

Mixing Markets and Government in Risk Sharing

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My research program has been focused on developing markets for agricultural risk both in the US and developing countries. In the US, these efforts have been challenged by heavy intervention from government. While many agricultural programs can be explained as unabashed rent seeking, the arguments and rationale for some of the intervention has an eerie resemblance to the topics to be discussed during this workshop. For example, the US government is heavily involved in reinsuring the US crop insurance program. This unique arrangement has been justified based on many of the same arguments that might be used to justify a role for government in sharing risk for extreme events that are created in the post September 11 era. Major droughts in the Midwest create what have been referred to as 'uninsurable' risk due to the correlated nature of the risk. Many agricultural risks around the world have these characteristics. Thus, sorting out the public policy issues associated with alternatives for coping with these risks is important.

Significant lessons may be garnered from the agricultural experience. Some are more transferable to the topic at hand than others.

- ✓ If you pay people to take risk they will respond by taking more risk.
- ✓ When people take on more risk without proper mitigation, there will be greater losses in the future.
- ✓ Complexity creates increased opportunities for rent seekers.
- ✓ Creating public-private partnerships for risk sharing is challenging.

There is an emerging literature in agricultural economics that reveals the extent to which marginal land has been converted into crop production due to subsidies that are tied to the Federal crop insurance program and ad hoc disaster aid. Some estimates suggest that as much as 10% more acres are planted because of these risk subsidies. Because these new plantings are also occurring in more risky production areas future weather events will create greater losses. Many US policies have encouraged increased risk taking behavior on the part of private decision makers. Past government programs that lowered premiums for flood, earthquake, and hurricane insurance encourage such behavior as well. Programs that help beach homeowners rebuild have been cited as particularly troublesome. Some very careful thinking is needed to assure that response to 911 minimize these type of behavioral responses.

A highly related area of concern has to do with finding a role for government in providing insurance products. Insurance is complex and government involvement in a complex industry offers rent seekers numerous opportunities to profit. One of the

principles of political economy is that complexity and lack of transparency that can accompany such complexity is a key to aggressive and successful rent seeking. Again, experience in the US crop insurance program is a case in point. The government has had two conflicting goals that motivate that program: 1) sound actuarial performance; and 2) high participation. Given the asymmetric information that dominate crop insurance, the dual problems of adverse selection and moral hazard have persistently plagued the program. This created actuarial performance problems. The response has been to add more subsidy to encourage the lower risk farmers to participate. Since the government does the actuarial accounting using unsubsidized premiums, adding subsidies and bringing lower risk farmers into the risk pool actually does accomplish both goals of improving actuarial performance and increasing participation. However, this solution simply added more expected payments to the most abusive farmers since they benefit disproportionately from any added subsidies.

The other feature of the private-public partnership in providing US crop insurance that is troublesome is the reinsurance arrangement between the government and the private companies. Since crop insurance is to be made universally available (no farmer can be denied), it was necessary to create a special arrangement. The standard reinsurance agreement (SRA) serves as the instrument for risk sharing. The SRA encourages the companies to adversely select against the government for the business they decide to retain versus that which they return to the government. The complex instrument has special provisions that are implemented on a state-by-state basis for seven different crop insurance funds in each state. The arrangement involves both a quota-share and stop loss arrangement. No company can lose much more than a dollar for every dollar of retained premium they hold in any state. The net result of the instrument is that the government subsidizes the companies an average of 15% for the premium they retain. Companies are not allowed to compete by charging different premium rates to farmers. They must use the government-established rates. The government also reimburses the companies for administrative costs. The combined incentives of this arrangement create many perverse incentives and poor performance in the overall program. Sales agents have captured many of the rents. Companies have had little incentives for fixing actuarial problems in various states. And barriers to entry for new companies are tremendous.

Several years ago, I was motivated by the work of Lewis and Murdock. They argued for government instruments that would take the tail risk out of catastrophe risk insurance. Some of their proposal involved auctioning off low probability-high consequence events. Much of our efforts around the world have followed these recommendations (Skees and Barnett). The conceptual frame for these solutions fits the discussion surrounding this workshop. The extreme event risks have significant ambiguity associated with pricing. Many of the risks are not well defined. And there has been inadequate effort at tying the risk mitigation and the quantitative risk reductions that may accompany improved security. Further, by offering only very well defined instruments that take the tail risk, the government should avoid much of the complexity and rent seeking behavior that have plagued other efforts of private-public partnerships.

Our international work has caused focus on indexed insurance products that would be triggered on parametric events such as extreme rainfall events or temperature. If we can index some of the potential extreme events then any number of alternative risk transfer instruments become possible and one can consider layering risk. For example, if one can develop the probability distribution of a significant theorist event, then the government may be involved in offering either free protection or discounted indexes in the extreme tail; catastrophe bonds might be involved in the next layer; and then more direct insurance products could be wrapped around these products to cover losses in what is generally termed the working layers.

The essence of my concerns is that serious thoughts be given to the institutional response for sharing risk of extreme events. Rent seekers are likely to gain big from any number of options. And while this may facilitate the end goal, there are likely ways to involve the government where such gains are minimized and the end goals are met with carefully crafted combination of government and markets for risk sharing. This is the challenge however. Finally, since much of the hate in the world that motivated the 9-11 attacks is rooted in poverty, I feel it is important to end with some comments on development. The massive amount of money to be made by the international reinsurance and risk management community from the US due to heavy subsidies on crop insurance has crowded out the interest in developing risk-sharing instruments in many developing countries. This is not a new story. But it is important to keep in mind that what we do in the US to influence the use of risk capital will have implications for the global market.

Lewis, Christopher M. and Kevin C. Murdock. "The Role of Government Contracts in Discretionary reinsurance Markets for Natural Disasters". *Journal of Risk and Insurance* 63(1996) pp. 567-597

Skees, Jerry R. and Barry J. Barnett. "Conceptual and Practical Considerations for Sharing Catastrophic/Systemic Risks." *Review of Agricultural Economics*. 21 (1999): 424-441.

Skees, Jerry R., "The Bad Harvest: More Crop Insurance Reform: A Good Idea Gone Awry." *Regulation: The CATO Review of Business and Government*. 1st Quarter, 2001, 24: 16-21.

Skees, Jerry R., "Agricultural Insurance Programmes: Challenges and Lessons Learned." *Income Risk Management in Agriculture*. Proceedings of an OECD Workshop, 15-16, May 2000. <http://www1.oecd.org/publications/e-book/5100121e.pdf>

Skees, Jerry R. "Agricultural Risk Management or Income Enhancement?" *Regulation The CATO Review of Business and Government*. 1st Quarter 1999. 22: 35-43.

Skees, Jerry R. "Opportunities for Improved Efficiency in Risk-Sharing Using Capital Markets." *American Journal of Agricultural Economics*. 81(1999): 1228-1223.