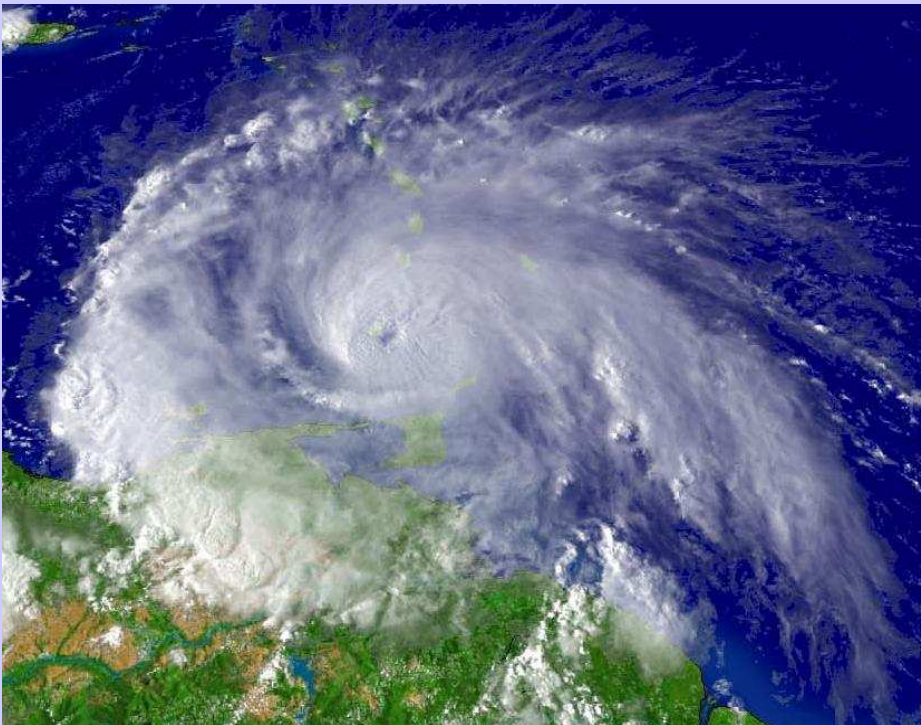


Global Platform for Disaster Risk Reduction
Geneva, June 5-7, 2007



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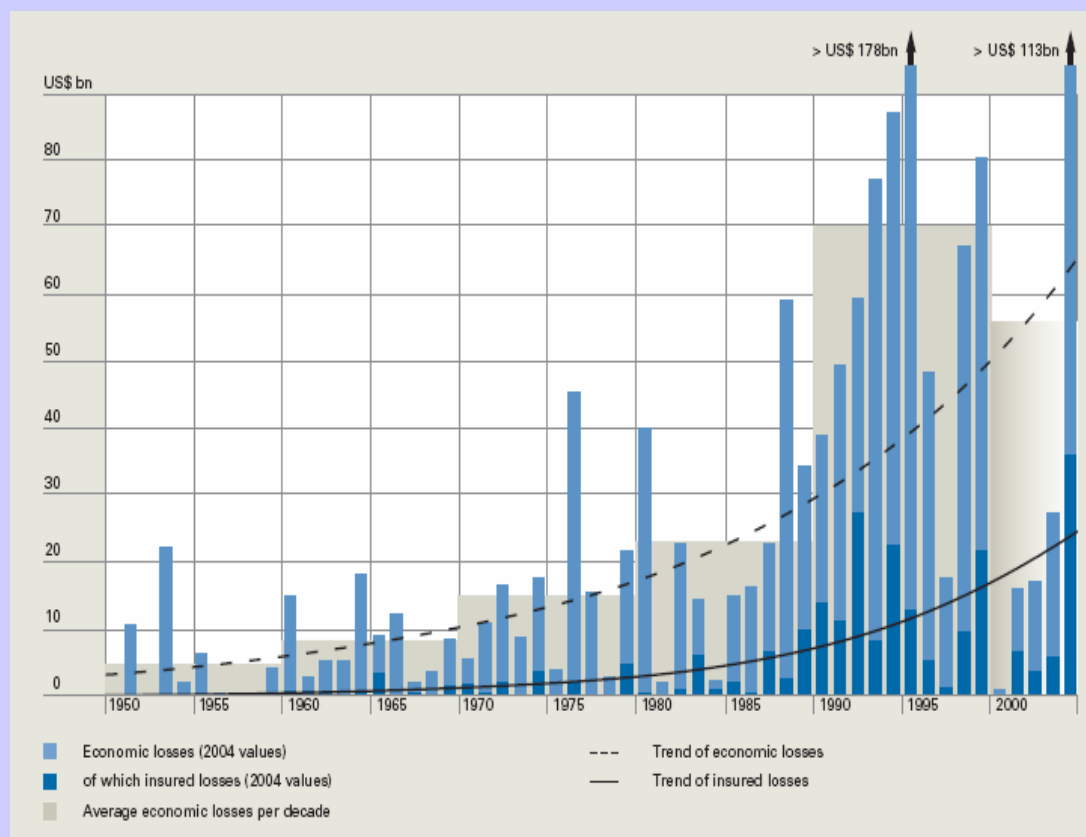
Catastrophic Risk Financing: Tools and Products



Natural disasters may become more severe and more frequent

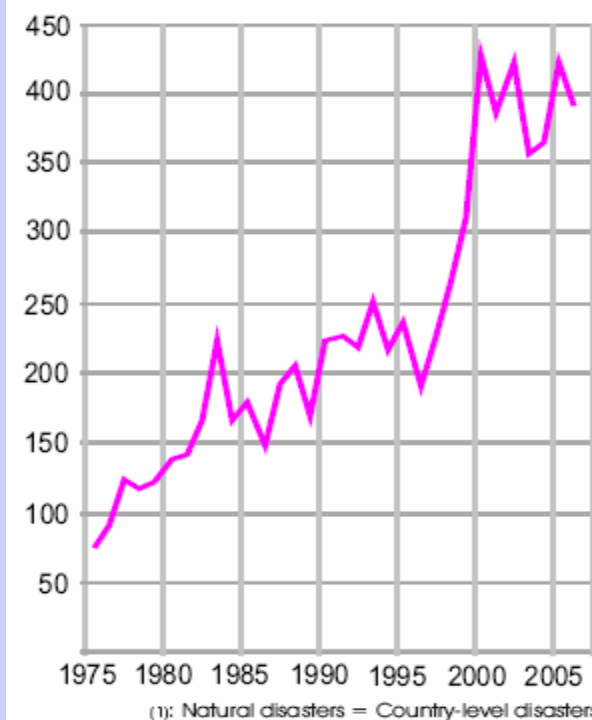


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Source: Munich Re (2006)

Time trend of natural disasters⁽¹⁾, 1975-2006



Source: CRED

Macro economists have tended to ignore natural disasters



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■ Arrow Lind Public Investment Theorem

- ◆ “...when the risks associated with a public investment are publicly borne, the total cost of risk bearing is insignificant and, therefore, the government should **ignore uncertainty** in evaluating public investments...” (Arrow and Lind, 1970)
- ◆ The government should apply the policy of **risk neutrality** in the evaluation of public investment

But this theory can break down



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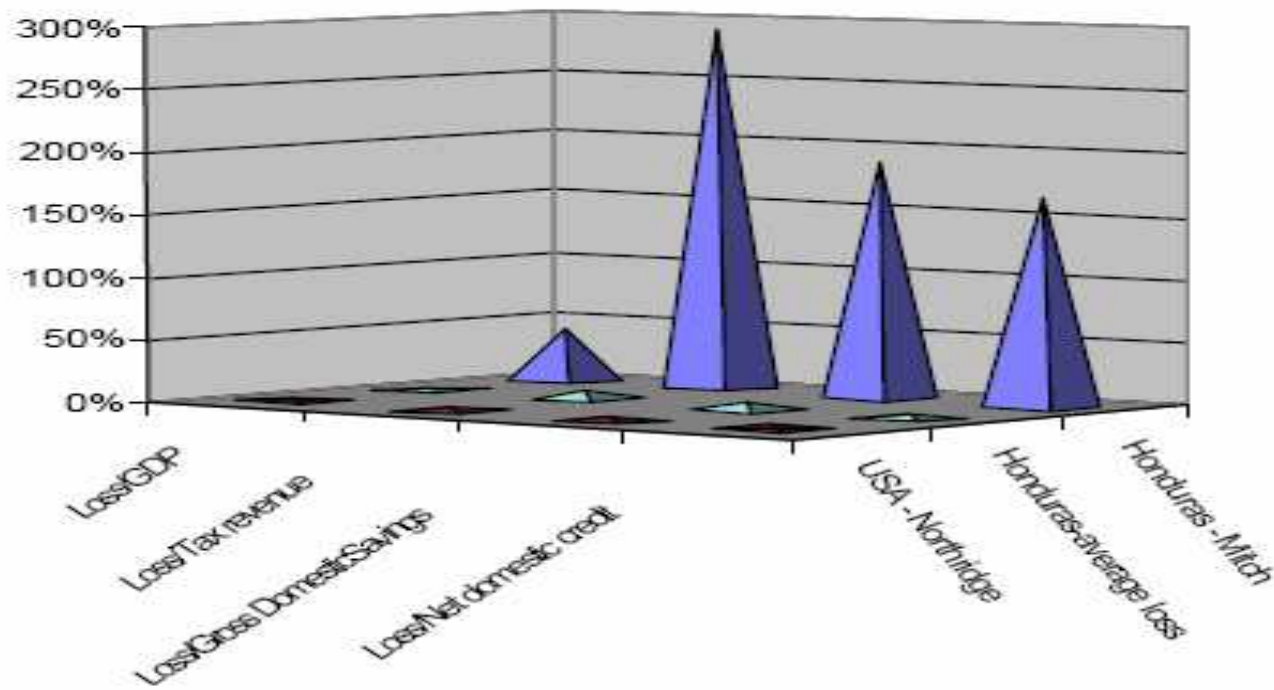
- Limited number of large projects
- Covariance across country or region
- Limited tax base
- Post disaster opportunity cost
- Liquidity constraints

As is demonstrated by two extremes



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**Natural disaster losses
compared to economic indicators**

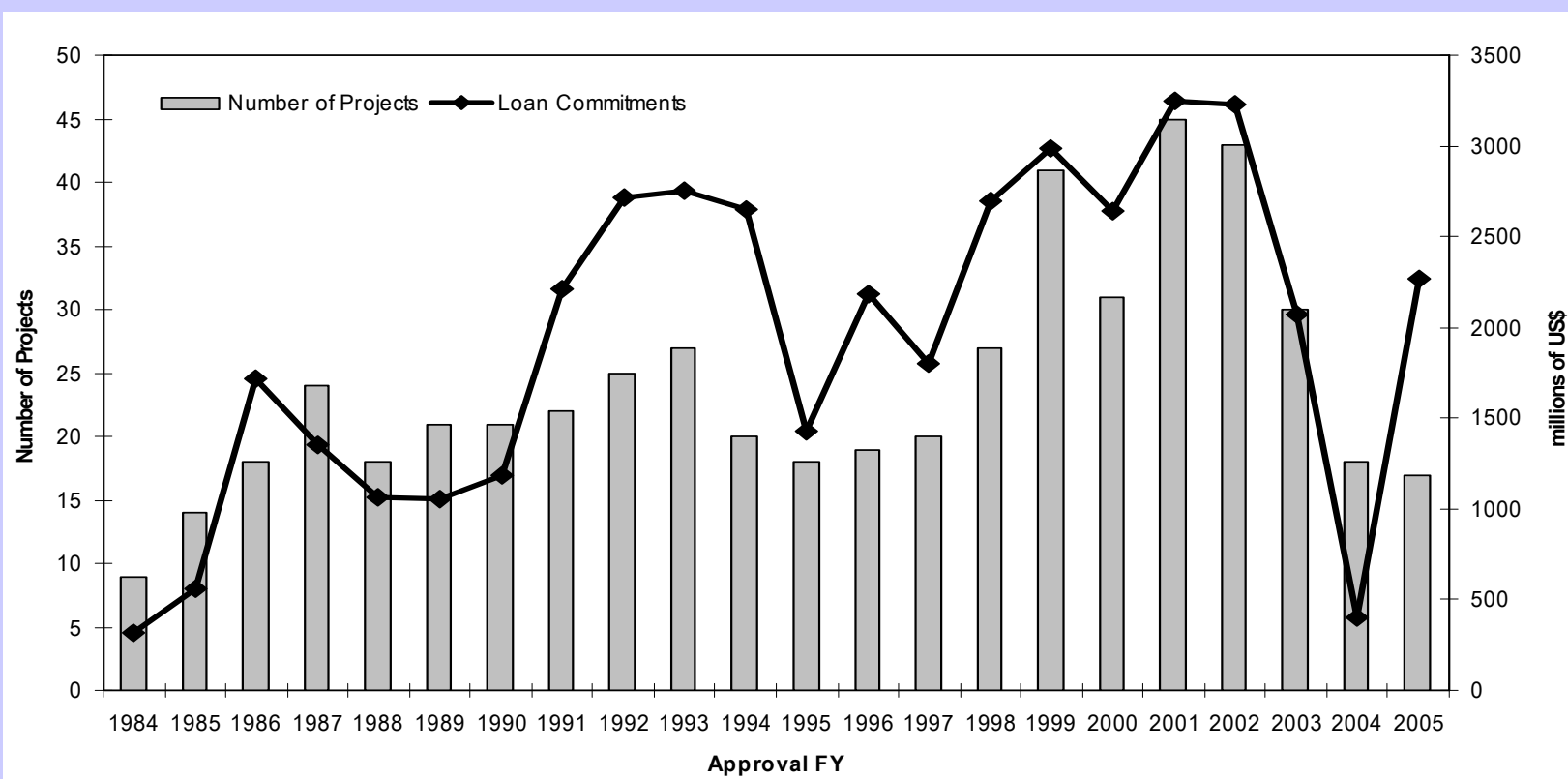


Developing countries mainly rely on post disaster borrowing and grants



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World Bank emergency lending related to natural disasters



The World Bank tries to improve country risk management behavior



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- **Reduce moral hazard: Get government off the hook when a viable market solution is possible**
- **Discourage donor support of the better off sections of the population**
- **Focus government/ donor support on immediate relief, housing the poor and replacing critical infrastructure**
- **Shift from post disaster financing to ex ante risk financing (of short term liquidity needs)**



	Immediate hours/days	Short term 1-3 months	Medium term 3-9 months	Long term over 9 months
Financial needs for post-disaster operations				
Relief				
Recovery				
Reconstruction				
Financing tools				
Ex post financing	Budget contingencies	Donor assis. (relief) Budget reallocation	Domestic/ external credit	Donor assis. (reconst.) Tax increase
Ex ante financing	Reserve fund	Parametric ins.	Traditional ins.	

Agenda of the Session



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- **Preconditions for the development of weather based financial products**
- **Turkish Catastrophic Insurance Pool**
- **Caribbean Catastrophe Risk Insurance Facility**
- Catastrophe bond in Mexico
- Index based livestock insurance pool in Mongolia