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An Experimental Investigation of Liability Rules and Damage Measures: Discussion

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King and Schwartz investigate the social welfare implications of four different legal regimes created by combining two levels of liability (negligent and strict) with two methods of damage determination (reimbursing out-of-pocket costs and fixed amount of insurance). Efficiency of the negligent/out-of-pocket combination is low, and even lower for negligent/fixed amount combination. When the reimbursed damages are fixed in advance, instead of being out-of-pocket, efficiency rises. The reason is the out-of-pocket reimbursement regime removes all risk from the investors, inducing them to invest too much.

Laboratory experiments use human beings as a modeling medium, just as analytical models use mathematical symbols. Each modeling medium has its own strengths and weaknesses, each yields a perspective which is not achievable by other means. Best results are obtained by using multiple methods to study the same phenomena. That is what the authors do in this paper.

In the social sciences, laboratory experiments are conducted by psychologists as well as economists. Cognitive psychology experiments have revealed that human beings do not carry perfect, error free, calculators in their heads. When acting in an intuitive mode, it is not even clear that they make calculations. Rather they seem to use other methods. These methods, depending on the individual and experience, can be incredibly effective (e.g., Hank Aaron at the plate) or quite poor (a college student asked to revise the odds in a football pool). Consequently, many psychology experiments are designed to identify the heuristics individuals use, how well these heuristics perform, and what factors may help improve their performance.

When results are joint outcomes of independent actions of more that one person, choosing the best course of action for an individual becomes complicated because the best course of action depends on one's conjectures or beliefs about what others might do. We do not understand very well how people form beliefs about the behavior of others. Conjectures about the behavior of others lie at the heart of a great deal of economic theorizing. Yet, we have no theoretical way of forming conjectures about such behavior. The ad hoc assumptions such as those underlying the Nash equilibrium do not address the problem, and have proved to be ineffectual in organizing data. Consequently, some economists have turned to the empirical method of direct observation of behavior in circumstances in which the predictions of Nash or other equilibrium concepts do or do not organize the data well.

King and Schwartz' attempt to understand the economics of auditing belongs to this class of studies focused on strategic interaction among economic agents. Auditors' effort and shareholders' investment decisions depend on their respective expectations of the behavior of the other party. If we do not know how people form expectations about the behavior of others, we cannot be sure what these economic agents will actually do, even if we assume that they seek to maximize their personal welfare. The value of such laboratory experiments arises from this uncertainty.

The Schwartz' model is an example of a game in which the unique Nash equilibrium is not Pareto efficient. In such games, there is always a possibility that the participants may see beyond their narrow personal interest, and arrive at a Pareto superior outcome through foresight.[1] The experiment suggests, however, that this does not happen in this case. It rarely does. In virtually all experimental games with unique stable Nash equilibrium, experimental outcomes conform to the Nash prediction. The results of the paper are reassuring, though this assurance has been achieved before, and is, therefore, unsurprising.

Our models have to simplify reality to help us understand it better. Accordingly, King and Schwartz, like many others, use a single-period model to investigate the consequences of legal regimes. To what extent single-period theorizing and lab experiments capture various aspects of the investment and auditing phenomena is an open question. Since reputation plays an important role in audit markets, it would be interesting to learn the consequences of various liability regimes in a world in which the actors have to repeatedly deal with each other.

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[1] See Marimon and Sunder (1993) for another example of such economic scenarios.

Model prediction and experimental results that show the out-of-pocket costs reimbursement regime to be inefficient may come as a surprise to some. Our sense of justice suggests that it is only fair that an aggrieved party, on whom unwarranted damage has been inflicted, by breach of contract or by intentional or unintentional negligence of another party, should be made whole. King and Schwartz call this the out-of-pocket damage award. As Gode (1994) showed in his thesis a few years ago, laws of economics make the actions driven by this natural intuition redundant in commercial transactions which include an element of insurance.

Gode's point can be seen easily by looking at an insurance transaction. Suppose the state of Illinois passed a law that requires insurance companies to pay the current replacement value of the property damaged by fire, instead of its historical cost. Will such a law hurt the shareholders of the insurance companies?

If everything else remains the same, yes, the new law would hurt the insurance companies. But everything else is unlikely to remain the same. Insurance firms will expect to pay higher claims under the new legal regime, and will, therefore, demand higher premiums for writing the insurance policies to cover their extra exposure to risk. Homeowners will pay more, and the insurance companies will reimburse more in the form of claims. If the market for insurance were sufficiently competitive, this change in legal regime will cause the insurance contracts to be rewritten, and premia to be renegotiated, until insurance companies will actually make more money because the insurance premia exceed the actuarial expected value of claims to cover the transaction costs. Under competitive conditions, insurance firms will be neutral to such a change in legal regime; under imperfect competition, we should expect them to lobby for laws that force people to buy more insurance.

Audit firms also can be seen as providers of insurance. In addition to providing a verification service to various contracting parties in the firm, they insure their work. In case of audit failure, audit firms stand liable to the shareholders and other interested parties. The question that has occupied a great deal of time in the recent years is: what should be the extent of damage for which the auditors are liable? Will the passage of this law make the shareholders of insurance companies better off? Insurance companies will simply raise their premia to cover the higher exposure to risk. If the market for insurance were competitive, and if the transaction costs were sufficiently small, this change in law would have no effect on the value of insurance company shares. Any prespecified amount of damages will fully compensate the injured parties. Compensation does not need to be equal to the out-of-pocket costs of injury to be fair ex ante.

The authors point out in the paper that the traditional approach in audit models has been to evaluate social welfare in terms of the effort the auditor is induced to exert under alternative regimes. When this perspective is expanded to include the welfare of the shareholders, the ranking of alternative regimes changes. Following Gode in the preceding paragraphs, this argument can be taken further. The model, as well as the experiment, exclude the market for audit services from their scope. The price of audit services is implicitly fixed by defining the payoff in terms of the costs of auditing and any damages. If we consider the changes in the price investors will be willing to pay for the audit/insurance services under alternative regimes, conclusions in the paper about the social welfare consequences of alternative regimes may change again.

I have only a few comments about the modeling, experimental design and presentation of data. The chronological relationship between investment and auditing presents a chicken-and-egg problem. In her analytical model, Schwartz deals with the problem by focusing on the Nash equilibrium of simultaneous play game. However, in laboratory modeling of the situation, the audit effort decision is made before the investment decision. It is neither necessary nor desirable for the lab model to mimic the relevant analytical models in all details. However, in this instance, the value of sequential modeling in the lab for the purpose of understanding the audit market is unclear to me. In the experimental design it is not clear what is gained by using two different values of lambda, the probability of loss parameter. Might it not have been better to choose one value of lambda, and repeat the experimental session to gain more confidence in the results. In presentation, I would have liked to see a graphical presentation that gives the reader a dynamic picture of the sequence of decisions made by pairs of players in the lab game, in addition to the summary data.

Perhaps it is not inappropriate for me to take a broad view of the development of audit practice and markets in U. S. over this century. When U. S. security laws were enacted in 1932-33, the audit was essentially confined to the books of account. The notorious fraud of McKesson and Robbins, whose chief executive was a convicted felon working under an alias, stimulated an expansion of U. S. audits from books to the field. Internal consistency of the books of account was no longer sufficient; auditors also had to verify that the books of account had some conformity with the physical reality in the factory, warehouses, and promises made by the debtors of the firm. In the late forties, the AICPA created the Committee on Auditing Procedure to try to codify the generally accepted auditing standards that could serve as the point of reference for auditors' work.

In the early fifties, four pioneers from practice and academia (William Cooper, Richard Cyert, Justin Davidson and Robert Trueblood) teamed up to propose and

develop the application of statistics and management science to auditing, thereby increasing the efficiency of sampling in auditing. As is often true in management innovation, it took a quarter of a century for their ideas to become fully developed by many others, and find widespread applications in audit practice. By the late fifties, digital computers began to filter into business.

In the sixties, some important court judgments put the auditing profession on notice about their legal liability to third parties. These judgments caused the AICPA to undertake a speedy development of Generally Accepted Auditing Standards, and push for creation of the Financial Accounting Standards Board as a defensive mechanism. In the seventies, the Foreign Corrupt Practices Act helped expand the scope of audit services to internal controls. The Federal Trade Commission and the U. S. Department of Justice pushed the AICPA into relaxing provisions of the Code of Ethics to encourage more competition in the profession. The profession struggled with the problems of disciplining its members, and delimiting its liability for the detection of fraud without making its product worthless to its customers.

In the eighties, poorly conceived regulatory legislation caused the savings and loan industry to collapse, dumping many lawsuits at auditors' doorsteps. In the meantime, computers were being integrated into core functions of corporations and the economy, causing the work, personnel and information to be rearranged. Auditing firms saw new opportunities in this restructured economy and began to rethink the nature and scope of their services.

As auditors contemplate the future in the mid-nineties, we must not forgo the opportunity to fundamentally rethink information services in the economy. For example, could audit and insurance functions be combined? Auditors could simply sell liability coverage for a negotiated set of contingencies and amounts of reimbursements. Could accounting services be economically combined with audit services so accounting is done by client firms on hardware and software controlled by the auditors? Auditors' computers could monitor the data being entered into their system in real time, and alert them to any out-of-ordinary events. What kinds of changes in law would be needed to restructure the information market? These are the kinds of questions typically asked by engineers, not social scientists. Perhaps it is time for accounting researchers to shift some of our attention from social science to engineering, and to the future.

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