Readings

Unregulated Social Science

Regulatory Policy and the Social Sciences, edited by Roger Noll (University of California Press, Berkeley, 1986), 400 pp.

Reviewed by Arthur T. Denzau

If nothing else, this conference volume answers one question: What happens when you let a group of social scientists loose in an economics forum on regulation? The answer is unregulated chaos. The essays in this volume, enlisted from sociologists, anthropologists, psychologists, political scientists, lawyers, and economists, range from bewildering to stimulating.

At the eye of the storm is Stanford University economist Roger Noll who started with the promising idea that the economic study of regulation is too narrowly focused and new insights might be gained by bringing a disparate group of social scientists together to discuss regulation. Economic studies generally identify the effects of regulation but cannot readily explain the origins of regulation or how a particular regulatory form is chosen. As one might expect, Noll only partly realizes his goal. His charges too often went in their own directions and tended to ignore their audience.

The editor commences the volume with a multidisciplinary survey. He defines regulation for the purposes of the volume and presents a typology of regulatory theories. Theories are classified as organic or structural. Organic theories of a regulatory agency work like the neoclassical theory of the firm, treating the agency as a black box having a goal function to maximize. The internal workings of the agency and the origin of the goal are ignored. Noll considers three specific types of organic theories of regulatory bureaus, then suggests his own favorite—external signals. Each agency tries to further the public interest, but uses the reactions of external actors to help determine what the public interest is in the "theaters of external judgment." Signals emit from the courts, elected politicians, the media, and the general public.

Noll then turns to structural theories, asking the questions of what determines a regulatory agency's structure and how this structure affects outcomes. Sociology has focused on these questions, but Noll suggests that some of this work needs redirection. As in many areas of study, more and better empirical work is needed, not new theories.

Many of the papers that follow conflict with the editor's goal. For example, the first three general essays do not even provide a "vision" from their discipline's perspective. The outsider cannot determine the general approach of the discipline or how to apply it to specific research questions. This is particularly true of the political science essay by Theodore Lowi and the anthropological essay by Laura and Claire Nader.

The theory presented in the Lowi essay is apparently a standard one of the author's: Policies determine politics. Political science should focus its efforts on the effect of governmental action on the political system itself. Rational choice political science reasons exactly the opposite way, asking: How does the political system determine government actions? Although 44 pages in length, Lowi's essay fails to explain what his approach means or can do. Unfortunately, the comments by John Ferejohn, an expositor of rational choice political science, are directed exclusively to political scientists—who presumably accept Lowi's approach—instead of the book's intended audience.

The Naders' anthropological essay is similar. Much of it is devoted to trying to define regulation in a "wider social context." This turns out to mean that almost anything that business does is regulation. For an economist, this chapter offers

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little. Statements are made that appear to deny any scientific analysis at all. For example, the authors question the large number of additives in food today, saying "the use of these materials is no more rational than other aspects of modern life." Their parting remarks provide the flavor of their approach; they call for "a research agenda that examines regulation in the United States in the context of power and responsibility over time and space and through the inclusion of a number of variables."

In between the Lowi and Nader essays is one by Lawrence Friedman on regulation and the legal process. Unlike the others, this embodies an approach to regulation that is defined sufficiently to be understood and debated. Implicitly,

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Friedman identifies regulation with the field of administrative law—regulation is what regulatory agencies do. He highlights the importance of "social forces" in determining laws and regulations and suggests how public opinion can be awakened. A short case study of workmen's compensation illustrates the importance of "background, history, and context." While one may disagree with some of what Friedman has to say, his work is comprehensible and stimulating.

The next two essays, focused studies of the politics of regulation, are among the best. In one, Morris Fiorina asserts that political science ignores its comparative advantage, which is the study of how the larger political system exerts systematic influence on regulation. He shows how a rational choice theory can be used to deal with the question of legislative delegation—what are its effects and what are the political incentives to delegate?

The other, prepared by Martha Derthick and Paul Quirk, analyzes deregulation in a case study of the Civil Aeronautics Board, the Interstate Commerce Commission, and the Federal Communications Commission during the period from 1975 to 1980. Each of these agencies initiated deregulation without new legislation, retreating from the entry and price regulation they had long administered. Consistent with Noll's theaters of external judgment, the roles of congressional committees, courts, the president and the media are all considered. The import of the structural organization of the agencies is also analyzed. The major focus of this study, however, is internal, with special attention being given to the agency chairmen. Unfortunately, it is difficult to see how to generalize the conclusions of this study to other agencies.

The comments on these two essays are masterful. William Riker (who comments on Fiorina's essay) suggests that the capture theory of George Stigler and Gabriel Kolko is an embryonic political theory. In the interaction between the agora and the acropolis, the capture theory views the agora as being the active agent. Riker makes a convincing argument for viewing the acropolis as the active agent, suggesting that an important issue to explore is the incentive for politicians to regulate. In two pages, Riker is able to present the role of political science in analyzing regulation. Commenting on this work as well as the two political science essays, Kenneth Shepsle asks what determines regulatory policy and shows how each paper provides a different type of answer. Lowi argues for studying policy characteristics, Fiorina for looking at constituency incidence, and Derthick and Quirk for considering particular agents in Congress.

The next three essays are billed as case studies of different types of social science methods. These are more effective in introducing a new discipline than the earlier general essays. Three psychologists, Paul Slovic, Baruch Fischhoff, and Sarah Lichenstein, argue that "riskiness means more to people than expected number of fatalities," when asked to rank the risks in various accidents. The essay helps in thinking about how people react to nuclear power plants and accidents. One problem with the study is that it relies largely on survey data. As the commentator notes, real choices cause people to behave differently than when they answer surveys. The questions raised, however, are useful and suggest important additions to risk evaluation in regulatory situations.

Theodore Caplow, a sociologist, reports the results of six studies of conflicting regulations. The studies themselves are interesting, but the theory is weak. Caplow looks at triads of regulatory actors as the fundamental groupings and distinguishes horizontal from vertical relationships. Although the author states some "general principles," their origin and status are unknown.

The last case study is by Mitchel Abolafia, based on his dissertation on self-regulation by securities exchanges such as the Chicago Board of Trade. Abolafia argues that such regulation plays an important role in some markets by reducing uncertainty (often through standardized contracts, for example). Three episodes are analyzed to illustrate the use of containment, formal restraint, and cessation of trading as alternative tactics in maintaining markets. The work raises many questions. The commentator asks, for example, why are exchanges owned by traders as opposed to being ordinary firms?

I recommend selective reading of this book. The final case study and the psychological risk study are major areas of work of which I was unaware. The political science articles and accompanying comments provide a view of a growing literature on congressional politics, much of which applies directly to relations with regulatory bureaus. Unfortunately, the various studies compiled in this volume are not uniformly stimulating.

Pondering Pensions

Pensions, Economics, and Public Policy, by Richard A. Ippolito (Dow Jones-Irwin Press, 1986), 267 pp.

Reviewed by B. Douglas Bernheim

Pensions, Economics, and Public Policy describes the results of an ambitious research program spanning a wide range of topics in pension economics. Written by Dr. Richard Ippolito, chief economist at the Pension Benefit Guaranty Corp., the book provides a coherent and interesting view of the U.S. pension system based upon two unifying themes: First, the U.S. tax system creates enormous incentives for the establishment of private pension plans; second, existing plans tend to be significantly underfunded relative to true economic liabilities.

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Ippolito opens Part I of his book with a discussion of the tax treatment of pensions. He argues that pension programs are favored because the personal income tax is progressive and pension contributions are, for tax purposes, not treated as personal income and are deductible from corporate income. As a result, resources for retirement can be accumulated in such a way as to smooth marginal tax rates over time, thereby reducing total tax liability. Also, like Individual Retirement Accounts (IRAs), pension funds allow investors to defer taxation on capital income until benefits are paid out.

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The tax advantages of private pensions are indeed large, but it is important not to overstate these advantages. Certainly workers would save for retirement even in the absence of pension plans. To the extent pensions merely displace other forms of saving, they do not alter marginal tax rates at retirement. Also, there are financial vehicles other than pensions for accumulating capital income tax free (e.g., owner-occupied housing, non-dividend paying stocks, municipal bonds, long-term discount bonds). There is little doubt, however, that federal tax policy confers a significant advantage to pension plans relative to alternative vehicles.

In the remainder of Part I, Ippolito discusses the proper notion of pension fund liabilities, and calculates associated funding ratios (i.e., ratios of assets to liabilities). He properly distinguishes between legal liabilities—workers' claims on the firm contingent upon immediate shutdown—and true economic liabilities—workers' implicit claims arising from long-term employment relationships. He then presents evidence to support the view that true economic liabilities reflect implicit arrangements in which it is generally assumed that workers will remain with their firms

until retirement. Using this notion, he recalculates funding ratios for samples of firms in 1978 and 1981, and finds that reported actuarial funding ratios generally overstate true funding ratios by 20 percent to 30 percent. Aggregate data for the period from 1950 through 1981 corroborate this conclusion, and suggest that target funding ratios are approximately 70 percent. In other words, despite the tax advantages, firms are choosing not to fund fully their pension plans. (A fully funded pension plan has a funding ratio of 100 percent, meaning that assets are equal to liabilities.)

Since the conclusions of these chapters are central to the remainder of the book, the supporting evidence and analysis warrant special attention. First, evidence used to support the notion of implicit liabilities is based upon examination of cash wage profiles and stock market valuation of unfunded liabilities. Data about productivity profiles would be needed to draw inferences about implicit pension savings from cash wage profiles, but unfortunately this is not available. Close inspection of the stock market valuation equations reveals that one cannot reject the hypothesis that legal liabilities correspond to true economic liabilities with a reasonable degree of statistical confidence. Second, the calculations of true liabilities appear to be based on very low interest rates. Third, the analysis of aggregate data is predicated on the assumption that a liability relationship estimated with data from 1978 and 1981 was structurally stable over the period 1950 to 1981; this may not be a plausible assumption.

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I would note that a reevaluation of the evidence in light of developments since 1981 could be very informative. Figures compiled by the Financial Accounting Standards Board reveal a dramatic trend: in 1980, 58 percent of firms were fully funded by their own calculations; this figure rose to 69 percent in 1981, 78 percent in 1982, and 88 percent in 1983. Furthermore, in 1983, 55 percent of firms were 30 percent overfunded. Assuming, as Ippolito does, that reported ratios overstate true ratios by 20 percent to 30 percent, this would suggest that more than half of all plans are now overfunded. The contention that most plans are significantly underfunded may no longer be valid.

Part II of the book examines and forecasts the growth of pension assets and liabilities. The analysis here is closely tied to the notion of liabilities developed in Part I. Special attention is given to the growth of defined-contribution plans. Under a defined-contribution plan, the employee receives a pension based on contributions. A portion of wages (or profits) is deposited in an account which, after a vesting period, belongs to the employee. This contrasts with a defined-benefit plan where the employee receives a benefit based on a formula, usually one which relates pension amount to years of service and final pay. Ippolito argues that defined-contribution plans are mostly supplementary to primary defined-benefit plans, and are not likely to replace such plans on a large scale.

I have some reservations about this conclusion. The author uses cross-section data on existing plans to infer the extent to which secondary defined-contribution plans displace primary defined-benefit plans. Controlling for all relevant firm-specific factors is a difficult task, however, and may not have been accomplished fully here. He also argues that defined-benefit plans are preferred because they provide benefits in the form of annuities and, by tying benefits to terminal wage, expose the worker to less risk. But one could certainly create a defined-contribution plan which locked individuals into annuities; the fact that this is rarely done presumably suggests that the latent demand for annuities is low. Also, it is unlikely that the terminal wage of any given individual is less risky than either the market portfolio or high grade bonds, especially since employment may terminate early for unforeseen reasons.

Part III focuses on the economic implications of pension growth. Ippolito discusses the effect of pensions on job tenure, retirement, and the level and composition of national savings. These chapters provide a concise review of research in this area. The chapter on capital markets is concluded with a series of puzzles concerning pension plans. It is argued that these plans tend to be underfunded and to invest heavily in equity as well as to perform poorly relative to other investors.

Part IV is the most interesting and novel portion of the book. Ippolito argues that

underfunding of pension plans effectively turns workers into bondholders, thereby giving them a stake in the continued viability of the firm. This may be particularly important for firms which deal with strong unions. He tests various implications of this theory, and consistently finds strong support. While one might object to some aspects of the analysis, even a skeptic is inevitably struck by the weight of the evidence. The author does a creditable job of raising and dispatching potential objections to his theory. I would raise just one question. According to the author's estimates, pension plans are underfunded by approximately $250 billion. Even if the tax advantages of pensions are only in the neighborhood of 20 percent, the net cost of underfunding is around $50 billion. One must certainly wonder whether the benefits to bonding a union labor force are in the same ballpark.

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Part V, which discusses policy prescriptions, will undoubtedly be the most controversial portion of the book. In it the author argues for retaining the favorable tax treatment of private pensions while eliminating many constraints on their operation; taxing social security benefits like pension benefits; eliminating limits on Individual Retirement Accounts; modifying incentives for retirement through pensions and Social Security; and privatizing federal pension insurance. His arguments are generally sound, but the number of issues raised is quite limited. (The argument for altering the tax treatment of Social Security, for example, does not acknowledge that the link between contributions and benefits under Social Security, unlike with private pensions, is rather weak.) One could easily devote a book to each of the relevant policy questions.

In summary, Ippolito has made an important and provocative contribution to the field of pension economics. His analysis merits careful consideration.

Mongrel Law

Environmental Law and American Business: Dilemmas of Compliance, by Joseph F. DiMento (Plenum, 1986), 228 pp.

Reviewed by Eugene Bardach

Environmental regulation is a hybrid. It is a little like health and safety regulation, where inspectors trudge out in search of peanut butter with rat hairs and drill presses without finger guards. It is a little like economic regulation, where office-bound technocrats sift through statistics on cost and outputs and decide who will provide how much service to whom and at what price. Environmental regulators write standards, dispatch inspectors, and threaten fines. They also process cost and output data from affected firms and decide who has to clean up what, how much, and how fast.

"Hybrid" is perhaps not as good a characterization as "mongrel," since the mix of social and economic regulation contained in environmental regulation is the result of accidental promiscuity rather than careful breeding. Environmental regulation has the defects of both. From social regulation it derives the impulse to threaten, blame, and punish; from economic regulation, the impulse to pretend to bureaucratic rationality concerning the optimal level and allocation of resources. But the environmental regulator has no way of knowing how much pollution abatement people really want, and is almost certain to allocate abatement responsibilities inefficiently; many firms will be asked to spend a great deal to abate pollutants that cause little or no harm while others will continue to cause great harm even though they could avoid doing so at little cost.

As a result, environmental regulation bears a political stigma both in the community of regulated firms and among the public at large. The regulated community responds with avoidance and evasion. The public at large responds with anger and frustration, demanding more aggressive inspections and sanctions against the malefactors. Yet the social regulatory approach of detection and punishment is expensive and slow. Its results are often poor. Public anger and frus-

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"Slaying the dragons is the easy part—the part I hate is filling out the environmental-impact statements!"

tration further escalates. Environmental enforcement agencies respond with ill-conceived crackdowns on targets of legal opportunity and political popularity, dispensing with the attempt or even pretense of rational policy, not to mention the requirements of equity and fairness.

It is against this background that one can appreciate what Professor Joseph F. DiMento, of the University of California at Irvine, calls the "dilemmas of compliance." To his credit, DiMento recognizes the pervasive irrationality in environmental regulation, and describes at some length the resistance to compliance that it engenders in various firms. He quotes, for instance, an auto company executive who evidently lobbied Congress over the Clean Air Act:

> And you'll never tell me . . . this process of running around the hall in and out of a conference committee at 11 o'clock at night deciding whether it should be 0.41 or this or that or the other thing is a rational process. The people bartering on what the emission levels should be on automobiles wouldn't know a hydrocarbon if they tripped over it . . . .But there they are: 'I'll give you this, if you give me that.' It's almost like you're out in Nevada.

Another auto executive complains that "the automobile has been squeezed almost to the breaking point." The auto industry, he said, was being squeezed "down to the very last drop of blood" even though equivalent pollution abatement could have been done more cheaply "by controlling electrical generating plants which also release the same substances."

Unfortunately, DiMento seems not to understand *why* a great deal of environmental regulation is irrational, or to appreciate just how deep the problem runs. If he did, he could not have written so superficially about what he calls "incentive-based approaches" to inducing compliance with environmental laws. He seems to believe that the only difference between economic incentives like effluent fees or marketable permits and "traditional . . . sanctions . . . such as criminal and civil monetary penalties" is that "a legal wrong is not at issue." He misses the point that economic incentives address the allocation problem and not simply the compliance problem. The primary appeal of economic incentive strategies is the potential for minimizing the

huge information problem confronting regulators. Their capacity to make enforcement more rational and fair derives from their capacity to make policy itself more rational and fair. DiMento usefully catalogues the practical and political difficulties of introducing economic incentives on a broad scale, but he might have been more willing to explore ways to overcome these difficulties had he understood how fundamental the allocation problem is to the compliance problem.

DiMento understands that toxic-substances regulation, unlike most other environmental problems, fits reasonably well the classic "command and control" approach of most social regulation and, further, that effective "command and control" depends on a great deal more than simply setting the level of sanctions high enough and deploying enough inspectors to terrorize everyone into compliance. To conceptualize the compliance problem, DiMento proposes "a theoretical framework that calls on systems thinking." He recommends that we focus on: (1) the nature of available enforcement tools; (2) the communication of regulations to regulated parties; (3) the internal bureaucratic structure of enforcement agencies; (4) the political environment of agencies; (5) the internal structure of regulated firms; and (6) the social environment of regulated firms (what he calls "support groups"). He concludes, quite sensibly, that no single enforcement strategy is workable for all situations, though he does tout the general usefulness of clear communication between government and industry about what is required and what the government generally intends to do to enforce its will.

DiMento's review of these topics is useful and often well illustrated by examples. He has drawn on 60 interviews of business people, environmental and policy scientists, and government regulators—a major portion of the data base for the book—along with archival and published materials on 30 noncompliance cases and a mail questionnaire survey of 44 enforcement officers in state and federal environmental agencies. The sequential exploration of topics, however, does not add up to a theoretical framework, nor does the invocation of the phrase "systems thinking" fill in the missing pieces. What is needed is an analogue to the economist's theory of externalities due to market failure applied to the sphere of hazardous materials. There are economists, of course, who will say that market failure applies directly. But market failure no more explains why people dispose of hazardous wastes by midnight dumping than does an invocation of many other plausible failures, for instance, "altruism failure," "police failure," or "chemical engineering failure." It is true there would be no hazardous materials problems if none of these failures had occurred. But a list of sufficient causes is not the same thing as a strategy for identifying practical means of solving a problem. Nor is it sufficient to intone the phrase "systems thinking" if the implication is simply to make a list of all the causal conditions that are in some way related to the problem.

My own view of the matter is that regulation in the toxic wastes area (as in most areas of "social regulation") is best construed as a substitute for an imperfect liability system with costly litigation. Unfortunately, it is an imperfect substitute at best, for the very conditions that undermine the effectiveness of the liability system also undermine regulatory effectiveness. Scientific knowledge of what is harmful to whom is often quite deficient. Defendants frequently have the legal resources and the will to discourage action against them by both plaintiffs and regulators. Business executives who violate liability standards or regulations frequently conceive of their potential victims as anonymous and hypothetical, and therefore feel that "they are not really doing anything terrible." DiMento discusses most of these conditions as parts of the system of compliance (and noncompliance), and usually with commendable sophistication. Unfortunately, his analysis and prescriptions for reform, lacking a theory that relates these problems to each other, is disjointed and *ad hoc*.

One consequence of failing to appreciate the deep connection between liability failures and regulation is that the author overlooks a reform strategy with great potential: to bolster private liability law by clarifying legal obligations through regulation. Regulators could, for example, prescribe standards of care for dealing with toxic wastes and enforce documentation requirements, leaving the enforcement of these standards to the private liability system.

The shortcomings of DiMento's book are not uncommon in scholarly work on social regulation. It is a subtly complex field of study that defies easy insights or generalizations. Within this marshy field the book must be counted a very useful contribution.