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**AVERSION TO RISK AVERSION IN THE  
NEW INSTITUTIONAL ECONOMICS**

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## AVERSION TO RISK AVERSION IN THE NEW INSTITUTIONAL ECONOMICS

Victor P. Goldberg

One significant division that emerged during the conference involved the role of risk aversion in analyzing institutional arrangements. I, along with Oliver Williamson, took the position that the risk aversion assumption deflects attention from the more significant determinants and that more progress would be made if we could bind our hands and agree to invoke attitudes toward risk only as a last resort.<sup>1</sup> Professor Richter has graciously given me this opportunity to elaborate upon this theme.

Risk aversion is a conversation-stopper. I mean this in two senses. First, for people with mono-causal world views, one explanation is enough. It is not fanciful, I think, to identify a standard research strategy. When confronting some stylized institutional fact (e.g., hedging in futures markets, commission pricing, sharecropping, indexation of prices) invoke risk aversion.<sup>2</sup> If that appears consistent with the facts, stop the search. This strategy is not a necessary consequence of the assumption of risk aversion, but the pattern seems, from an informal reading of the evidence, to be a strong one. Deprived of the risk-aversion short cut, the analyst would be forced to pursue other, and, I believe richer, lines of thought. Which leads to my second point:

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<sup>1</sup>See WILLIAMSON [1985, pp. 388-389]. KLEIN [1983, p. 370] and BARZEL [1982] have taken a similar position.

<sup>2</sup>See WILLIAMSON's [1985, p. 389] discussion of TOWNSEND's [1982] analysis of multi-period contracts. In Townsend's model there would be no multi-period contracts but for differential risk aversion.

modelling entails opportunity costs. If risk aversion is to be included, then we have to simplify the world in other ways in order to build tractable models or otherwise make some sense of a complicated reality. If we assume that people are more or less risk neutral, then we can focus on the sorts of questions that I think are important in understanding economic institutions. If we insist on including risk preferences in the model, then these other considerations must be put aside.

A common retort to the no-risk-aversion position is: But don't you believe that people really are risk averse?<sup>3</sup> The ad hominem variant on this theme is: Well, do you buy insurance? There are a number of responses to these arguments. The first, and probably least important, is that the evidence from the cognitive psychologists suggests that risk aversion does not adequately describe behavior.<sup>4</sup> But that observation is largely beside the point. Even if everybody were risk averse it might still be appropriate to assume risk neutrality. To make any headway in theorizing we must simplify reality and assume things known to be false.

I am bewildered by economists who make the "people really are risk averse" argument and at the same time make wildly unrealistic assumptions about the ability of individuals to make complex calculations and engage in long chains of sophisticated reasoning. The evidence on risk aversion

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<sup>3</sup>I suspect that much of the intuitive appeal of risk aversion to non-economists (notably law professors) derives from a misconception about its definition. Risk aversion for them means that people are averse to downside risk.

<sup>4</sup>See the papers reproduced in KAHNEMAN, SLOVIC, and TVERSKY [1982].

is at least mixed. The evidence regarding people's reasoning skills we see every day and it is pretty clear that most people can't handle tenth-grade word problems, let alone some of the sophisticated mental feats routinely assigned them by economic theorists. My point is not that the unrealistic assumptions negate the conclusions. It is simply that the assumption regarding risk preferences should, like the assumptions regarding computational skills, be judged for their usefulness, not for their realism.

The question about the purchase of insurance, alluded to above, had an implied premise: people buy insurance because (and only because) they are risk averse. This is a good example of how the risk-aversion assumption stifles inquiry. There are numerous reasons why parties might buy insurance even if they are not risk averse. An interesting array of problems and solutions awaits the analyst willing to go beyond the limits imposed by a risk-aversion based research strategy.<sup>5</sup>

Why might a large corporation with publicly traded shares buy various lines of casualty insurance? One might try to attack the problem by assuming that managers are risk averse and that the behavior of the firm in this dimension reflects the manager's preferences. I doubt that this line of argument will work. It implies that corporations which self-insure for the same problems act as if they are not risk averse. I

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<sup>5</sup>Another obvious area in which it is easy to stop at risk aversion as the explanation is the nature and function of futures markets. For examples of thoughtful analysts who have found risk aversion unhelpful in understanding futures markets, see WORKING [1962], TELSER [1981], and WILLIAMS [1986].

suspect that it would require some elaborate intellectual contortions to develop a plausible argument as to why some corporations act as if they are risk averse and others risk neutral.<sup>6</sup>

It seems to me far more helpful to suppress the question of attitudes toward risk and focus on why a risk neutral corporation might buy insurance. Perhaps the most interesting reason is that the insurance company is a specialist provider of risk management services.<sup>7</sup> (See GOLDBERG [1980] and MAYERS and SMITH [1982].) The insurance company provides services (for example, inspection) to reduce the firm's expected accident costs (including the costs of litigation and rehabilitation of victims). Since it is difficult to determine how well an inspector has performed the promised service, it is plausible that the inspection contract would make compensation contingent upon performance. That is, an efficient inspection contract might include deductibles, copayments, and ceilings -- standard features of insurance contracts. (I suspect, by the way, that it would be difficult to reconcile liability ceilings with a risk-aversion explanation.) The share of the premium dollar going to inspection services varies considerably over different lines of

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<sup>6</sup>A more natural framework for analyzing self-insurance is given below. The risk aversion argument can be salvaged by arguing that the firm would want to purchase insurance but for the usual panoply of insurance problems -- adverse selection, moral hazard, erroneous classifications, etc.. That is, the firm would buy actuarially fair insurance, but not the insurance actually offered to it.

<sup>7</sup>Interestingly, shortly after the conference while touring the London Museum, I happened upon an exhibit concerning the development of fire insurance following the great fire of 1666. The insurers all had their own fire companies and, in effect, provided protection services to their customers, bearing the costs when the protection failed.

insurance. For some it is undeniably important, with over twenty percent of the premium for some lines of insurance (steam boiler and elevator insurance, for example) going to inspection services.<sup>8</sup>

The existence of self-insurance can be treated more naturally when the problem is viewed in this light. Instead of focusing on the relative risk aversion of organizations, the focus is on whether a firm should perform its risk management activities internally, or whether it should purchase some, or all, of them from an external provider. This is a standard make-versus-buy question that would confront the corporation regardless of whether it was risk averse, risk neutral, risk loving, or had some even more complicated preferences regarding risk.

What is the effect of insurance on a corporation's accident costs? A risk-aversion framework suggests that costs will remain the same (the risks are exogenous) or increase (moral hazard results in less accident avoidance by the corporations). My framework suggests that insurance could easily result in a decrease in accident costs if the external provider of risk management services is a more efficient provider than the self-insuring corporation. Thus, if public policy resulted in an increase in the costs of commercial insurance relative to self-insurance, my framework would suggest that it is plausible that accident costs would rise -- a result that could not be derived from the risk-aversion approach.

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<sup>8</sup>See GOLDBERG [1980 ,p. 72-73].

Let me suggest another puzzle regarding insurance. When one buys a house (at least in the United States) one typically buys title insurance and property insurance. This seems consistent with risk aversion since the house is typically a very large element in the buyer's portfolio. The puzzle involves the fact that the lender usually conditions the loan upon the buyer's purchase of the insurance. This seems peculiar if risk aversion is the driving force. Is the bank more risk averse than the buyer? That can't be right. Is the bank just doing the buyer a favor, reminding him of something he would have done anyway had he bothered to think about it? I doubt that many economists would find great comfort pursuing that line of explanation. If we ask instead why a risk-neutral bank would require title and property insurance, then we can get some insights. The title insurance question is relatively easy. The probability of an "accident" (faulty title) depends upon the level of care in conducting the title search. The bank, in effect, hires a specialist to research the title. The search contract provides that, in the event that the searcher erred, it will compensate the bank for losses arising from the error. My impression is that only a very small percentage of the premium for title insurance is paid out to those with a flawed title. The vast bulk of the revenues cover the provision of the loss-reducing service.

I am somewhat less confident about the bank's interest in property insurance, but I can suggest a plausible line of inquiry. The bank is exposed to moral hazard on the part of the borrower. The bank bears the bulk of the losses from the destruction of an uninsured borrower's house

and has no effective control over what the user does with the house. Moreover, it would be extremely difficult for the bank to set (and readjust) a price for bearing the exposure to these losses over time. An independent firm, the insurance company, that has a mechanism in place for pricing the exposure and has some tools for inducing the home owner/borrower to take greater care (for example, a reduced premium if the owner installs smoke alarms) can, plausibly, perform this task more efficiently than can the lender. I don't claim that this is a fully satisfactory resolution of the problem.<sup>9</sup> My point is a more modest one. The existence of the problem itself is obscured when we observe the world through risk-aversion tinted glasses.

One of the issues that stimulated the discussion of risk aversion at the conference was Professor VARIAN's [1989] analysis of tax farming.<sup>10</sup> He analyzed the problem in terms of a risk-averse government hiring a risk-neutral tax farmer to collect taxes from risk-averse taxpayers. I argued that tax farming was just a special case of a more general problem: the collection of debts. The creditor (whether it is a private firm or the government) has to decide whether particular debts should be collected by employees or by specialist outsiders. Further, it has to decide whether the collector should be compensated with wages, a sharing rule, a fixed fee, or some other compensation scheme. Professor Varian

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<sup>9</sup>Friedman [1973 §9.7] notes that mortgages for commercial landlords often include covenants requiring that the landlord maintain fire insurance and that similar terms are often included in its leases. He suggests that this is "to assure the tenant that the landlord will have funds to pay for restoration."

<sup>10</sup>The analysis was dropped from the final published version.



demonstrated that a particular configuration of risk preferences would result in a specific outcome in which the collector paid a fixed fee to the creditor (the state) for the privilege of collecting the debt (taxes). My primary complaint was that the invocation of attitudes toward risk hides everything of interest. Why, for example, would a firm sell outright some subset of its accounts receivable and not others? Is it risk averse over some of its business activities, but not others? Is that even a coherent question? Once again, it strikes me as much more instructive to suppress risk attitudes and to focus instead on the other determinants of whether the collection should be vertically integrated and the manner in which the collectors are compensated.

Following the conference Professor Varian and I had an illuminating discussion of a specific problem. Large automobile manufacturers like General Motors commonly enter into supply contracts with parts suppliers in which the supplier bears all the risks of demand fluctuations. Some non-economists argue that this is an instance of a large firm using its power to shift costs to a smaller firm. There are two problems with this argument. First, if the large firm does indeed have power vis a vis the smaller firm, there is no a priori reason that the power should be exercised in this dimension. It could, for example, simply force the supplier to sell at a lower price. Thus, to complete the argument it is necessary to show that exercising the power in this particular way results in greater profits than had it been exercised otherwise. Second, if all that is involved is the shifting of an exogenous risk, why would rational parties choose to shift the risk from a large firm to a small

firm? If firms are characterized by risk attitudes, it would seem extraordinarily odd to find that huge General Motors is more risk averse than its much smaller suppliers. It makes no sense for General Motors to pay someone to bear the risks when it could do so at a lower cost. A theory driven by risk aversion should predict that General Motors would bear the losses.

Why then does the contract shift the risks from General Motors to its suppliers? It is easiest to attack this problem by first assuming a risk-neutral automobile manufacturer, vertically integrated into supplying a particular part. It faces an inventory problem. How much capacity for part production should it maintain to meet the expected demand? Determination of the optimal inventory is a fairly routine business decision for the integrated firm. Its decision depends on the relative costs of error and the loss function is asymmetric. Other things equal, the inventory should be greater the greater the costs of having an inadequate stock on hand and the lower the costs of maintaining an inventory that was too large. Since the entire production line might have to be shut down if there is a shortfall of a particular part, the costs of the inventory being too low can be considerable.

If the part is to be provided by an independent firm, the parties face the same inventory problem and they face the additional problem of coordinating their decisions across organizational boundaries. A plausible way to achieve this coordination would be for General Motors to compensate (directly or indirectly) the supplier for holding a large

inventory of parts or productive capacity while keeping the quantity decision in General Motors' hands. That, in effect, is what the supply contracts provide for.

Professor Varian's response to this argument was to accept it and to argue that General Motors' vulnerability to having an inadequate inventory of parts could be characterized as General Motors being more risk averse than its supplier in this context. Risk aversion, in this interpretation, is not a matter of attitudes toward risk. It is a description of the curvature of a utility function. The mathematics does not depend on the label and, since risk aversion gives rise to a particular functional form, the convention seems to be that whenever the functional form is observed or assumed we simply label it as characterizing a risk-averse individual or organization. In a letter following the conference, Professor Varian made essentially that point: "risk aversion can ... be thought of as a reduced form of a more detailed model."<sup>11</sup>

It might well be, therefore, that our quarrel is merely semantic. I suspect not. With this interpretation, all the intuitive appeals to risk aversion vanish. There is no reason to believe that the relevant functions are linked in any way with the underlying preferences toward risk. People who really are risk averse can act as if they are risk

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<sup>11</sup>In the context of his tax farming example, he noted that "the rulers may have a very high preference for cash in certain states of nature in order to pay their army, or to satisfy other sorts of contractual obligations." Personal letter dated June 7, 1989.

neutral in some contexts and risk loving in others. Underlying risk preferences can be overwhelmed by context.

And that is my point. The focus ought to be on the context -- the sort of problems featured in the new institutional economics. The underlying risk preferences should simply be ignored so that we may highlight what I believe to be the more significant determinants of institutional structure. This conclusion is not a logical inevitability. It reflects the experience of those of us out there in the trenches who have found risk preferences generally unhelpful in our efforts.

The initial motivation for this conference was to bring together two groups studying economic institutions in quite different ways -- the formal theorists on the one hand and a looser group of informal theorists and empiricists on the other. I recognize that the formal theorist's research agenda is driven in large part by an internal aesthetic that need have little contact with the "real world." Nonetheless, I do believe that explaining the stylized facts is a significant piece of that agenda. It certainly was at the core of Professor Varian's conference paper. My hope is that our efforts can provide the theorist with a better set of stylized facts and a strategy for coping with them (one piece of which is the notion that risk attitudes should be invoked only as a last resort). I don't know whether the altered research agenda envisioned can meet the aesthetic standards of the current one. I hope it can, because we can use all the help we can get.

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