From Economic to Social Regulation: How the Deregulatory Moment Strengthened Economists' Policy Position

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Michael Bernstein (2001), in his well-known book on economics and public policy in the twentieth-century United States, tells the story of economics in the post-Kennedy decades as a declension narrative, in which influence peaks with Walter Heller and then steadily diminishes. However, while the Kennedy administration may have marked the high-water point for a certain kind of advisory influence on the president, it is incorrect to say that the influence of economists declined. On the contrary, economists became increasingly important, but in new ways.

The existing literature has noted this (Backhouse 2010; Fourcade 2009; McMillan 2003; Rodgers 2011; Sent et al. 2005), but no one has yet provided an account of economists' changing role in policy. Philip Mirowski and others have written about the role of the Mont Pelerin Society, the Chicago school, and free market economics in reshaping policy after 1970 (Backhouse 2005; Burgin 2012; Mirowski 2013; Mirowski and Plehwe 2009; Van Horn, Mirowski, and Stapleford 2011), and such economists certainly were pushing for deregulation and other market-oriented policies.

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But the story of how economic thinking spread throughout Washington is much richer and more complex than a narrative focused exclusively on one set of intellectual communities can represent.

This article uses the case of regulatory policy to look at the changing ways economic ideas were applied to policy dilemmas in Washington in the 1970s. The deregulatory moment of the late 1970s brought together the efforts of industrial organization (I/O) economists, who advanced arguments against government controls on prices and entry in a number of industries, with the legacy of systems analysts, who wanted to use cost-benefit methods to make more economically rational decisions about how to achieve policy goals.[1] The resultant changes increased the policy influence of economists by creating new legal requirements for the economic analysis of regulation and expanding executive branch offices that represented an economic point of view.

The article presents this narrative as follows. Systems analysis and I/O economics of regulation had both emerged as distinct intellectual communities speaking to policy problems by the late 1960s. Systems analysis had a wave of popularity during the sixties, and a version of it was implemented throughout the executive branch in the form of the Planning-Programming-Budgeting System (PPBS). It increased policymakers' familiarity with cost-benefit methods and led to the creation of new "policy offices" across the executive agencies, but its influence was on the wane by 1970. The inflation crisis brought members of the I/O community into the Ford White House in the mid-1970s, even as interest in systems analysis had declined. But while these I/O economists supported economic deregulation—the removal of price and entry restrictions in industries like transportation and energy—their ability to advance their cause from within the White House was limited. So they began to turn their attention to social regulation, making cost-benefit arguments that had clear affinities with those made by systems analysts.

When the Carter administration placed Charles Schultze, who had played a critical role in spreading PPBS throughout government in the 1960s, in charge of the regulatory review process, these two projects were linked. Following the advocacy of a variety of economists, Jimmy Carter and then Ronald Reagan put into place new requirements for weighing the costs and benefits of regulations. This increased the demand for economic

1. I use the term *cost-benefit* to refer generally to both cost-benefit and cost-effectiveness analysis, except where the distinction is relevant.

analysis and strengthened the offices that conducted such analysis. In the decades that followed, the lasting ties between Washington and academe that these offices produced would serve as two-way channels for the transmission of economic ideas.

This story extends our understanding of how economic reasoning is applied in the policy process and expands on accounts that focus heavily on either macroeconomic advice or the Chicago school. In particular, it points to two factors that may mediate the application of economics in the policy context. First, while academic economists have a particular area of expertise, they are also typically committed to an economic "style of reasoning" (Hacking 1992) more broadly: thinking marginally, considering opportunity costs, and so on. While economists may become involved with policy to apply lessons from their own research, they may also work to advance other forms of economic reasoning if the opportunity presents itself—in Schultze's (1982, 62) phrase, to serve as "partisan advocate[s] for efficiency."

Second, economists' attempts to apply their ideas to policy may have long-term effects even when their efforts to change policy are not directly successful. In particular, the creation of bureaucratic offices that hire economists can produce ongoing advocates for economic reasoning, link the academic and policy worlds, and serve as conduits for both people and ideas to travel back and forth between the two.

Systems Analysis, PPBS, and the Creation of Policy Offices

Before anyone in Washington had even heard of the economics of regulation, everyone knew about the systems analysts. Systems analysis, developed at the RAND Corporation, was intended to be a science of choice: a systematic, mathematically grounded method for selecting the best means to achieve a given end. A close relative of cost-benefit analysis, it also counted operations research and applied math among its ancestors. But in the 1950s systems analysis was increasingly centered in RAND's economics department and championed by economics PhDs (Jardini 2013; Kaplan 1983; Thomas 2015).

The Washington version of systems analysis was called PPBS: the Planning-Programming-Budgeting System. This budgeting method started by identifying policy goals, then evaluated the relative costs of alternative government programs that might reach those goals, then allocated resources based on which were most cost-effective—that is, planning, programming, budgeting (Novick [1965] 1967). Following John F. Kennedy's election in 1960, Defense Secretary Robert McNamara brought much of the RAND economics team to Washington to implement this rational, quantitative management method in the Defense Department. PPBS took Washington by storm and was perceived outside the Defense Department as quite successful. Its champions at RAND had long emphasized its applicability beyond defense (e.g., Novick 1954, v) and by 1962 were confidently predicting that "variants of [PPBS] may be expected to be adopted by other Government agencies" (Novick 1962, 1). When, in 1965, Schultze became director of the Budget Bureau, this prediction came to pass.

Schultze (1969, 1), a public finance economist who earned a PhD in 1960 from the University of Maryland while working as a Council of Economic Advisers staffer, was not part of the RAND group. But he found its methods appealing and hired the RAND economist Henry Rowen to lead the implementation of PPBS throughout the executive branch, a move President Lyndon B. Johnson supported with enthusiasm (Jardini 2013; Lynn 2015). The point was to require executive agencies to think more carefully about what they were trying to achieve and more systematically about the most cost-effective way to achieve it.

Under Schultze's watch, PPBS took on an almost faddish popularity, causing "as noisy a disturbance in Washington, its field offices, and ultimately in state and local jurisdictions and foreign governments as any administrative idea" in twenty years (Mosher 1984, 124). *Program Budgeting*, a dry tome compiled by the RAND economist David Novick, became a surprise best seller, and by 1968 about one thousand employees outside the Defense Department were employed to manage PPBS (Novick [1965] 1967, vii–ix; US GAO 1969, 48).

PPBS proved quite challenging to implement in practice. The US Geological Service described its difficulties in terms that could have been used by many agencies: it "was handicapped by the lack of well-defined objectives which would readily be translated into plans amenable to Planning-Programming analysis" and was staffed "by professional geologists and scientists without experience in economics, quantitative analysis, or the related disciplines needed" (Belfer et al. 1968, 1). By 1969 the Budget Bureau found that only three of twenty-one agencies had made "substantial progress" toward implementation of PPBS, and in 1971 President Richard Nixon quietly ended the requirement for its use (Mosher 1984, 124; US GAO 1969, 1).

Yet "as the vehicle chosen by the executive branch to bring economic analysis into the budgetary and other allocative decisions with which it was confronted" (Haveman 1976, 235), PPBS had lasting effects on how economics was applied to government decisions. Most significantly for the present article, it led to the creation of policy analysis offices in a wide range of agencies. When Johnson established PPBS, he required agencies to appoint staff directly accountable to the agency's head to implement it (US GAO 1969, 4). Most agencies responded by creating a policy office, with names like the Office of Policy Planning or the Office of Planning and Evaluation. Such offices were typically led by an economist (the first five directors of Interior's Office of Policy Analysis, for example, all held economics PhDs; see Nelson 1991, 138), often had additional economists on staff, and in general reflected an economic style of reasoning about policy problems.[2]

It soon became the norm for government agencies to include such policy offices. They generally survived the demise of PPBS and were created at new agencies like the Environmental Protection Agency (established 1970) and the Department of Education (1979), even after PPBS no longer demanded them. Offices of policy analysis created lasting ties between the executive branch and the discipline of economics, and in the late 1970s the deregulatory movement would build on their institutional legacy, even as PPBS itself was becoming a distant memory.

From Industrial Organization to Economic Regulation

While PPBS was bringing RAND economists into the policy process in the 1960s, another network of policy-relevant economists was beginning to form elsewhere in Washington: a group studying the economics of regulation. This group emerged from the subfield of industrial organization, itself relatively new and developing rapidly.

While systems analysis was created in direct response to policy needs, industrial organization—with its interest in market structure and firm behavior—originated at a slightly greater remove from policymaking. During the 1950s, however, industrial organization economists strengthened their connections with legal scholars, particularly around issues of

2. Examples of economists leading such offices in the late 1960s include Joseph Kershaw at the Office of Economic Opportunity; William Gorham at Health, Education, and Welfare; William B. Ross at Housing and Urban Development; and Howard Hjort at Agriculture; see Levine 1969, 62; Gorham 1986, 1–5, 31; NRC 2008, 12; Hjort 1968.

antitrust. The story of Chicago's Antitrust Project, led by Aaron Director, is the best known (Van Horn 2009; Van Horn and Klaes 2011). But it was Harvard, where Edward Mason trained Joe Bain, Merton J. Peck, and Richard Caves (among others; see Shepherd 2007), and where a competing antitrust workshop brought together economics professors like Mason and Carl Kaysen with law professors like Donald Turner (who held a Harvard economics PhD) and Kingman Brewster (Fisher 2012), that then dominated industrial organization and the economics of antitrust.

Harvard also had much stronger ties to the world of Washington than did Chicago. During World War II, Mason had been one of the most important economists in government, as head of the economics section of the Office of Strategic Services' Research and Analysis Branch (Katz 1989, chap. 4).[3] By the 1960s his students were scattered through Washington as well: Kaysen as Kennedy's special assistant; Peck as one of McNamara's Whiz Kids; and Turner as chief of the Antitrust Division (Eisner 1991; Fisher 2012; Hua 2013).

While antitrust was the main area in which I/O was being applied to policy at the time, I/O economists were also becoming interested in economic regulation, with young scholars at Harvard, for example, arguing that regulation of the transportation industry did not make economic sense (Meyer et al. 1959; see also Peck 1988). Economists shared this emerging focus with academics in fields like law and political science, who were making congruent critiques about regulatory capture by the end of the 1950s (Novak 2013). As early as 1962, President Kennedy, following the advice of academics, appealed to Congress for transportation deregulation. At the time, however, Kennedy was largely ignored (Novak 2013; Peck 1988; American Presidency Project 1962).

Interest in deregulation continued at a modest level during the Johnson administration.[4] Within economics, evidence was accumulating that economic regulation often hurt consumers (Averch and Johnson 1962; Caves 1962; Stigler and Friedland 1962).[5] Outside it, scholars like Gabriel Kolko

3. For an anecdote about Mason declining a call from the president because he was busy teaching a class, see Peck 1988.

4. Peck (now a CEA member) and CEA staffer Paul MacAvoy made the case for economic deregulation from within the Johnson White House (Peck 1988; Welborn 1993). MacAvoy was a 1960 Yale PhD; his early work found that natural gas and railway regulation had undesirable effects (MacAvoy 1962, 1965).

5. These critiques came from a variety of academic locations. Averch and Johnson were employed by RAND; Caves, a Harvard PhD, was then at Berkeley with Joe Bain; Stigler and Friedland were of course at Chicago.

(1963) and Theodore Lowi (1969) were advancing regulatory critiques that would inspire followers of Ralph Nader (Marcus 1980; Merrill 1997). At the same time, public choice arguments had emerged to provide yet another set of reasons regulators might not be trusted to act in the public interest (Buchanan and Tullock 1962; Downs 1957; Riker 1962). By 1971, when George Stigler's "Theory of Economic Regulation" was published, he could write that "so many economists . . . have denounced the [Interstate Commerce Commission] for its pro-railroad policies that this has become a cliché of the literature" (17).

In economics, much of this attention was consolidated through a new Brookings Institution program on the regulation of economic activity. Begun in 1967 with a major grant from the Ford Foundation, its advisory committee was dominated by the 1960s antitrust crowd, and particularly by Harvard.[6] Fifteen of its twenty-four members were Harvard faculty or held Harvard PhDs, most with an I/O focus; no other institution had more than two or three such connections.[7]

But the work that this program would do helped the economics of regulation community to expand well beyond Harvard. Its first activity was a conference on the regulation of freight transport (Friedlaender 1969); over the next eight years, the Brookings program nurtured academic interest by commissioning books, supporting research, bringing scholars together with policymakers, and funding workshops and graduate students at five universities (including at both Harvard, under Caves, and Chicago, under Ronald Coase).

In the process, "it yielded twenty-two books and monographs, sixty-five journal articles, and thirty-eight dissertations," and "channel[ed] the

6. Kermit Gordon, Brookings's new president at the time, had, as a CEA member a few years before, been among those who convinced President Kennedy that transportation should be deregulated (Novak 2013; Peck 1988).

7. Harvard faculty included Phillip Areeda (law), Richard Caves (economics), Zvi Griliches (economics), and Carl Kaysen (recently departed from the economics faculty); Chicago's Phil Neal was a Harvard law alumnus; and Harvard economics PhDs included Joe Bain, Franklin Fisher, Burton Klein, James McKie, James Nelson, Merton J. Peck, Richard Quandt, John Sheahan, and Peter Steiner. The remaining advisory committee members as of 1969 were MacAvoy, William Baxter, Richard Cyert, Jan Deutsch, Richard Heflebower, Edwin S. Mills, George Stigler, and Clair Wilcox. Leonard Silk, a Duke economics PhD who later became a *New York Times* economics columnist, and then Roger Noll, a Harvard economics PhD and Caltech professor who had recently served as a CEA staffer, successively administered the program; the tax economist Joseph Pechman, who directed Brookings's economics program, oversaw it. See folders "Regulation" No. 1 and No. 2, box 10A, Leonard Silk Papers, Duke University Archives; see also box 26.

research interests of scores of economists in a new direction" (Smith 1991, 88–91). A number of these academics who would play important policy roles in deregulation published in the Brookings series, including those who worked for Democrats (Stephen Breyer), Republicans (Paul MacAvoy, James C. Miller III), and both (George Eads; see Breyer and MacAvoy 1974; Douglas and Miller 1974; Eads 1971).

Brookings was not the only game in town, and the conservative American Enterprise Institute (AEI) also published monographs on regulation in the early 1970s, including several authored by Chicago scholars (e.g., Cohen and Stigler 1971; Gould 1971; Peltzman 1974; Posner 1973). But while AEI supported scholarship on the economics of regulation in the first half of the decade, it was not until 1976, when it launched the Center for the Study of Regulation, that AEI took on the same kind of community-building role played by Brookings up to that point (Canedo 2008; Stahl 2016).

By then, however, economists across the political spectrum had already reached consensus that removal of price and entry controls was good policy in a number of industries—at a minimum, in airlines, rail, and trucking—and "a small, informal community" committed to regulatory reform was scattered throughout Washington (Derthick and Quirk 1985, 38). Yet little actual change in regulatory policy took place during the Nixon administration. Miller (2010, 38–39), an economist, was involved in a failed effort to deregulate surface transportation from within the Department of Transportation, and the CEA continued to support transportation deregulation from the White House (Rose, Seely, and Barrett 2006, 160). But it was an uphill battle—"the story of a few brave but lonely economists stubbornly attacking the American economy's largest legal cartel," as the CEA member Gary Seevers (1975, 201) put it shortly thereafter. Significant change would not take place until after Nixon left office.

The Ford Administration: Making Regulation a White House Priority

When Gerald R. Ford entered office in August 1974, inflation—which had just reached a record rate of 9.6 percent (US Department of Labor 2016)—was already the top economic issue. One of Ford's first actions in office was to convene a series of "summit conferences" on inflation, including one that brought together a wide-ranging group of economists, both liberals (Kermit Gordon, Walter Heller, John Kenneth Galbraith) and conservatives (Milton Friedman, Herbert Stein). The I/O community, however, was not well represented.[8]

One exception, though, was Thomas Moore (1972), a Chicago PhD who had served as a senior CEA staffer under Nixon and had authored an AEI monograph on freight transportation regulation. The economists present could come to little agreement on how to stop inflation. But when Moore presented a list of twenty-two goals for regulatory policy—removing price, entry, and trade restrictions in the transportation, energy, banking, and agricultural sectors—all but two of the twenty-three economists, including nearly all the liberals, signed off on the program (*Economists Conference* 1974, 11–13). The link to inflation was somewhat tenuous, and even Moore commented, "I would agree that this program is not the central way to deal with inflation. But," he continued, "I do think that it will help move things in the right direction. . . . It is a desirable thing to achieve" (*Economists Conference* 1974, 157–58). By 1974 a broad range of his colleagues agreed.

And so, apparently, did Ford. His "Whip Inflation Now" speech, given the following month, proposed deregulation of the natural gas industry, a National Commission on Regulatory Reform (never established by Congress) to overhaul the independent regulatory agencies, and review of the inflationary impact of all major executive regulations (Ford 1974; see also Mieczkowski 2005, 184–87). As a result of this presidential interest in regulation, several members of the Brookings network soon found themselves in the White House.

At the Council of Economic Advisers, Miller (2010, 1), who had advocated for deregulation in Nixon's Department of Transportation, was appointed a staffer. MIT's MacAvoy, a leader in the economics of regulation (Breyer and MacAvoy 1974; MacAvoy 1965, 1970), soon joined as a CEA member and went on to cochair the Domestic Council Review Group on Regulatory Reform. Ford also created the White House Council on Wage and Price Stability (COWPS), which included an office focused on government's contributions to inflation—increasingly read to mean regulation. Eads (1971), a young Yale PhD who had published a Brookings volume on airline deregulation, led that office first; he was succeeded in 1975 by Miller, who had moved over from the CEA.[9] As Breyer (2008), who was promoting airline deregulation from a Senate staff position,

8. For a list of attendees, see *The Economists Conference on Inflation* (1974, 6–7, 14–15).

9. On COWPS staffing, see the COWPS archives at cowps.mercatus.org.

recalled, by 1975 "they were all over the place, this group of people interested in deregulation."

These economists were drawn to regulatory policy because of their I/O work on *economic* regulation: "programs that attempt to control prices, conditions of market entry and exit, and conditions of service, usually in specific industries considered to be 'affected with the public interest'" (Eads and Fix 1984, 12). And the Ford administration did work aggressively to deregulate the airline and trucking industries, and managed to pass legislation giving railroads greater capacity to set rates (Mieczkowski 2005, 185–87; Rose, Seely, and Barrett 2006, 170–76). Yet from within the White House, I/O economists had limited ability to promote this agenda, despite the president's support, since such regulation was established partly by the independent regulatory agencies and partly by Congress.

As economists, however, they were also generally sympathetic to a different set of arguments about the inefficiency of government decisions. The previous decade had produced a major wave of what was coming to be called *social* regulation: "the set of federal programs that use regulatory techniques to achieve broad social goals—a clean environment, safer and more healthful workplaces, safer and more effective consumer products, and the assurance of equal employment opportunities" (Eads and Fix 1984, 12). Limits on ozone emissions or requirements to protect workers from coal dust inhalation were social regulation, distinct from rules about what routes airlines could fly or how much they could charge.

The Brookings program, and I/O research more generally, focused heavily on economic regulation. Its studies about airfares on intrastate versus interstate flights did not speak to the question of what government should do to ensure a clean environment. What did speak to such questions was a cost-benefit approach—something much more akin to what systems analysts had asked in the 1960s: given a particular policy goal, what is the most cost-effective method to reach it?

This was not really an I/O question. But thinking about trade-offs and opportunity costs was very basic economics, and nearly all economists, regardless of their politics or general attitudes about government, could get behind the idea that this was a useful way to approach social regulation. Moreover, while the White House had only indirect influence over economic regulation, most social regulation was propagated by executive agencies that operated (within statutory limitations) under the authority of the White House. Increasingly, White House economists whose original interest had been in economic regulation began to articulate the case for cost-benefit analysis of social regulation as well.

Ford (1974) had announced in his "Whip Inflation Now" speech that he would require major proposed regulations to include an "inflation impact statement"—which meant estimating the costs they would impose. These statements had no real teeth and were mostly there for the purpose of "manifesting presidential concern" about the costs of regulation (Eads and Fix 1984, 51). But at COWPS, Eads's office now began to file public comments on inflation impact statements in order to draw attention to regulatory costs. Eads, who was politically moderate, emphasized that Ford staffers generally saw regulation as legitimate, but sought to achieve its goals "as efficiently and as inexpensively as possible" (Eads and Fix 1984, 52–54). As he wrote to an EPA administration, "Aircraft noise might affect the 'Public Health and Welfare' but we reject the notion that annoyance must be reduced at all costs. This is because of the tradeoffs involved. The reduction of this annoyance imposes costs in a world of limited resources that reduces the health and welfare society derives from other goods, services, and amenities that must be sacrificed to produce the reduction in noise."[10]

When Miller took Eads's place, he articulated the position even more explicitly: "I am not saying that all government regulation is bad. . . . [but] the evidence we do have on the effects of social regulation suggests that the costs are enormous and in many cases overwhelm any reasonable estimate of benefits."[11] And he explicitly noted PPBS as an antecedent, writing that "benefit-cost analysis has been a part of the economists' tool kit for at least a decade and was applied to many government programs as part of the 'planning-programming-budgeting' (PPB) review efforts promulgated by the federal Bureau of the Budget during the 1960s" (Miller and Yandle 1979). MacAvoy, too, advanced similar arguments. The final report of his Review Group on Regulatory Reform argued that while price and entry restrictions did need to be removed, "relatively little attention has so far been given to reforms of social regulation," and it emphasized the need for government to produce "knowledge that would permit informed tradeoffs among competing priorities or any cumulative measure of the overall regulatory cost" (US Domestic Council 1977, 39, 16–17).

But while I/O economists began to make the turn from economic to social regulation during the Ford administration, and from policy positions

10. George Eads to Roger Strelow, May 9, 1975, COWPS archives, cwps.mercatus.org/wp-content/uploads/1-0301.pdf.

11. Remarks of James C. Miller III before the American Management Association's First National Forum on Business, Government and the Public Interest, December 2, 1976, COWPS archives, cwps.mercatus.org/wp-content/uploads/6-0401.pdf.

taken directly from I/O research to ones inspired by economic reasoning more generally, Ford was not reelected to a second term. Ironically, it would be under Carter—whose inclinations toward regulation were generally more positive—that this emerging agenda would start to be realized and linked more directly with the legacy of systems analysis.

The Carter Administration: Social Regulation and the Legacy of PPBS

By 1976, when Carter was elected, the issue of regulation was beginning to receive wider public attention. Carter, like Ford, campaigned on transportation deregulation, and major bills deregulating airlines, trucking, and rail—as well as financial institutions—all passed under his watch (Biven 2002, 217–22).

But while Carter is now best known for economic deregulation, he was also interested in "regulatory reform"—improving the quality of social regulation—and at the outset of his administration decided to rethink the regulatory review process that had developed under Ford. Eads had initiated the process of filing COWPS comments on inflation impact statements, but the comments were filed too late to have a meaningful impact on regulatory decisions. To develop a new process that would draw more attention to regulatory cost-effectiveness, Carter tapped Schultze, his new CEA chair (Biven 2002, 54–55; Eads and Fix 1984).

Schultze, who had overseen the implementation of PPBS from the Budget Bureau a decade before, was perhaps the ideal person to link regulatory reform with the legacy of systems analysis. After leaving the Budget Bureau, Schultze (1968, 1977) went to Brookings, where—though not a core member of the economics of regulation network—he wrote about the politics of PPBS and argued for incentive-based methods of achieving regulatory goals. As CEA chair, Schultze played a critical role in shaping Carter's regulatory strategy. The focus on economic regulation continued, but attention to social regulation, and especially to its cost-benefit trade-offs, increased dramatically: Carter's official policy statement contained two pages on the former and eleven on the latter.[12] Among the most significant steps the administration took to address social regulation was the creation of the new White House Regulatory Analysis Review Group, or RARG.

12. "Regulatory Reform: President Carter's Program," n.d., folder "Regulatory Reform [6]," box 75, Charles L. Schultze Subject Files, Jimmy Carter Presidential Library and Museum, Atlanta.

RARG, in which Schultze played a prominent role and which was staffed primarily by COWPS and CEA employees, was intended to pressure agencies to think more about the costs of regulation earlier in the regulatory process. RARG was charged with analyzing major regulations—the ten to twenty a year that were expected to have an economic impact of $100 million or more. When an agency proposed a new regulation, it would submit estimates of its costs, and the costs of alternatives, to RARG, which would conduct analyses of its own to evaluate the regulation's cost-effectiveness. While RARG lacked veto power over the regulations it objected to, it could negotiate with the regulating agency to push for a more cost-effective approach, or, if conflicts could not be resolved, it could bring them to the president (Eads and Fix 1984, 55–60).

The cost-effectiveness (rather than cost-benefit) approach favored by Schultze and the Carter administration was quite consonant with the systems analysis methods Schultze had promoted in the 1960s: to start with an agency's goals and then identify the most efficient way to reach them. But it built on the efforts I/O economists in the Ford administration had made to increase attention to regulatory costs, and it was primarily I/O economists—particularly Eads, who oversaw much of the work when he returned to the White House in 1979 as a CEA member, and the CEA staffers Robert Litan (then a Yale PhD student with an I/O focus) and Lawrence J. White (a Harvard I/O PhD)—who carried out the RARG review process.[13]

While this new approach was less directly linked with the scholarship on economic regulation that brought the Brookings network together and that economists like Eads were best known for, it still reflected economic reasoning—in particular, "the common professional view that allocative efficiency was a, if not the, central virtue of all public policy. As representatives of the economic viewpoint, a rule that would impose huge costs for little or no gain was, to the RARGers, an affront both to public morality and to their sense of professional responsibility" (Landy, Roberts, and Thomas 1994, 67).

Moreover, this turn toward cost-effectiveness analysis built on the legacy of systems analysis in another way as well. In the executive agencies,

13. Other relevant figures included William Nordhaus, who preceded Eads as a CEA member; Thomas Hopkins, who was promoted into the COWPS government office formerly led by Miller and Eads; and Alfred Kahn, who was appointed chair of COWPS after spearheading airline deregulation at the Civil Aeronautics Board. It is worth noting that all these economists, with the exception of White, were associated with Yale—Nordhaus as faculty, and Eads, Litan, Hopkins, and Kahn (much earlier) as PhDs. Eads also did a stint at RAND between his White House appointments, where he led the Regulatory Policies and Institutions Program.

it was the policy analysis offices created to implement PPBS that typically had the capacity to conduct such studies, and responsibility for estimating costs and benefits fell primarily to these offices. In response, policy offices beefed up their staffing—both to complete the required analyses and to make sure that adequate estimates of benefits, as well as the costs that industry was generally happy to highlight, were included in the review process. Indeed, agency economists saw new requirements for statements on the economic impact of regulations "as strengthening their hand in the agency. It may give them somewhat more influence on policy decisions, and it often leads to an increase in their share of agency resources" (Miller 1977, 18).

The Carter review process still lacked teeth, and RARG was cautious about bringing conflicts to the president after he failed to support one of RARG's early regulatory challenges (Clark 1978). Yet the turn from economic to social regulation that took place under Carter nevertheless saw I/O economists who studied price and entry restrictions advance ideas associated with systems analysis in a way that strengthened policy offices created by PPBS.

What remained to be seen, however, was whether this effort to demand more economic analysis of regulation would be institutionalized or fall by the wayside, as subsequent administrations would not be obligated to follow the review process that Ford and Carter had developed. Toward the end of his administration, Carter tried to pass legislation that would put regulatory review on more lasting statutory ground, but to no avail (Eads and Fix 1984, 82–85). But in the administration's final days, the Paperwork Reduction Act was passed to require consideration of paperwork obligations produced by new regulation (Tozzi 2011). The new organization created by that act, OMB's Office of Information and Regulatory Affairs (OIRA), soon became a foothold for the use of economic reasoning in the policy process—even as it sometimes was accused of serving an antiregulatory purpose, rather than an analytical one.

The Reagan Administration: The "Anti-Analytic Presidency" That Institutionalized Economic Analysis

During the Ford and Carter administrations, many advocates of deregulation had links to the intellectual community that Brookings had developed over the course of a decade. But in the mid-1970s, the center of gravity for regulatory conversation shifted away from the liberal, technocratic Brookings, as its major Ford Foundation grant expired, and toward the conservative, rapidly growing American Enterprise Institute (Smith 1991; Stahl 2016, 83).

AEI had published some monographs on regulation in the early 1970s, including several by Chicago economists, but it was not a center of influence on regulatory policy at that time (Canedo 2008, 297). But in 1975 the think tank secured several grants to start a Center for the Study of Government Regulation (Stahl 2016). The center's visibility increased in 1977 when Miller arrived at AEI as part of a wave of Ford staffers (who followed Ford himself to AEI; see Medvetz 2012, 106) and joined the economist Marvin Kosters as the center's codirector. A few months later, the center launched the policy journal *Regulation*, coedited by the economist Murray Weidenbaum and then law professor Antonin Scalia.[14]

Like Brookings's program, AEI's was led mostly by economists and had links to the academic I/O community. Familiar names could be found in its publications: MacAvoy, Kahn, Schultze, Eads. But the AEI effort differed in several significant ways from Brookings's. First, while Brookings had been trying to nurture a (policy-relevant) academic subfield into existence, AEI's primary goal was to change policy. Brookings funded graduate students and academic workshops; AEI's signal contribution was *Regulation*, an accessible periodical that maintained an academic tone but was aimed at policymakers (Stahl 2016, 84).

Second, while the Brookings group was made up primarily of I/O economists, the AEI network was centered on a policy community that included I/O economists, along with other types of economists, lawyers, and participants in the regulatory process, but was not dominated by them. And from the outset, AEI made social, as well as economic, regulation a central focus. Finally, though relatively academic in style, the AEI center was more ideological than Brookings had been. On the one hand, *Regulation* acknowledged that "in a complex industrial society, a substantial measure of regulation may be necessary" (Brunsdale 1977), and it published some defenders of regulation as well as its critics. But its leadership had a much stronger bent against social regulation than Brookings's

14. For information on the center's staffing, see the masthead of early issues of *Regulation* (full text available at www.cato.org/regulation/archives). Kosters was a 1966 Chicago PhD whose dissertation was on labor economics; Weidenbaum, who worked on public finance, had a 1958 PhD from Princeton and was on the faculty of Washington University. Scalia was on Chicago's law faculty at the time.

had: Miller had been called a "dogmatic and uncompromising" advocate of deregulation (Canedo 2008, 210), and Weidenbaum (1978) was best known for a controversial $100 billion estimate of regulatory costs.[15]

Economists across the political spectrum shared a commitment to removing economic regulations and supported some form of cost-benefit analysis of social regulation. But there were significant differences of opinion among economists on how much social regulation was likely to be optimal, and Miller and Weidenbaum clearly fell on the "much less" side of the continuum. When Reagan was elected president in November 1980, this was the group to which he turned. Weidenbaum was tapped to lead the transition team on regulation and then to chair Reagan's CEA; Miller became executive director of Reagan's new Task Force on Regulatory Relief (Miller 2011, 97; Weidenbaum 1984, 16). The Reagan administration continued to push for economic deregulation, and some additional progress was made under his watch, including the removal of price controls on oil and the deregulation of cable TV rates. But Reagan was reluctant to use political capital on what was "clearly the lowest priority" of the four economic planks of his administration (Niskanen 1994, 445), and change was relatively incremental in comparison with the major transportation deregulation that had occurred under Carter.[16]

Reagan's approach to social regulation, however, was different from Carter's or even Ford's. Rather than "regulatory reform," he embraced "regulatory relief"—not improving social regulation, but removing it. His administration included a mix of those (typically noneconomists) who derided policy analysis "as 'policy paralysis' . . . a means of better government planning when the objective should be to abandon many government functions" (Nelson 1991, 132), and those (more often economists) who believed in the value of cost-benefit analysis but expected it to justify the removal of many regulations. On balance, though, the administration was willing to use economic analysis as a way to rein in regulation, even if some members did not especially value it as a tool for decision making.

Before Reagan took office, the transition team asked Miller and the attorney C. Boyden Gray to produce a plan to implement regulatory relief, and shortly after the election, the president signed Executive Order 12291

15. For a relatively sympathetic assessment of Weidenbaum's estimate, see Eads and Fix 1984, 28–31; for a more critical one, see Litan and Nordhaus 1983, 19–20.

16. For summary and evaluation of the Reagan record on economic regulation from several perspectives, see Feldstein 1994, chaps. 6, 8.

(Miller 2011, 96–97).[17] This order retained much of the spirit of the Ford and Carter efforts to require economic analysis of regulation, but made several changes. It eliminated COWPS and RARG, and placed regulatory oversight with OIRA, the permanent new OMB office created by the Paperwork Reduction Act. It made cost-benefit, rather than cost-effectiveness, analyses mandatory except where legally prohibited. And it gave OIRA the ability to prevent regulations from being issued, an authority that RARG had lacked (Fix and Eads 1985: 298–99). Miller (2011, 97) was made the first administrator of OIRA, and many of the COWPS economists transferred to the new office. Thus the Reagan administration strengthened and institutionalized the formal role of economic analysis in the regulatory process. Yet during the Reagan administration, OIRA was seen by many not as a neutral arbiter but as a backdoor through which industry could intervene in the regulatory process—the place where "regulations went to die" (Revesz and Livermore 2011, 189).[18]

Both OIRA's degree of influence and its antiregulatory bent ebbed and flowed in subsequent years (US Library of Congress 2009). Indirectly, however, Executive Order 12291 strengthened the policy influence of economists in two ways. First, it made OIRA a permanent new foothold for an economic style of reasoning at OMB, even as the office's attitude toward regulation evolved. OIRA's administrators have typically either held economics PhDs (Miller, Wendy Lee Gramm, Howard Shelanski) or have been lawyers with a strong economic bent (Christopher DeMuth, Douglas Ginsburg, John D. Graham, Susan Dudley). The ongoing orientation of OIRA toward economics meant that it could subsequently serve as an entry point for ideas from academe, as when the administrator Cass Sunstein used the office to push for behavioral "nudges" in government (Wallace-Wells 2010).

Beyond OMB, though, requiring cost-benefit analysis of regulation also stimulated continued growth of the policy offices in the executive agencies, both to complete the required analyses and also (in their own defense) to quantify the benefits that agencies provided. This growth took place even as Reagan was slashing budgets of some of these agencies. At the Occupational Safety and Health Administration, for example, even during

17. According to Jim Tozzi (2011, 63), an OMB economist who subsequently became deputy administrator of OIRA, he and COWPS's Tom Hopkins did the actual drafting of Executive Order 12291.

18. The phrase "anti-analytic presidency" comes from the subtitle of Williams 1990.

"a period of staff cutbacks, [the OSHA administrator] obtained special permission to hire extra economists to prepare regulatory impact analyses" (MacLaury 1984). At EPA, "the policy office was much more powerful" during the early Reagan administration than it had been before, even though "many analysts believed that their work product was used not so much as a tool for reaching the best decisions as a way to justify after-the-fact decisions reached on other grounds" (McGarity 1991, 260).

This expansion of policy offices did not only take place in the agencies dealing with social regulation. These offices served as representatives of an economic style of reasoning in a number of departments dealing with economic regulation as well. For example, the Federal Trade Commission had long had a Bureau of Economics but also created an Office of Policy Planning and Evaluation. Kahn established an Office of Economic Analysis at the Civil Aeronautics Board in 1977, and the Interstate Commerce Commission created an economist-staffed Office of Policy Analysis at the same time (Eisner 2000, 186). And Carter's appointee at the Federal Communications Commission enlarged its Office of Plans and Policy (Horwitz 1991, 355) and "more than doubled the number of economists, to about 100" (Jung 1996, 26). Thus both economic deregulation and reform of social regulation built on the organizational infrastructure that had been established by PPBS the decade before.

This strengthening mattered not only because the policy offices were anchors for economic reasoning in the agencies but also because they served as conduits between Washington and academic economics. For example, the development of emissions markets began at the EPA's Office of Planning and Evaluation (Cook 1988), and the FCC's Office of Plans and Policy introduced and advocated for the idea of telecommunication spectrum auctions (Kwerel and Rosston 2000).

Finally, at least some of this new demand for cost-benefit analysis of regulation fed back into the discipline of economics itself. Agencies sought new ways to measure the benefits of their regulations, so they could better defend their actions. EPA, for example, supported academic research to improve methods for estimating the benefits of environmental regulation, "fund[ing] development of such innovative methods as contingent valuation and [making] significant advances in data collection, econometric methods, and hedonic modeling" (US EPA 1984). The agency commissioned roughly 250 studies, primarily by academic economists, to quantify benefits, particularly to develop contingent valuation methods but also using a variety of revealed preference techniques (Anderson and Kobrin

1998). By prompting government to channel its research dollars in new ways, the policy changes that economists advocated for ultimately affected the direction of academic research itself, closing the circle of influence.[19]

Applying Economics to Regulatory Policy: Contingent Success and Indirect Effects

During the US deregulatory moment, the policy efforts of industrial organization economists became linked with the legacy of systems analysis in ways that strengthened the subsequent policy position of economists and advocates of economic reasoning. In the 1960s proponents of systems analysis rolled out the Planning-Programming-Budgeting System, which introduced cost-benefit techniques to new parts of government and established policy offices, dominated by economists, throughout the executive branch. By the early 1970s PPBS was being abandoned, and systems analysis was on the decline. But another community of economists—emerging from I/O and focused on economic regulation—was gaining policy influence because White House officials hoped that they could help solve inflation. These I/O economists did make the case for economic deregulation, which advanced significantly during this period, but increasingly, and in partnership with one of the fathers of PPBS, they began to argue for cost-benefit analysis of social regulation as well.

Over the course of several presidential administrations, requirements for cost-benefit analysis of regulation were gradually strengthened and institutionalized, resulting by the early 1980s in the creation of OIRA, a new OMB office empowered to block many regulations that did not meet such a test. In the process, many agencies expanded and strengthened the policy offices PPBS had created in order to conduct economic analyses. This increased the policy role of economists and the visibility of economic reasoning in those agencies, and established new links between academe and Washington.

The initial wave of I/O economists who advocated for economic deregulation were part of an academic intellectual community and advocated for policies that were implied fairly directly by their academic research. They gained influence for contingent reasons—because inflation became a problem at a particular moment and because their policy prescription (economic deregulation) was less controversial among economists than other

19. See also Banzhaf, this volume.

potential responses to inflation. Yet their influence was temporary—the offices they worked in (COWPS, RARG) were gone a decade later, and many returned to academe or retreated to think tanks after a few years.

We can make two observations about the process through which economics is applied to policy, though, beyond whatever direct contribution these economists made to the wave of economic deregulation that took place between the mid-1970s and the mid-1980s. First, they served as representatives not only of a particular body of knowledge about economic regulation but also a broader economic "style of reasoning." When the path to advocating economic deregulation was blocked, they took advantage of the opportunity to advocate for cost-benefit analysis of social regulation—to follow Schultze's (1982, 62) advice that in government, the economist's "role is to be the partisan advocate for efficiency." Such a position was consistent with the broader tenets of economics, even though it did not follow directly from the research findings they initially came to apply.

Second, their short-term influence had lasting effects because it contributed to the establishment and expansion of OIRA and the policy offices, which remained strongholds for economic reasoning in the future. During this bureaucratic expansion, one wave of efforts to apply economics to policy (through economic deregulation) built on a past wave (to apply it through PPBS) in ways that set the stage for future attempts (to apply it through emissions trading, spectrum auctions, or behavioral nudges). Thus even as a specific attempt to apply economics to policy may have more or less success, it can have lasting, if indirect, effects.

While "becoming applied" might reflect a broader turn in the discipline of economics, or in the process of taking theories into the "real world," this case highlights other elements of the process of applying economic knowledge. Economics is not merely a collection of models or of research results. It also reflects a distinctive way of thinking about the world that academic economists have internalized. Economists may enter an applied arena, like the world of policy, with the intent of implementing a particular change suggested by their research. But it may be as representatives of a broader style of reasoning that economists' greatest impact is felt, and the creation of pathways along which future ideas can travel may be just as important as ideas that economists advocate for at a particular moment.

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