless to say, it should not surprise anyone if they turn out to be even higher than this.

Catastrophe-linked securities do not solve this problem and indeed have been a disappointment to those who have advocated them as solutions to the catastrophe insurance problem. As Professor Cummins documents, only about one to two billion dollars in catastrophe (CAT) bonds have been outstanding in any single year during the past several years. I don’t find this difficult to understand. The buyers of these securities, knowing that their principal value (and interest) can be wiped out with one event, will insist on interest rates that also take account of timing risk to the same degree as reinsurance contracts. This should not change materially even if regulators adopt the recommendations suggested by Professor Cummins in his paper to ensure that non-indemnity CAT bond are treated for regulatory purposes like reinsurance. If Hurricane Katrina demonstrated anything, it is that timing risk is as much of a problem for buyers of CAT bonds as it is for primary insurers and reinsurers.

The critical question for policymakers, of course, is at what level timing risk becomes so much of a problem that either homeowners reduce their insurance coverage (by purchasing policies with much larger deductibles, to make them more affordable) or insurers withdraw from writing any coverage at all, viewing the risk of remaining in the market not to be worth it at any price. Admittedly, it is difficult to establish at what level of damage this becomes a significant problem. Nonetheless, I submit that there is somewhat of a “I know it when I see it” aspect to this issue. Clearly, if the nation continues to experience several more

hurricane seasons like 2004-05, it is likely to be all too evident that the private market will have failed.

As a citizen and taxpayer, I’d rather not risk waiting to find out. As long as we continue to do nothing except to provide after-the-fact disaster relief, the nation will have an inefficient and unfair policy toward large-scale natural disasters in particular. It is inefficient because the prospect of disaster relief, coupled with inadequate loss mitigation measures and incentives, will result in more damage, and thus more federal assistance, than need be the case. And the after-the-fact disaster approach is unfair to taxpayers (if not this generation, then the next one) in parts of the country who at some point end up subsidizing those who voluntarily choose to live and work in high-risk areas.

The nation can do better, in my view, by establishing a more formal reinsurance system for mega-catastrophes, which also has incentives for better loss prevention or mitigation. The insurance should be available only for upper-tier losses or annual losses beyond some admittedly arbitrary threshold (defined either as a percentage of premiums, as in the case of federal terrorism insurance, or for damage above some probability, such as 1 in 50 or 1 in 100). Below the threshold, private reinsurance, state insurance plans, and primary insurance should continue to operate. But all such parties should be allowed to purchase reinsurance beyond some attachment point from the federal government.

Unlike federal terrorism insurance, for which no premiums are charged and thus no pre-funding is in place, federal catastrophe insurance should be pre-funded because it can be. Catastrophe risk at least can be modeled with some degree of precision because the events have occurred frequently before (albeit not with the frequency and severity of the storms of the past two years). Premiums should reflect actuarial risk and should credit buyers for local and state mitigation efforts (building codes and zoning policies) that cost-effectively mitigate losses. The program could be administered by a quasi-independent arm of the Treasury Department (analogous to the regulator for federally chartered banks, the Comptroller of the Currency).

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Such a “layered system” of financial responsibility coupled with better preparedness and cost-effective mitigation incentives for mega-catastrophes makes sense on many levels:

- A layered system provides appropriate incentives for the parties in each “layer” to take loss-mitigation measures to minimize their own exposures to financial loss in a cost-effective manner. Faced with the actuarially justified annual costs for living or working in exposed areas, some individuals and businesses may choose to locate elsewhere. Others may decide to accept the inevitable risks associated with particular locations but to improve construction of their houses and businesses to minimize losses. If the federal reinsurance contains appropriate incentives for well-enforced, up-to-date building codes and sensible land-use policies, state and local governments will be more likely to improve public infrastructure and prevent reconstruction in high-risk areas.
- It is fully appropriate that the federal government reinsure against mega-catastrophe risks. As I have noted, because of its borrowing capacity and its ability to print money, the federal government does not have the “timing risk”—or the risk that losses will occur too soon before premiums are collected to fully fund them—that private insurers, reinsurers, state-sponsored catastrophe insurers, and reinsurers inevitably face. By providing backstop insurance for the largest losses, the federal government would dramatically shrink this timing risk

and, thus, improve the ability of private and state-sponsored insurers and reinsurers to charge actuarially appropriate premiums that are not burdened with additional and costly risk loadings. Furthermore, actuarially appropriate premiums would promote cost-effective mitigation and thus reduce the social and economic costs of future natural catastrophes.

- Formal federal reinsurance, thus, also would help ensure that private insurance remains available for homeowners in risk-prone areas of the country.

In short, ironically, the best way for the federal government to minimize its liabilities for future natural disasters is to take proactive measure now, in the form of more formal pre-funded reinsurance rather than to continue to muddle through, year after year, with ad hoc supplemental appropriations for disaster relief.¹

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¹ I address some of the operational details of this proposal in Litan (2005).

What Is the Appropriate Role of the Federal Government in the Private Markets for Credit and Insurance? What Is the Outlook?

Joseph E. Stiglitz

I want to focus my remarks this morning on the role of government in risk-bearing. A little over a decade ago, I addressed the issue of the role of government in risk-bearing at a conference sponsored by the Federal Reserve Bank of Cleveland (Stiglitz, 1993). I used the market failure/government failure paradigm, sketching out in particular limitations in markets and government that led to a role for government in this area. I identified

- important risks for which the market does not provide adequate insurance, such as inflation, floods, and crime;
- important risks for which individuals and firms frequently choose not to buy insurance, but which result in significant adverse consequences for those individuals, leading to government bailouts (and because government cannot commit itself not to engage in such bailouts, there is in fact an incentive for individuals not to purchase adequate insurance);
- important risks for which the market provides insurance, but inefficiently and/or at a high cost (contributing, of course, to individual's *not* purchasing adequate insurance); and
- intergenerational risks.

I explored, too, the reasons for these market failures, including the problems arising out of asymmetries of information (adverse selection

and moral hazard). By then, the theory of asymmetric information had already developed to the point where it helped explain why insurance markets often do not function well. Private insurance firms may spend an inordinate amount of resources in attempting to identify low-risk individuals—essentially dissipative expenditures intending to limit the extent of redistribution. Michael Rothschild and I had shown how these attempts to screen also limited the extent of insurance that might be provided in the market. Our later work (Rothschild and Stiglitz, 1997) explained how the availability of better information might actually impede the ability of insurance markets to provide coverage for important risks.

I want to briefly explore what has happened since then to our understanding of the role of government in risk-bearing, focusing on particular episodes and events.

1. We have learned that the problems of accounting in insurance are even more difficult than we had thought, making it more difficult to ascertain whether a private insurance firm is, or is not, solvent. The ability of so many firms in the United States to manipulate their books (most recently in the case of AIG)—even when it has not resulted in bankruptcy—has highlighted the problems of accounting. These problems played into the government bailouts (and impending bailouts) of private pension (and possibly retirement health insurance) programs. (But more was at play there—the politics of wealth transfer, discussed below.)
2. It means, of course, that individuals have enormous difficulties in assessing whether they do or do not have coverage for important risks—the firms from which they have bought insurance may not be able to deliver when needed. This was key to understanding some of the problems in East Asia, where many Korean firms thought that they

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had purchased protection against exchange rate risk, but the insurance was not there when the insured-against event occurred.¹

3. Natural disasters, such as Hurricane Katrina and, in earlier years, hurricanes in Florida and floods along the Mississippi, have made two things clear: Large numbers of individuals facing large risks have not purchased insurance (for one reason or another); and, when disasters happen, there will be a government bailout. (The recognition of this, in turn, provides one of the reasons individuals limit the purchase of insurance; that is, if it is left as a voluntary matter.) There is clearly a role for government *ex ante*, but ascertaining what that role should be (requiring the provision of private insurance, providing public insurance, etc.) is not so simple. Determining appropriate actuarial odds for small-probability events is, in any case, difficult, and there is always a worry about private insurance companies exploiting consumers, especially when the insurance is made mandatory. But if the private sector has strong incentives to overcharge, the public sector has strong incentives to undercharge. Finding the right balance is not going to be easy. Private insurance companies have some advantage in providing insurance for fires—in particular in providing “regulations” concerning sprinklers, which if imposed by the government would be viewed as bureaucratic intrusion. They may perform this role in flood and hurricane insurance; in addition, they may have an easier time charging higher premia for properties that are more at risk.
4. By the same token, East Asia taught us that when large numbers of individuals and firms fail to buy adequate coverage, it can have macroeconomic consequences. The government may be forced to bail out

firms, or intervene to stabilize the exchange rate (a kind of indirect bailout), at great cost to others. The failure of large numbers of individuals to purchase insurance has externalities, which is a concern that provides a rationale for government intervention. The failure to buy insurance may be partly related to high transactions costs (see point 5), but also to individual irrationality, the importance of which has been stressed in recent research (for example, the difficulties individuals have in assessing small risks). This research has called into question the conventional paradigm based on rationality. Governments may want to take “preventive” actions when adverse consequences result from large numbers of individuals failing to act in ways consistent with rationality, especially when those consequences lead to perceived needs for collective action. (Government currently subsidizes insurance considerably through preferential tax treatment. But these subsidies often distort the market and are hardly directed at correcting the market failures.)

Three lessons emerge:

- i. the importance of restrictions on exposure, both by banks and financial institutions;
 - ii. the importance of anti-trust policies in reducing the number of firms that fall into the “too big to fail” category; and
 - iii. the importance of governments paying attention to the impact of various policies (such as capital market liberalization) on national exposure to risk and the ability of governments to respond to those risks.
5. I had written earlier about transactions costs as a rationale for government provision, but in some cases the size of transactions costs have turned out to be truly enormous. One study of the partial privatization of the provision of pensions (annuities) in the United Kingdom showed that benefits were reduced by 40 percent as a result of transactions costs. These costs are,

¹ The problems are exacerbated by the importance of hard-to-estimate correlations among the risks. Some of the standard methods used by regulators to assess financial soundness ignored these correlations.

of course, related in part to consumer irrationality, e.g., the gullibility of individuals to promises (or at least prospects) of higher returns gives rise to “churning.” While regulators know how to (imperfectly) insure *viability* of insurance companies, regulating practices that exploit consumer ignorance is far more difficult.

6. Meanwhile, the market by itself has shown little improvement in its ability to provide insurance against many of the potentially long-run risks that individuals care about, such as annuities that protect against inflation, though in some cases there have been some steps in the right direction by the government. (Providing inflation-protected securities was one of the important initiatives of the Council of Economic Advisers during the Clinton administration.)
7. The difficulties that national insurance and global reinsurance companies faced in the wake of the natural disasters of 1993-94 raised the problem of the ability of private markets to handle large losses. The Council of Economic Advisers in the Clinton administration, in an attempt to avoid the moral hazard associated with solutions proposed by the insurance industry (a variety of forms of bailouts), proposed creating a kind of government-sponsored Arrow-Debreu securities market for these catastrophic losses. Though there was some political support for this idea, many in the industry wanted a more outright subsidy.
8. The political economy of insurance has turned out to be one of the more interesting developments. At one time, it became recognized that providing underpriced insurance to individuals and firms was a good way of providing hidden subsidies, with costs borne by future governments. Subsequently, there was an attempt, through the Credit Reform Act, to have the government provide *current* actuarial estimates of losses and hidden subsidies. Although this was an important step forward, it has clearly not been executed as thoroughly as

one would have wanted. In the case of the Employee Retirement Income Security Act, regulations have left pension funds with large holes that the government will have to fill.

The same issue arises in the recent debate about Social Security reform. Clearly, some of the proposed reforms will, in not implausible circumstances, leave large numbers of individuals with what will be clearly viewed as insufficient levels of income. As it is highly likely that society will not tolerate large numbers of the elderly living in poverty, there will necessarily be a government bailout. Thus, though the reforms are being promoted as a way of avoiding a bailout of Social Security using general revenues, they are clearly only changing the form of the bailout—from that of the Social Security program to one that will bail out individuals. This is, of course, one of the difficult issues arising in the analysis of “implicit” liabilities. The government has an implicit obligation to provide Social Security benefits *roughly* commensurate with those promised, though clearly there can and will be adjustments. The government also has an implicit obligation to make sure that large numbers of its citizens are not living in poverty, though the nature of this obligation may be harder to quantify.

(The current reforms also raise questions about intergenerational social contracts and, more broadly, what may be viewed either as intergenerational insurance or intergenerational social solidarity. The current social insurance system is designed, in effect, to allow some smoothing of incomes across generations, of a kind consistent with what individuals might have wanted could they purchase such insurance behind a veil of ignorance [not knowing the generation into which they would be born]. The so-called progressive indexation reform would greatly undermine this kind of social insurance.)

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The debate over Social Security reform again illustrates the difficulties of risk assessment. The financial soundness of the Social Security system depends on 75-year projections of variables such as life expectancy, birthrates, migration, retirement ages, and wage and productivity increases. Under some scenarios, the Social Security system is solvent; under others, it faces significant problems. The administration has chosen to emphasize those scenarios which are adverse—though in its advocacy of other reforms (such as tax cuts) it has used scenarios which, were they used to assess the solvency of the Social Security system, would make it appear to be in far better shape.

9. Nowhere are the inadequacies of the current system of providing insurance more evident than in the case of health insurance, where, as a result of preferential tax treatments, we have over-insurance on the part of some, while nearly 50 million Americans have no insurance against one of the most important risks they face. This system has resulted in huge inequities and inefficiencies in the provision of care (including preventive care) and treatment. Some of the proposed (and recently instituted) reforms probably result in increased distortions, associated with cream skimming (self-selection out of the insurance pool), that in turn will lead to higher prices for those remaining in the insurance pool, which will thus cause some to drop out and increase the number of those without insurance. The appropriate response to this problem clearly would take me beyond this short discussion. Suffice it to say that any successful reform will require a more thorough analysis of the areas in which moral-hazard problems really arise and a more extensive public discussion of attitudes toward separating equilibria (cross-subsidization of the sick by the healthy). There are huge explicit and hidden government expenditures, and it would seem that these expenditures could

be spent in ways that were more conducive to efficiency and more consistent with basic principles of equity.

This review of the role of government in the provision of insurance has been necessarily sketchy. There are many lessons to be drawn from these experiences.

- There is not just a single moral-hazard problem but several, often interrelated, moral-hazard problems. Reducing one set of problems may increase another. Care needs to be exercised in determining the design of government intervention. This is illustrated by the controversy over deposit insurance. Deposit insurance, it has been argued, leads to an increase in the moral hazard of individuals taking insufficient care in assessing banks' risk-taking behavior and a consequent moral-hazard problem of banks undertaking excessive risk-taking. But government cannot commit *not* to intervene, so that even without formal deposit insurance, there may be implicit insurance, with similar consequences. On the other hand, it is virtually impossible for depositors to monitor bank behavior effectively; and such monitoring is a public good. It should accordingly be provided by government. The most effective and efficient way of controlling the moral hazard may be a combination of incentives (ensuring that the owners of the bank have enough at risk not to undertake excessive risk taking) and controls (both of the nature of lending and of conflicts of interest that give risk to problematic lending.)²
- Government policies play a central role in affecting many of the key risks facing market participants. Capital market liberalization exposes countries to new risks; automatic stabilizers reduce economic volatility. With government as an actor within the economy, this suggests the need to confront government with appropriate incentives to miti-

² The general principles of "robust regulation" are set forth in Stiglitz (2001).

gate these risks. For instance, indexing (say, government interest payments) increases the government's cost of failing to keep inflation under control. There are, however, two counterarguments. The first results from the presence of multilayered agency problems. Government is affected by voter responses. Increasing voters' cost of inflation may provide greater incentives for government to control inflation than the direct budgetary costs of indexation. This is related to the second problem: Government is not a single "actor." Governments today may try to pass on costs to future governments. What matters are incentives facing current governments, and designing appropriate incentives may not be easy.

- Underlying many of the problems we have identified are difficulties in assessing risk—and systematic biases in individual risk assessments. Research in behavioral economics in recent years has emphasized systematic problems in risk assessment, especially associated with small-probability events. But even if individuals are fully rational and are able to take into account complex correlations using sophisticated Bayesian analysis, there simply may not be sufficient data to make an adequate risk assessment with much confidence. Global warming is proceeding at a pace far faster than even most climate scientists expected. We still do not know the impact on weather variability, and this is what is relevant in assessing actuarially fair insurance premia for damage due to hurricanes or floods.

Government may be in a better position to provide risk assessments than ordinary citizens; but standard political economy analyses suggest that government itself may be tempted to exploit voter misperceptions, just as insurance companies are.

Most importantly, we have repeatedly seen government bailouts—the provision of insurance ex post. The current system of providing such ex post insurance is inefficient and inequitable. There has to be a better way. To find that better way requires understanding why individuals have been inadequately insured, which further requires a deeper understanding of both the market and public failures in risk markets. I hope this discussion has provided some illumination into a number of these recent failures.

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