

CONFERENCE ON CATASTROPHIC RISKS AND INSURANCE

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GOVERNMENT NATURAL CATASTROPHE INSURANCE PROGRAMS

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Powerpoint presentation

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Government Natural Catastrophe Insurance Programs

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Outline of Presentation

- Review of 16 programs in OECD countries. Created a graph to understand policy tradeoffs in programs.
 - Analyzed the Policy Tradeoff Model to Consider the Turkey Catastrophe Insurance Program
 - Evaluated Potential Lessons for Developing Countries with Natural Catastrophe Risk
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Natural Catastrophe Insurance Programs in Selected Countries

- Informal Survey of Government Supported Programs in 16 Countries
 - Programs Evaluated to Understand Policy Alternatives Used by Different Governments
 - The Programs involved tradeoffs based on different policy objectives.
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Why Government Involvement?

- ❑ Private Insurance Industry is Limited in its Ability to Finance Catastrophe Risk.
Insurance is best suited to cope with independent non-correlated risk. The law of large numbers is the mainstay of insurance. The larger the pool of independent risks in an insurance pool, the lower the variability of risk. Private Insurance passes through this reduced cost of risk to its policyholders.
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Why Government Involvement?

- ❑ Catastrophe Risk is a highly correlated risk. If one person is damaged by a catastrophe, many people will be damaged. The pooling of correlated risk increases the variability of risk: the exact opposite of the law of large numbers. As a result, the natural advantage of private insurance is lost.
 - ❑ Private Insurance has developed techniques to cope with correlated risk. As a general rule, the cost of the private solutions are expensive.
 - ❑ As a result, if the Government wants an insurance program to cope with catastrophe risk, some form of Government involvement is needed to keep the cost manageable.
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Reasons for a Government Catastrophe Program

- ❑ The government perceives a need for catastrophe insurance but it is unavailable at a reasonable cost. Governmental financial support is needed to reduce the cost of insurance. The National Flood Insurance Program in the United States is an example of this type of program.
 - ❑ The Government is making considerable expenditure on post disaster catastrophe assistance and wants a more efficient tool to direct government aid. The Turkish Catastrophe Insurance Pool is a recent example of this approach.
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Fundamental Tradeoff

- ❑ Governments have the ability to access funds at lowest costs through either borrowing or taxes. As a result, they should be able to offer least expensive natural catastrophe insurance.
 - ❑ All Government insurance programs suffer from severe problems of moral hazard. Moral hazard increases the cost of risk that becomes reflected in escalating costs of the insurance program.
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Moral Hazard and Government Insurance

- ❑ If governments bear the costs of catastrophes, their citizens are unlikely to reduce the risk of their behavior. This is moral hazard.
 - ❑ If citizens fail to reduce their risk, the cost of providing protection will increase.
 - ❑ Private insurance limits moral hazard by restricting benefits. Two common techniques are co-pays and deductibles.
 - ❑ Historically, Governments are reluctant to “discriminate” between citizens on benefits provided by the government.
 - ❑ A uniform package of catastrophe benefits provides little incentive for citizens to change behavior to reduce risk. They will receive the same benefit regardless of their risk.
 - ❑ Consequently, almost all government insurance programs suffer from severe problems of moral hazard. This is particularly true for insurance programs that substitute for government aid programs.
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Government Insurance Programs

- ❑ Government natural hazard insurance programs take two forms: government acting as insurer and government acting as reinsurer.
 - ❑ Government as insurer. Government assumes direct liability for losses without private insurance sector bearing some portion of loss. Spanish program and National Flood Insurance Program in United States. The program is meant to supplement gaps in private insurance.
 - ❑ Government as reinsurer. Government provides financial support to the private insurance market. Private insurance industry may be required to retain some risk (Japan) or can voluntarily retain risk (France).
 - ❑ Both approaches tend to rely on private sector to provide needed administrative support. The private sector is paid a commission or fee for providing needed administration.
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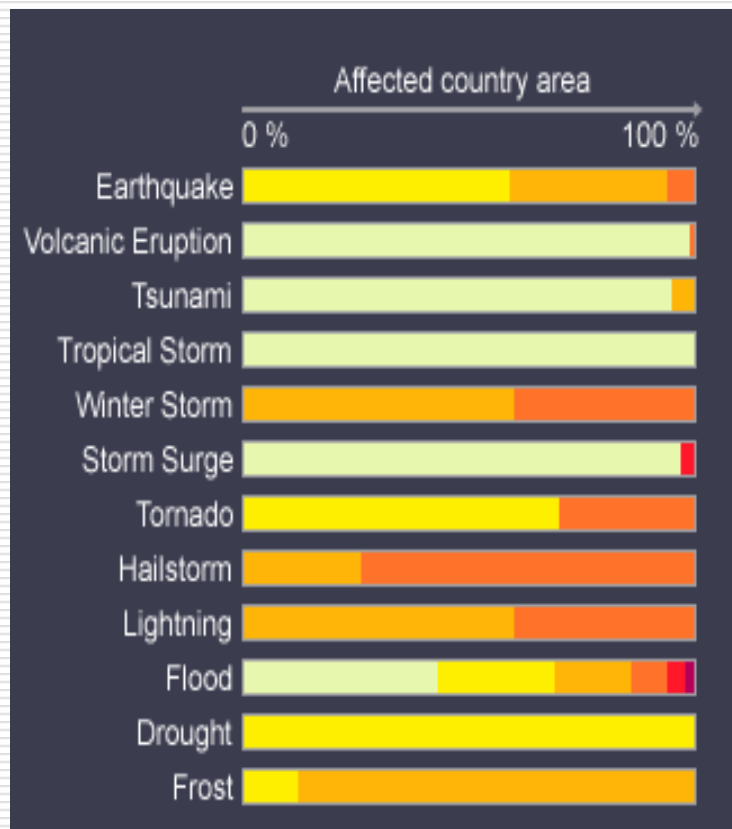
Scope of Government Program

- Partially dependant on level of risk.
Countries with low levels of risk tend to have broader based programs.
Countries with high level of risk tend to have programs that focus on the particular risk.
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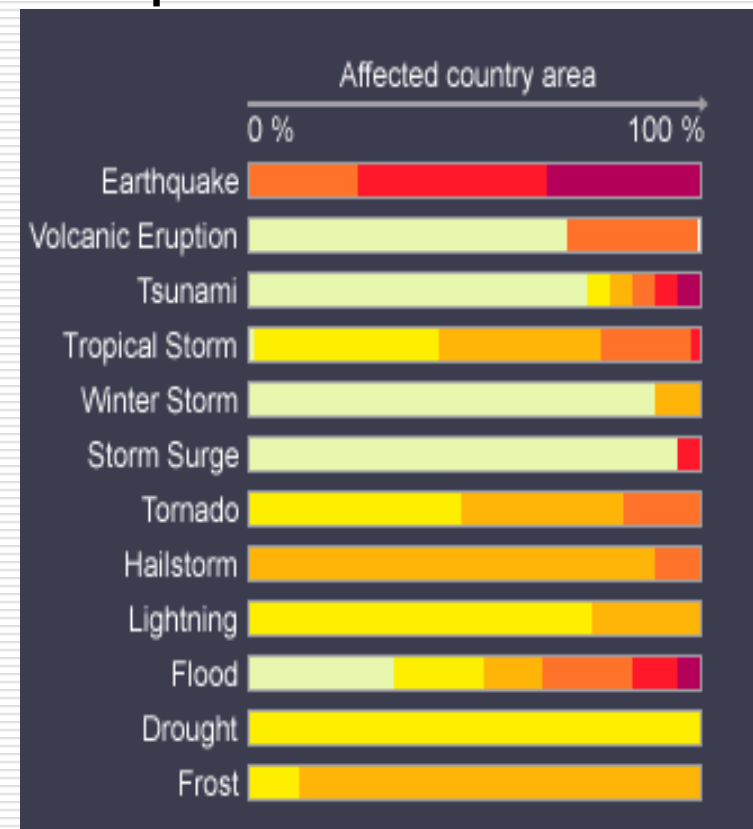
Exposure



□ France



□ Japan



Comparative Features Between Different Programs

- ❑ Five comparative characteristics can be defined:
 - ❑ Moral Hazard
 - ❑ Adverse Selection (Anti-selection)
 - ❑ Lost Potential to the Government
 - ❑ Subsidy
 - ❑ Cost of Insurance to the Insured
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Table 3. Insurance Solutions for Catastrophe Risk

Insurance Solution	Moral Hazard	Adverse Selection	Loss Potential	Subsidy	Cost of Insurance
Government as Insurer	high	low	high	high	low
Compulsory Private Insurance (UK)	high	low	high	medium	medium
Compulsory State Reinsurance Solution (France)	high	low	high	high	low
Compulsory State Reinsurance Program with Graduated Premiums (Spain)	medium	low	medium	medium	medium
Voluntary State Program with Graduated Premiums	low	high	medium	low	high

What is the right program?

- “The wide variety of flood insurance solutions available in the different countries is quite astonishing. State and private insurers provide cover in a variety of casts, and the involvement of the reinsurance community can be anything from “zero” to “substantial”. Insurance penetration levels lie between 0% and 100% and the scope of cover-provided that insurance is available at all-ranges from “very restricted” to “unrestricted”. None of this comes as a surprise, however. Hazard risk and loss potential differ widely from one market to another, just as the economic development levels and the structures of the national insurance industries do. This constellation is joined by specific issues associated with flood insurance. Clearly these circumstances do not allow for any ideal and universally valid or applicable solution for insurance against floods”
 - *Floods: An insurable risk?*, Swiss Re, 1998.
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Applying the analysis to Turkey

- ❑ Turkey Catastrophe Insurance Pool (TCIP) was established in 2000. The TCIP was meant to replace a governmental obligation to finance housing reconstruction after earthquakes. As such, it falls within the “governmental substitution” justification.
 - ❑ Program is a mandatory insurance program tied to property registration. It has variable rates based on risk. To date, it has modest penetration. In Istanbul, the market penetration is approximately 27.3%. It had been as high as 32%. As conceived, the program was to be the sole source of funding for earthquake losses.
 - ❑ In terms of program characteristics, the TCIP had all the main components for a successful aid replacement insurance program:
 1. Graduated rates to reduce moral hazard;
 2. Mandatory program to reduce adverse selection;
 3. Reliance on administrative strength of insurance industry;
 4. Strong support from the private reinsurance industry to constrain cost of program to the Government of Turkey.
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Turkey continued:

- Problem:
From 2000 to 2003, fifty earthquakes occurred in Turkey and the TCIP paid total damages of US \$7 million to 4,200 homeowners. For the two most serious earthquakes, the Government of Turkey waived the provisions of the Disaster Law requiring the purchase of insurance and declared all citizens eligible for government support, insured or not. The costs of non-insured victims in the 2002 and 2003 earthquakes cost the Treasury an additional US \$200 million.
As a result, the percentage of homeowners purchasing insurance has decreased with an expectation that the government will pay for damages regardless of the insurance program. Typical moral hazard problem.
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Government Catastrophe Insurance Programs and Developing Countries

- This is a topic of considerable interest in the developing world. There are major studies underway in a wide ranging number of countries to evaluate catastrophe insurance programs. The author has been involved in work for at least 10 countries worldwide on this topic. The experience of the OECD countries is being examined to find applicable models for the developing countries. For example, the French model was used as a prototype for a program proposed by the World Bank for Central America.
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Developing Country Lessons

- Differences between OECD experiences and issues for developing and emerging countries:
 - A. Moss Analysis: David Moss has extensively researched the role of governments as ultimate risk bearers. He has developed a three stage model of risks that governments are willing to assume. The model suggest that the first risks assumed by governments are those that promote economic development. The second are those associated with guarantying workers rights. Finally, governments assume risk associated with “security” issues. Protection against natural hazard risk falls within the third category. For many countries at earlier stages of economic development, it may be that they are not yet interested in the third stage of governmental risk assumption. Rather, governments are still assuming risk associated with encouraging economic development and fostering worker’s rights.
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Developing Country Lessons

- ❑ Major impetus of existing government programs is substitution for government post disaster aid. In many developing countries, post disaster aid is primarily provided through assistance of the international community. There is no domestic budgetary funds that are more efficiently being spent through the use of a government sponsored insurance program. Of course, this provides less reason to promote a government insurance program with fixed budgetary obligations.
 - ❑ The need to cope with catastrophe risk in developing and emerging economies is real. The size of losses relative to economic resources are enormous. As the costs of catastrophes continue to increase, the burden will only grow larger. Catastrophes are an issue of development. Finally, it is not clear that the international community is willing to continue funding losses *ad hoc* without a more defined commitment from governments in poorer countries.
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Possible Lessons for Developing Countries

- ❑ Need to have a viable domestic insurance industry as an administrative platform.
 - ❑ As a start, it is important to at least develop budgetary discipline over post disaster expenditures. This primarily means creating a reserve fund. It is a natural progression to move from a reserve fund to a sponsored insurance program that substitutes for the reserve fund expenditures.
 - ❑ The international community needs to be aware of the moral hazard created by their activities. If governments perceive that they will not bear the costs of catastrophes in their countries because of post disaster aid, they have little incentive to allocate scarce resources to a government supported insurance scheme.
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Conclusion

- ❑ There is no best catastrophe insurance program. The alternatives are based on existing conditions and intended objectives.
 - ❑ While access to governmental financial resources is critical in coping with large-scale covariant risk, the problem of moral hazard must be a key element in the planning process. Control of moral hazard is extremely difficult for governments.
 - ❑ Reinsurance schemes seem to provide the best access to a country's treasury with the least risk of moral hazard. Programs that integrate variable premiums and limitations on benefits best mirror the private sector efforts to control moral hazard.
 - ❑ The lessons of the existing programs may be of limited value to the developing world. Governments in those countries are still coping with more fundamental risk issues like economic development and worker's rights. As the cost of catastrophes continue to increase, it may be that financing catastrophe losses becomes a fundamental issue of economic development.
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