

DRAFT (7.15.11)

Detecting and Measuring Capture

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The plausible breadth of capture notwithstanding, scholars examining regulation and regulatory institutions face substantial difficulties demonstrating the existence and degree of capture. Several generations of research have adduced quantitative or historical evidence that agency decisions or legislative outcomes have been partially associated or correlated with the wishes of the regulated industry.² Yet few of these analyses have been able to demonstrate that the associations/correlations in question represent capture rather than other patterns – representation, differential (and rational) weighting of other features of firms and industries, the possible coincidence of public interest and industry interest in some dimensions of regulatory policy, or something else.

In short, the evidentiary standards of the capture literature are rather low, and the first aim of this essay will be to demonstrate this point and to suggest that more circumspection is in order. A second aim of the essay will be to examine possible inferential strategies, all of them involving observational research using both quantitative and qualitative data, with which qualified claims of capture might be made. A third aim is to encourage scholars to point more concretely to different mechanisms by which capture might operate. I elaborate these aims after a brief conceptual discussion of capture.

I – Understandings of Capture

Let me begin with the observation that regulation scholars might learn something from recent advances in the study of “conflict of interest.” In new writing and an intellectual initiative aimed at understanding “institutional corruption,” Harvard scholar Lawrence Lessig has argued that institutional corruption is different from the kind of public corruption for which individuals and organizations are often found criminally liable. There may be nothing illegal – and for a long time, there has been nothing illegal – about the pattern of physicians prescribing a newer, more expensive drug to their patients (rather than an older and cheaper one with hypothetically equivalent quality) in part because they receive junkets and gifts from the company making the newer product. What is bothersome here is rather the way in which the “economy of influence” distorts the incentives or motivation of the physician to prescribe

² The literature here is large and well known, ranging from Samuel Huntington’s “The Marasmus of the ICC” and Marver Bernstein’s *Regulating Business by Independent Commission*, through Stigler’s “The Theory of Economic Regulation” (much of which was taken up with empirical demonstrations) and Posner’s “Theories of Economic Regulation,” to a series of modern-day studies.

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according to the best interest of the patient, rather than according to an alternative set of interests in which the gifts themselves figure into that interest.³

I take this starting point to say that *empirical studies of capture must have some notion of the public interest in mind as a counterfactual*. For one, some version of the public interest stands often as a compelling alternative explanation to capture for patterns observed in regulation and regulatory decision making. For another, it is only with reference to one or more measurable understandings of public interest that we can say, after empirical study that capture has occurred in that one set of interests has been served instead of another set, with the counterfactual set of interest served being the public interest.

An empirical finding of capture requires the satisfaction of a **conjunction** of a set of claims. Each claim is individually necessary, and the claims are jointly sufficient. I begin with the case of a regulation that is captured before an administrator ever acts, the case of legislative or “statutory” capture.

³ As Lessig describes the term in a *Boston Review* article, “Institutional corruption does not refer to the knowing violation of any law or ethical rule. This is not the problem of Rod Blagojevich, or, more generally, of bad souls acting badly. *It instead describes an influence, financial or otherwise, within an economy of influence, that weakens the effectiveness of an institution, especially by weakening public trust in that institution.* (An “economy of influence” rather than the simpler “system of influence” to emphasize the reciprocal character of such influence, often requiring little or no direct coordination.)” **“Democracy After Citizens’ United,” Boston Review*, September/October 2010, <http://bostonreview.net/BR35.5/lessig.php> (accessed November 11, 2010; I have added italics to the quotation)+. Lessig’s definition is of course differentiated from capture, but it is informative in the following way, namely that corruption in this sense can occur without “direct coordination,” and that a critical result of corruption is reduced public trust in the institution itself.

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A. The case of statutory capture

A1. There exists an identifiable “general interest” or “public interest,” or goal for which a regulation could, in theory, be created. Call this the people’s welfare *W+.

A2. There exists an identifiable interest or goal of the “industry” or “producers” in an industrial sector, or within an industry, there exists an interest of dominant or particular firms. Call this the industry interest (I).

A2a. There exists an identifiable “special interest” (S) outside of industry interest, such as the interests of labor unions or environmental groups who, while not the producers in question, value certain goods more highly than do the general public (the public good, in the republican sense, or the median voter in the social choice sense).

A3 [conflict of industry and public interest]: W and I conflict, or W and S conflict, in the minimally sufficient sense that for a set of possible laws created, the public interest or statutory obligations of the agency and the producer/special interest do not coincide.

A4 [capture mechanism]: There exists some mechanism of undue or disproportionate influence or capture (C) whereby the industry wishes to induce the legislature to choose I over W.

A5 [Deterministic capture]: Given capture, the legislature repeatedly chooses I over W, or S over W, and the resulting statute or regulatory regime is enforced or implemented in way that preserves the dominance of I/S over W in the original legislation. Without capture, this pattern would not hold, as the legislature would choose W repeatedly over I or S.

A5 [Probabilistic capture]: A weak probabilistic condition is that the legislature’s choice of I/S comes with higher probability with capture than without. Hence

$$\Pr[L = I \mid C] > \Pr[L = I \mid \sim C] \text{ and/or } \Pr[L = W \mid C] < \Pr[L = W \mid \sim C]$$

It is important to recognize that an agency faithfully implementing a law that satisfied conditions A1 through A5 would be implementing a captured regulation, though doing so in a way that preserved the fidelity of delegation relations. Hence the existence of regulatory capture does not require that there exist a principal-agent problem between the legislature and the regulatory agency.

However, in many cases, scholars and policymakers are interested in a different kind of capture, one where certain goals are expressed in legislation but where the achievement of these goals is distorted, corrupted, watered down or otherwise turn to an industry’s advantage. This is the case of agency capture, which is not exclusive of statutory capture and can co-exist with it.

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B. The case of agency capture

B1. There exists an identifiable “general interest” or “public interest,” or goal for which a regulation was created. Unlike a regime of statutory capture, we assume here that this public interest is embodied in the statute that delegates authority and resources to a regulator, which is charged with administering the regulation. Again, this public interest is embodied in the people’s welfare (W).

B2. There exists an identifiable interest or goal of the “industry” (I) or “producers” in an industrial sector, or within an industry, there exists an interest of dominant or particular firms;

B2a. There exists an identifiable “special interest” (S) outside of industry interest, such as the interests of labor unions or environmental groups who, while not the producers in question, value certain goods more highly than do “the people” writ large.

B3 [conflict of industry and public interest]: W and I conflict, or W and S conflict, in the sense that in applications of regulation or enforcement, the public interest or statutory obligations of the agency and the producer/special interest do not coincide.

B4 [capture mechanism]: There exists some mechanism of undue or disproportionate influence [capture (C)] whereby the industry attempts to induce the regulator to choose I over W.

B5 [deterministic capture]: Given a pattern in which the agency’s statute and case evidence directs it to choose W over either I or S, and given capture (C), the agency nonetheless repeatedly chooses I over W, or S over W. Under the same conditions but in the absence of capture, the agency would choose W repeatedly over I/S. To the extent that the agency’s choice of producer/special interest over public interest is more ingrained or patterned, we say that the agency is more captured.

B5 [probabilistic capture]: A weak probabilistic condition is that the regulator’s choice of I/S comes with higher probability with capture than without. Hence

$$\Pr[R = I \mid C] > \Pr[R = I \mid \sim C] \text{ and/or } \Pr[R = W \mid C] < \Pr[R = W \mid \sim C]$$

There are a range of different empirical and theoretical conditions under which capture of regulation prevail. In political science, economics and law, there are models of implicit bribes or rent-seeking. There are models by which a regulator might be inclined to pursue the public interest but is scared off from doing so by industry threats of political or legal retaliation (see Gordon and Hafer); this is, strictly speaking, something different from an implicit bribe. There are arguments about the cultural or social
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influence of repeated interaction with the regulated industry (as in Johnson and Kwak, *13 Bankers*), such that the regulator begins to think like the regulated and cannot imagine another way of approaching its problems. In the case of cultural or social capture, the legislator or agency may not be fully conscious or aware of the extent to which its behavior has been captured. So what is important about these definitions is that they are not model-dependent or mechanism-dependent. There are, for instance, no preferences stated in the models, though the definitions could easily be stated in terms of preferences as a special case.

II – Problems with Capture Inferences

It is common in the empirical and historical literature on regulation to claim that some degree of ‘capture,’ ‘industry influence,’ or ‘rent-seeking’ operated in regulation because of identified patterns of regulatory decision making. It may be that legislators’ votes are found to be correlated geographically and over time with the presence or strength of measured industry interests (Kalt and Zupan and an ensuing literature). It may be that a positive association is found between a measure of the industry’s interest and regulatory decisions. Several decades of literature have exploited these kinds of partial correlations in an attempt to demonstrate the existence of rent-seeking.

Let us first part ways with the very common pattern of claim-making in policymaking and journalistic circles, but hardly absent from academic studies that **attributes capture to any regulation or regulatory outcome with which the writer does not agree**. This is a common method of argumentation in medical and public health circles, as well as in environmental circles and in certain libertarian circles.⁴ These claims fail, in essence, not merely because of their bias but because they do not distinguish between a plausible and counterfactual pattern of regulation based upon the public interest (W) and that based upon capture.

My concern is with something different, namely the claims made by scholars examining patterns of regulation, who claim from a certain kind of evidence base that a particular regulation or agency exhibits “rent-seeking,” “industry influence” or “capture” features. The empirical problems here are many, and they are almost uniformly ignored by published scholarship in economics, political science, sociology, public policy analysis, public administration and other studies of regulatory agencies. I take three here.

- **Protection without Capture.** If, for instance, we are able to show that a licensing agency acts in such a way that larger companies within an industry get their products licensed more quickly than smaller companies, we have not demonstrated capture per se. Such patterns can be observationally equivalent to a public interest explanation whereby the agency may rationally impose a risk premium upon smaller companies because they tend to be newer or less experienced. In other words, *plausible demonstration of protection does not amount to proof of*

⁴ See for instance the claims made by critics such as Marcia Angell in *The Truth About the Drug Companies*, or by critics of consumer financial regulation who claim that these regimes will inevitably serve the interests of mortgage lenders.

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capture. This “protection without capture” dynamic has been demonstrated formally and empirically for product approval and licensing decisions and is quite plausibly applicable to a range of other forms of entry regulation and quality regulation.⁵

- **Measurement Error and Non-Random Assignment.** If an analyst identifies a plausible and robust partial correlation between a measure of industry influence or interest (I) and regulatory decision making (R), there are all sorts of reasons that the correlation cannot be regarded as causal, and the easiest way to approach this problem is to think of the internal validity questions that one might pose of the claimed correlation.

Take for instance Stigler’s (1974) regressions showing that professional licensing came earlier when (1) the size of the occupation relative to labor force was larger and (2) where urbanization of the occupation was greater. As a number of critics have noted, this statistical exercise was far removed from a demonstration of rent-seeking. If licensing regulation were pursued for quality purposes (screening under asymmetric information for experience goods or credence goods), then one would easily expect that it would be pursued where the welfare effect of the screen was higher (a larger market relative to the state’s economy). It would also be pursued where a larger number or greater share of consumers would be adversely affected by information asymmetries, that is, in cases where the services of the occupation licensed were disproportionately available in larger concentrations of consumers (population). As economic historian Marc Law has shown, it is in urbanizing economies that food quality regulation was enacted, in part because of the separation between the production of food (with concomitant inspection of quality) and the preparation and consumption of meals.⁶

Or take Stigler’s (1974) regressions showing that that trucking weight-limits were positively correlated with trucks per 1000 agricultural labor force, with the idea that “the powerful agricultural interests would insist on this.” Of course, the presence of higher weight limits on roads that already handle more trucks could easily be explained as a form of regulatory rationality – the safety limits might be responsive to experience with trucks on these roads. So too, states with more trucks per agricultural labor force might also house roads on which less passenger traffic per capita prevailed, presenting less of a safety risk for the heavier trucks. So too, if trucking weight limits were higher where average rail freight haul were higher, it might

⁵ For both decision- and game-theoretic models establishing this proposition, respectively, see Carpenter, “Protection without Capture: Product Approval by a Politically Responsive, Learning Regulator,” *American Political Science Review* 2004; Carpenter and Ting, “Regulatory Errors with Endogenous Agendas,” *American Journal of Political Science* 2007. For a non-capture explanation of the pattern whereby earlier entrants to a market receive more favorable licensing treatment than do later entrants, and evidence supporting this proposition in the case of pharmaceuticals, see Carpenter et al, “Early Entrant Protection in Approval Regulation: theory and Evidence from FDA Drug Review,” *Journal of Law, Economics and Organization*, Fall 2010.

⁶ Similar observations have been made with respect to choices about food quality in the modern American obesity epidemic, as changes in technology (like the microwave) have further separated the preparation from the consumption of food.

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prevail not because railroads faced tougher competition on short-haul routes, but because states with a greater proportion of long-haul freight routes were also (rural) states in which there was less traffic congestion.

In these and other cases, then, Stigler's regressions suffered from the non-random assignment of industry interests or special interests (I/S) across states, and the very plausible correlation of these variables with variables representing other factors and quite possibly variables measuring some form of the public welfare itself. It is easy and perhaps unfair to pick on Stigler here, but I do so because his regressions have become something of a commonly accepted method within different branches of economics, political science and law. There have been few improvements on this dimension in the subsequent generation of Stigler-inspired research. *It is difficult to find any study in the political economy of regulation that is fully immune from a critique based upon non-random assignment, internal validity, or other well-established principles of causal inference.*

- **Revolving Door Dynamics.** It is now well known that the existence of revolving door dynamics does not, in and of itself, suggest capture. A purely informational account of regulation, whereby regulators invest in and acquire expertise. What is needed is something in the direction of William Gormley's famous study of FCC Commissioners, namely the demonstration that, conditioned upon other variables, the rotators differed in their voting behavior from the non-rotators on the commission. Gormley finds quite mixed evidence using this test, and it is deeply unfortunate that subsequent scholarship in law and economics, political science and other fields has not followed upon his pioneering example with different methods.
- **Capture versus Electorally Sanctioned Pro-Business Governance.** An otherwise neutral regulatory regime (statute) may be enforced by an appointee whose preferences align more with those of the regulated industry, as in the case of the Reagan Administration's governance of environmental policy of the Bush (II) Administration's governance of consumer protection agencies. Yet to show that the arrival of more conservative politicians is correlated with more business-friendly regulation is not, in my judgment, a sufficient demonstration of capture. Put differently, if the George W. Bush Administration were installed in power for the next forty years and regulatory enforcement withered over those decades, it would be difficult to describe the pattern as capture unless one had evidence that the electorate's preferences for stronger regulation (or for different regulation) were somehow being distorted by the electoral process. A better test of capture, it would appear, is that even when there are electoral majorities and political appointees in place who favor a more robust regulatory regime (more pursuit of W as opposed to I or S), that the agency still, under conditions of capture, consistently chooses I/S over W in ways that are difficult for the electoral majority or political appointee to correct or penetrate.

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III – Towards a Better Pattern of Study, Claims and Inferences

What can be done to improve the pattern of inferences made by scholars, policymakers and observers regarding the possible capture of regulation or regulatory institutions? Part of the solution, I think, rests in criticism itself. Scholars and observers should insist upon clear standards of evidence and a solid counterfactual when receiving claims of regulatory capture.

As for questions about internal validity, I do not think that the answer lies in field or laboratory experiments. For the purposes of public policy and scholarly understanding, we must, in the end, identify which particular regimes and agencies are better described by capture dynamics and which are not. And the external validity problems of a field experiment in this kind of situation would seem to be imposing.

To be sure, the idea of using quasi-experimental techniques is important, whether these include “instruments” measuring plausible exogenous variation in industry interests or public welfare, or refined statistical or econometric techniques such as panel analyses, differences-in-differences estimators with appropriate corrections, non-parametric matching.

At the end of the day, causal inference techniques must be accompanied by two other research strategies.

1. **Measurement of public versus industry interest in regulatory studies.** Clear empirical identification of choices/outcomes that would, ex ante or ex post, serve a public welfare consideration as opposed to an industry influence, and an empirical design that permits rejection of the hypothesis that both of these interests are served in a pattern of decisions.
2. **Mechanisms.** If one is proceeding from a libertarian, anti-regulation perspective, then research strategy one is enough. Once we have found a captured regulation, then we demonstrate that we are better off without it (empirically and theoretically) and proceed to deregulate. But if the idea is to improve and not to abandon regulation, then an understanding of the mechanisms of capture is critical. It is critical for combating capture, and it is critical for the important work of implementing mechanisms that would induce regulators to pro-actively pursue their agency’s statutory mission.

My memo ends here. I have some thoughts about empirical and historical research ideas that I’m thinking about, but I think a fuller discussion is in order before we get to a list of superior inferential strategies.