DYNAMIC RULEMAKING

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In administrative law, it is generally assumed that once an agency promulgates a final rule, its work on that project—provided the rule is not litigated—has come to an end. In order to ensure that these static rules adjust to the times, therefore, both Congress and the White House have imposed a growing number of formal requirements on agencies to "look back" at their rules and revise or repeal ones that are ineffective.

*Our empirical study of the rulemaking process in three agencies (*N = *462 revised rules to 183 parent rules) reveals that—contrary to conventional wisdom—agencies face a variety of incentives to revise and update their rules outside of such formal requirements. Not the least of these is pressure from those groups that are affected by their regulations. There is in fact a vibrant world of informal rule revision that occurs voluntarily and through a variety of techniques. We label this phenomenon "dynamic rulemaking." In this Article, we share our empirical findings, provide a conceptual map of this unexplored world of rule revisions, and offer some preliminary thoughts about the normative implications of dynamic rulemaking for regulatory reform.*

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Introduction

An agency's publication of a final rule, conventionally understood, marks the completion of an arduous and sometimes tumultuous

life cycle.[1] In preparing just the proposed rule, the agency typically engages in an information-gathering and analytical process that can consume many years.[2] Add a few more years for the agency to solicit, collate, digest, and respond to a barrage of comments and convince the White House to pass the rule through to the *Federal Register*. And then, after publication of the final rule and compilation of a supporting record, one or more interest groups may file motions for reconsideration and ultimately challenge the regulation in court.[3] Once the agency clears these hurdles, the administrative law literature gives the impression that its work is effectively concluded and its staff may move on to other pressing matters.

This static view of the rulemaking process has been the source of considerable consternation for regulatory reformers, who complain that agencies that have gone to the effort of developing a regulation have little incentive to reexamine it in light of subsequent technological developments, changed policies, and experience with its application in the field.[4] Largely at the urging of regulated industries, every

[1] *See, e.g.*, MAEVE P. CAREY, CONG. RESEARCH SERV., RL32240, THE FEDERAL RULEMAKING PROCESS: AN OVERVIEW 2 (2013), http://fas.org/sgp/crs/misc/RL32240.pdf (diagramming the rulemaking life cycle, which ends with the final promulgated rule, but failing to mention a process for rule revision); *see also* WILLIAM F. FUNK, SIDNEY A. SHAPIRO & RUSSELL L. WEAVER, ADMINISTRATIVE PROCEDURE AND PRACTICE: PROBLEMS AND CASES 48–191 (4th ed. 2010) (discussing at length the rulemaking process but providing little mention of revised rules and the vehicles for revisions such as petitions for reconsideration); JEFFREY S. LUBBERS, A GUIDE TO FEDERAL AGENCY RULEMAKING 29–30, 138–39, 355–61 (5th ed. 2012) (providing a comprehensive discussion of the stages of informal rulemaking, but not discussing the revision of final rules except for a short chapter, Chapter 8, and a few scattered pages on political initiatives that encourage agencies to revisit existing rules for reasons of efficiency); RICHARD J. PIERCE, JR., ADMINISTRATIVE LAW TREATISE 411–527 (4th ed. 2002) (providing little to no mention of rule reconsideration or revised rules despite offering a comprehensive overview of the rulemaking process).

[2] *See, e.g.*, Wendy Wagner, Katherine Barnes & Lisa Peters, *Rulemaking in the Shade: An Empirical Study of EPA's Air Toxic Emission Standards*, 63 ADMIN. L. REV. 99, 143–44 (2011) (noting that the average time from the initiation of a rule to the publication of a proposed rule for the technology-based air toxic emission standards was four years and during this period EPA logged in, among other things, more than one hundred communications with regulated parties per rule, on average).

[3] *See, e.g.*, *id.* at 146 (finding that of the air toxic technology-based emission standards, "[a]t least 22% of the rules resulted in petitions for reconsideration and 13% percent [sic] involved appeals to court").

[4] *See* ADMIN. CONFERENCE OF THE U.S., ADMINISTRATIVE CONFERENCE RECOMMENDATION 2014-5, RETROSPECTIVE REVIEW OF AGENCY RULES 3–4 (2014), https://www.acus.gov/recommendation/retrospective-review-agency-rules (citing criticisms of retrospective review of rules that relies upon individual agencies to reassess their own regulations because it "provides few incentives for ensuring robust analysis of existing rules"); Reeve T. Bull, *Building a Framework for Governance: Retrospective Review and Rulemaking Petitions*, 67 ADMIN. L. REV. 265, 280–82 (2015) (explaining agency officials are invested in existing rules, they are often hamstrung by resource limitations, and may be

president since Jimmy Carter has required executive branch agencies to reexamine existing regulations in light of specified criteria (usually some form of cost-benefit analysis) on either a one-time or a continuing basis.[5] These "lookback" requirements have sometimes mandated agency review of all rules meeting a certain threshold of significance and sometimes required agencies to respond to suggestions from the regulated industries to reexamine particular rules.[6] Similarly, since 1980, the Regulatory Flexibility Act has required all agencies to review on a ten-year cycle existing regulations that have a significant impact on a substantial number of small businesses or small governmental entities with an eye toward repealing or revising rules in light of five factors specified in the statute.[7] Moreover, Congress recently considered legislation that would establish an independent commission to review existing regulations and recommend a set of rules for Congress to repeal by joint resolution on an all-or-nothing basis.[8] All of these prescriptions for retrospective review reflect the assumption that agencies are not already actively engaged in revising

unaware of the interarticulation between their rules and those of other agencies); Michael Mandel & Diana G. Carew, PROGRESSIVE POL'Y INST., REGULATORY IMPROVEMENT COMMISSION: A POLITICALLY-VIABLE APPROACH TO U.S. REGULATORY REFORM 3 (2013), http://www.progressivepolicy.org/wp-content/uploads/2013/05/05.2013-Mandel-Carew_Regulatory-Improvement-Commission_A-Politically-Viable-Approach-to-US-Regulatory-Reform.pdf ("Our regulatory process is not designed to systematically review or remove regulations that become redundant, unnecessary, or outdated.").

[5] *See* JOSEPH E. ALDY, LEARNING FROM EXPERIENCE: AN ASSESSMENT OF THE RETROSPECTIVE REVIEWS OF AGENCY RULES AND THE EVIDENCE FOR IMPROVING THE DESIGN AND IMPLEMENTATION OF REGULATORY POLICY 27 (2014), https://www.acus.gov/sites/default/files/documents/Aldy%2520Retro%2520Review%2520Draft%252011-17-2014.pdf (discussing President Carter's Executive Order 12044, which established criteria for reexamining rules).

[6] *See, e.g.*, *id.* at 27–34 (tracing the use of retrospective review across presidential administrations and their varying requirements); Neil R. Eisner & Judith S. Kaleta, *Federal Agency Reviews of Existing Regulations*, 48 ADMIN. L. REV. 139, 140–43 (1996) (describing the various congressional and executive mandates that have been made to administrative agencies to take part in a rule review process).

[7] *See* 5 U.S.C. § 610(b) (2012) (directing agencies to consider in their periodic review of existing rules: (1) "the continued need for the rule"; (2) "the nature of complaints" regarding the rule; (3) "the complexity of the rule"; (4) the extent of overlap of the rule with other federal, state, or local rules; and (5) the extent of changes in technology or other factors that could affect the rule since the rule was last evaluated).

[8] *See* S. 1683, 114th Cong. (2015) (establishing a Retrospective Regulatory Review Commission to review the Code of Federal Regulations to identify rules that should be repealed to lower the cost of regulation to the economy); *see also Hearing on a Review of Regulatory Reform Proposals Before the S. Comm. on Homeland Sec. & Governmental Affairs*, 114th Cong. 3–4 (2015) (statement of Susan E. Dudley, Director, George Wash. Univ. Regulatory Ctr.) (advocating the use of retrospective review to lower the cost of regulations); ALDY, *supra* note 5, at 39–40 (discussing the merits and demerits of the proposed Regulatory Review Commission).

their regulations in light of real-world implementation experience and changes in the physical, economic, and political environments.

This static view of the rulemaking process also dominates the academic literature, in which many authorities have urged policy makers to devote more resources to formal, proactive, and systematic review of existing regulations.[9] Curiously, however, few scholars have examined the extent to which agencies are already modifying their rules in response to changed circumstances.[10] Beyond citing the Administrative Procedure Act's (APA) requirement that agencies give interested parties "the right to petition for the issuance, amendment, or repeal of a rule,"[11] the leading treatises scarcely mention the informal, reactive processes of revising regulations that agencies employ, much less provide a framework for understanding them. Scholars have mined classic cases involving rule revisions, such as *Motor Vehicle Manufacturers Association v. State Farm Insurance*[12] and *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*,[13] for insights into the standards of review the courts apply in deciding whether to set aside changes in rules based on procedural or substantive considerations, but they have not probed those cases for insights into rulemaking as a dynamic process.

Yet there are sound reasons for believing that the rulemaking process might be a much more dynamic process than commonly understood. To begin with, mistakes are inevitable in coping with the complex and uncertain technical and policy environments in which many rulemaking initiatives play themselves out. Second, scientific, technical, and economic knowledge relevant to rulemaking initiatives can change over time as more and better information becomes available, models improve, and cause-effect relationships become more or less apparent. Finally, a regulatory agency's wellbeing depends on its

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[9] *See, e.g.*, ALDY, *supra* note 5, at 64 (endorsing a more formal scheme of retrospective review); Bull, *supra* note 4, at 269–70 (surveying alternative models of regulatory lookback); Cary Coglianese, *Moving Forward with Regulatory Lookback*, 30 YALE J. REG. ONLINE 57 (2013) (providing recommendations to bolster President Obama's executive order directing agencies to undertake retrospective regulatory review); Cass R. Sunstein, *The Regulatory Lookback*, 94 B.U. L. REV. 579 (2014) (endorsing regulatory lookback).

[10] Authors proposing more formal mechanisms for retrospective review of agency rulemakings give little to no attention to the possibility that agencies are already engaged in rule revisions on their own. *See, e.g.*, Bull, *supra* note 4; Coglianese, *supra* note 9; Sunstein, *supra* note 9. *But see* Lawrence E. McCray, Kenneth A. Oye & Arthur C. Petersen, *Planned Adaptation in Risk Regulation: An Initial Survey of US Environmental, Health, and Safety Regulation*, 77 TECH. FORECASTING & SOC. CHANGE 951 (2010) (exploring how agencies reacted to changed conditions in five case studies).

[11] 5 U.S.C. § 553(e).

[12] 463 U.S. 29 (1983).

[13] 467 U.S. 837 (1984).

regulations remaining current with changing public attitudes and the political preferences of those in a position to influence its actions. Affected parties are presumably not shy about calling outdated or erroneous features of existing rules to an agency's attention.[14] Without some degree of dynamism in these respects, regulators risk becoming ineffective and losing the legitimacy upon which they depend for their survival.

A 1996 article by Neil Eisner and Judith Kaleta may be the only study that explicitly recognizes this need for dynamism. Although the authors' principal concern is with formal requirements imposed by statute or executive order that agencies review their regulations and modify them as appropriate, they also note that "as part of its daily operation, a well-run agency is constantly, 'informally' reviewing its regulations."[15] From their vantage point as attorneys for the Department of Transportation (easily the most prolific rulemaking agency in the federal government), they observe that:

> [D]uring the general operations of the agency, problems with existing rules are identified that may warrant further action. Investigators and others who work with the regulated parties may note a continuing problem in implementing the rules; attorneys may note problems in enforcing, interpreting, or litigating over rules; and accidents, congressional interest, media interest, and other events may result in discussions within an agency that may, in turn, result in a decision to change rules.[16]

Eisner and Kaleta distinguish the "informal" reviews that take place during the day-to-day operations of rulemaking agencies from "formal" reviews required by statute or executive order.[17] In formal or retrospective review, the agency is obliged to revisit important regulations in accordance with specified criteria with an eye toward identifying those rules it should repeal or modify. This must take place regardless of whether the rules have given rise to any problems for the agency or the regulated community.[18] The vast bulk of relevant legal scholarship, including the Eisner and Kaleta article, focuses on the appropriateness and structure of such formal reviews.[19]

In contrast, this Article undertakes an empirical exploration of the little-acknowledged extent to which agencies voluntarily engage in

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[14] *See, e.g.*, *infra* notes 102–03 and accompanying text (identifying the role of stakeholders in prompting revisions in three sets of rulemakings).

[15] Eisner & Kaleta, *supra* note 6, at 146.

[16] *Id.* at 147.

[17] *See id.* at 146–47 (discussing the difference between formal and informal review).

[18] *See id.* at 146 ("[I]t is not necessary that a problem be identified to generate the [formal] review; rather, a review may be conducted simply because its time has come.").

[19] *See supra* notes 9–10 and accompanying text.

the revision and modification of their rules outside of these more formal lookback commands. Our study relies on data drawn from four programs located in two executive branch agencies—the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA)—and one independent agency—the Federal Communications Commission (FCC). The analysis reveals that agencies engage in a great deal of informal review and modification of existing rules, often beginning before their effective dates. Most of the rules in our sample ($N = 182$) were revised at least once and many were revised multiple times over decades ($N = 462$ revised rules). The result is a phenomenon we call "dynamic rulemaking."

The primary purpose of this Article is to cast light on this blind spot in administrative law scholarship and begin a conversation about both the positive and normative implications of a dynamic regulatory state. In the first instance, we develop a conceptual framework for understanding dynamic rulemaking that focuses on the various factors that motivate agencies to revisit final regulations without the stimulus of a statutory directive or executive order. In the second instance, we consider the possible advantages and disadvantages of informal, dynamic rulemaking as an alternative to formal requirements that agencies proactively review their regulations in a systematic way. Much as "fire-alarm oversight"[20] and "problemistic search"[21] can serve the respective interests of Congress and organizational executives, a reactive approach to rule revision may promote administrative efficiency by allowing agencies to allocate limited resources to problems that arise while precluding the need to evaluate regulations that are not "broken." Insofar as they seek to ease regulatory burdens, moreover, formal lookback provisions may be redundant given the prominent role that regulated interests play as a stimulus for dynamic rulemaking. By the same token, however, dynamic rulemaking may overlook important issues and reinforce familiar biases in favor of well-organized groups at the expense of more diffuse public interests.

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[20] *See* Matthew D. McCubbins & Thomas Schwartz, *Congressional Oversight Overlooked: Police Patrols Versus Fire Alarms*, 28 AM. J. POL. SCI. 165, 166 (1984) (contrasting "police-patrol" oversight, which is a proactive and systematic effort to monitor the bureaucracy, with "fire-alarm" oversight, which occurs in reaction to constituent complaints and other problems that are brought to Congress's attention as rules are being implemented).

[21] *See* RICHARD M. CYERT & JAMES G. MARCH, A BEHAVIORAL THEORY OF THE FIRM 169–71 (2d ed. 1992) (explaining that rather than monitor activities proactively and comprehensively, problemistic search is stimulated by and directed towards solving a particular problem).

This potential danger may be reinforced by the fact that changes in rules are often made without notice and comment.

As a result of this empirical effort, we believe that our findings call into question several key assumptions that undergird contemporary lookback reforms. In contrast to the prevailing view that agencies rarely revise rules, our findings reveal that, at least in some quarters of the administrative state, revisions are the rule rather than the exception. Even more important, our data suggest that regulated parties are instrumental in driving many of these adjustments. Consequently, lookback provisions that seek to ease regulatory burdens on overwhelmed regulated parties may be unnecessary in light of the agencies' apparent responsiveness to their concerns through dynamic rulemaking.[22] Indeed, to the extent that rule revisions are disproportionately prompted by high stakes parties, lookback reform efforts should point agencies in the opposite direction. Agencies might be encouraged to identify rules that they have revised in significant ways out of the sightlines of thinly financed stakeholders and the general public.

This Article proceeds in four parts. The first Part discusses the seeming inevitability of rule revisions in the contemporary regulatory state as agency survival tactics. The second Part sets off on an empirical investigation of whether and how agencies revise rules by examining several complete sets of regulations promulgated by FCC, EPA, and OSHA. These findings then provide the grist for a suggested typology of revisions in the third Part of this Article. Given the absence of information on dynamic rulemaking, this conceptual mapping offers a preliminary structure for understanding the breadth and depth of the phenomenon. The final Part takes the findings and analysis from the prior two sections to offer preliminary suggestions for nurturing rule revisions, while also ensuring that agencies revise rules in a transparent and accountable fashion. Although this normative work is necessarily tentative, we hope that it will begin a larger conversation about dynamic processes in administrative law.

I
The Need for Dynamic Regulation

An attorney who had spent twenty years developing rules for the Securities and Exchange Commission (SEC) described her job as a

[22] *See infra* note 133 and accompanying text (describing Executive Order 13610's deregulatory slant and the criticism the Order subsequently faced).

matter of "figuring out what will work . . . [and] . . . what will fly."[23] What she meant in the first instance is that rulemaking requires an agency to resolve empirical issues that are instrumentally related to its program's goals—what might be termed objective policy analysis. What she meant in the second instance is that rulemaking is also a process of defining those goals by accommodating competing interests and fashioning decisions that are politically viable.

Although these interrelated but often competing demands have always been inherent in bureaucratic policymaking, the task of crafting sound rules has become more daunting in recent decades as the result of institutional developments that have added to the technical and political challenges agencies face. Attributable in large part to the expanded use of rulemaking in the modern regulatory state, these changes in executive and legislative demands on agencies have made it more likely that agencies will want to (or have to) revisit prior decisions. The regulatory challenges agencies face are further magnified by the fact that they operate within fluid environments. New technologies, products, and business practices, as well as changing political conditions, can require bureaucrats to modify their policies over time, sometimes incrementally and sometimes rather abruptly.

This Part considers the challenges that agencies face in developing rules that remain up-to-date and effective in a swiftly changing world, and it sets these challenges against scholars' neglect of such issues. Despite the importance of factors that create a need for regulatory change, and with the exception of periodic interest in the effects of presidential turnover,[24] the administrative law literature has been almost silent on both the practice and theory of rule revisions. Yet the pressures on agencies make it evident that some rule revisions will become inevitable if not imperative.

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[23] William F. West, *Inside the Black Box: The Development of Proposed Rules and the Limits of Procedural Controls*, 41 ADMIN. & SOC'Y 576, 593 (2009).

[24] *See* Jack M. Beermann, *Combating Midnight Regulation*, 103 NW. U. L. REV. COLLOQUY 352, 352 (2009) (analyzing the "flurry of regulatory activity" that happens in the final days of an outgoing presidential administration). *See* B.J. Sanford, Note, *Midnight Regulations, Judicial Review, and the Formal Limits of Presidential Rulemaking*, 78 N.Y.U. L. REV. 782 (2003) (analyzing the legality of executive delays on the effective dates for agency regulations promulgated in the final days of an outgoing administration); *see also* CURTIS W. COPELAND, CONG. RESEARCH SERV., RL34747, MIDNIGHT RULEMAKING: CONSIDERATIONS FOR CONGRESS AND A NEW ADMINISTRATION 12–17 (2008), https://www.fas.org/sgp/crs/misc/RL34747.pdf (analyzing legislative proposals to change the "midnight rule" rulemaking process).

A. The Rulemaking Revolution

There was once a near consensus that rulemaking was severely underutilized. Often with the qualification that policy development through ad hoc adjudication could be preferable in certain contexts,[25] administrative law scholars and some judges argued that agencies should employ rulemaking much more frequently because of its fairness to affected interests,[26] its ability to bring a broader range of technical information and analysis to bear on regulatory problems, and its forcefulness and effectiveness in achieving programmatic objectives.[27] Yet if rulemaking was a more holistic approach to implementation, it was precisely this characteristic that had discouraged its use.

Efforts to deal with problems in a comprehensive way are often impeded by the constraints associated with the concept of bounded rationality—by limited information and by the limited capacity of human beings to process information that is available.[28] Rulemaking often involves disputed or complexly interrelated or otherwise unpredictable technical or economic considerations that make it difficult for an agency to define the problems being addressed, to assess the probable effects of proposed solutions to those problems, and to plan for

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[25] These included decisions that affected the rights of only a few or a narrow class of individuals in a substantial way. Some argued that the more rigorous due process afforded by adjudication might be preferable in such cases.

[26] For a discussion of this literature and of the advantages claimed for rulemaking, see, for example, Reuel E. Schiller, *Rulemaking's Promise: Administrative Law and Legal Culture in the 1960s and 1970s*, 53 ADMIN. L. REV. 1139, 1140 (2001), which argues that rulemaking was a sleeker, more efficient and fairer method to developing policy than using the judiciary. *See also* LUBBERS, *supra* note 1, at 123–25 (surveying the advantages of rulemaking); M. Elizabeth Magill, *Agency Choice of Policymaking Form*, 71 U. CHI. L. REV. 1383, 1390–92 (2004) (evaluating the effectiveness of the various policymaking tools administrative agencies have available to them—adopting rules, bringing or deciding a case, or announcing the interpretation of a statute). The use of rulemaking to clarify the meaning of vague statutes was advocated as an antidote to arbitrariness and capriciousness in the application of policy to individuals. In some regulatory contexts, for example, an adjudicatory approach might single out one of many businesses that were engaged in the same practice. Rulemaking could also provide certainty that would allow businesses to plan and could preclude retroactive punishment for practices that businesses might not reasonably have been expected to know were illegal. For a critical discussion of arguments on behalf of rulemaking, see generally David L. Shapiro, *The Choice of Rulemaking or Adjudication in the Development of Administrative Policy*, 78 HARV. L. REV. 921 (1965).

[27] As one author described the frustrated efforts to regulate cigarette advertising through adjudication that eventually led the FTC to adopt a rulemaking strategy: "[T]he Commission found itself putting out brush fires of deception while the inferno raged on." A. LEE FRITSCHLER, SMOKING AND POLITICS 70 (1969).

[28] *See generally* Herbert A. Simon, *Bounded Rationality and Organizational Learning*, 2 ORG. SCI. 125 (1991) (pioneering the idea of bounded rationality that limits the ability of expert organizations to process all information and inputs perfectly; instead a variety of constraints—both economic and human—force them to satisfice or identify the best option in an incremental rather than synoptic way).

future contingencies.[29] Accordingly, attempts to resolve such issues in a comprehensive way run the risk of making big mistakes.[30]

Moreover, rulemaking often takes place in an environment where statutory goals are ambiguous and consensus is lacking, and where agencies must anticipate pressure from the political principals who write their authorizing legislation, control their budgets, and appoint and (in the case of executive branch agencies) can remove their leaders. The risk of making "political mistakes" under such circumstances is directly proportional to the breadth and precipitousness of the agency's actions. Responding to the puzzlement some had expressed over agencies' preference for case by case adjudication, a prominent D.C. Circuit judge suggested that they avoided rulemaking as an impolitic commitment.[31]

Few would contend that rulemaking is underutilized today. The so-called rulemaking revolution of the late 1960s and 1970s was in part voluntary as agencies responded to widespread criticisms of their reliance on case by case adjudication and to heightened pressures to achieve regulatory results. It was also partly mandatory as new legislation prescribed the use of informal rulemaking to address many issues.[32] In fact, some statutes in the expanding areas of health, safety, environmental, and consumer protection regulation required agencies to promulgate rules addressing certain issues by explicit statutory deadlines.[33] These action-forcing provisions were intended to ensure that agencies would "make use of their broad rulemaking powers to engage in creative policymaking in the public interest."[34]

If it was advocated as a fairer and more forceful way of achieving statutory goals, however, the expanded use of rulemaking also led to complaints from the business community and its political allies about the excessive burdens imposed by federal regulations. This backlash in

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[29] Obviously depending on the rule, these range from the collection and evaluation of various kinds of scientific or technical evidence to the consideration of how policy decisions are likely to affect economic and other kinds of human behavior.

[30] *See* Warren E. Baker, *Policy by Rule or* Ad Hoc *Approach—Which Should It Be?*, 22 L. & CONTEMP. PROBS. 658, 659 (1957) ("[T]he agency may not have had sufficient experience with [the industry] to warrant rigidifying its tentative judgment into a hard and fast rule." (citing SEC v. Chenery Corp., 332 U.S. 194, 202–03 (1947))).

[31] *See* J. Skelly Wright, *Beyond Discretionary Justice*, 81 YALE L.J. 575, 578–79 (1972) (explaining how agencies' ad hoc decisionmaking provides flexibility).

[32] *See, e.g.*, ERNEST GELLHORN & RONALD M. LEVIN, ADMINISTRATIVE LAW AND PROCESS IN A NUTSHELL 310–12 (4th ed. 1997) (explaining the APA's informal rulemaking procedures).

[33] *See, e.g.*, Schiller, *supra* note 26 (discussing statutorily required rulemakings that were backed up by mandated requirements).

[34] Bruce A. Ackerman & William T. Hassler, *Beyond the New Deal: Coal and the Clean Air Act*, 89 YALE L.J. 1466, 1474 (1980).

turn resulted in various procedural constraints and oversight requirements designed to restrain an allegedly overzealous bureaucracy. These included institutional developments such as centralized regulatory oversight by the White House, requirements that agencies justify their rules on the basis of cost-benefit analysis, and statutory provisions in some areas that subjected rulemaking to a level of due process that went well beyond the terms of the APA. They have also included calls for retrospective review of regulations.[35]

B. An Increasingly Complex Environment for Rulemaking

This brief overview speaks to a tension that lies at the heart of modern rulemaking. If agencies have adopted rulemaking in recent decades as a more rational and forceful form of administration, it still remains subject to the informational and political constraints on comprehensive policy development that once discouraged its use.[36] Large, complicated rules are apt to contain errors and to be based on information and assumptions that can change over time. To be durable, regulatory policies must be able to correct those errors and be adaptable to a changing environment. Yet existing administrative process provides only limited, mostly informal opportunities for this type of regulatory dynamism.

Certainly the primary target of most regulation—industry—undergoes continuous and sometimes dramatic change with the acceleration of technological innovations and the resultant development of new products, new services, and new ways of doing business. Rules that constrain industry operations must be sensitive to these advances and shifts. Whereas television broadcasting once involved the transmission of signals from local towers to home antennae and was dominated by three networks, for example, today it includes satellite TV, cable TV, and a multitude of networks and channels.

The need for adaptive rulemaking is amplified further by the analytical and political developments over the last few decades that were intended to make the process more responsive to affected interests, more objective and comprehensive in its assessment of policy effects, and more accountable to each of the constitutional branches of gov-

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[35] *See generally* Daniel A. Farber & Anne Joseph O'Connell, *The Lost World of Administrative Law*, 92 TEX. L. REV. 1137, 1140–41 (2014) (describing this new world of administrative law that replaces the "lost world" of administrative process that operated without these additional procedural requirements).

[36] *Cf.* GELLHORN & LEVIN, *supra* note 32, at 312 (describing the drawbacks within the informal rulemaking process).

ernment.[37] For their part, interest groups have proliferated and are often vigorous participants that can engage all institutions—the courts, Congress, and the President—simultaneously to advance their goals in the rulemaking process.[38]

Congress obviously plays a critical role in rulemaking through its delegation of authority to agencies and through its imposition of various procedural constraints that determine how agencies must exercise that authority.[39] The legislature also influences rulemaking informally through committee-based oversight. Although the role Congress plays in rulemaking through legislation and oversight sometimes reflects legislators' own policy views, it also frequently reflects the influence of groups with a direct stake in the process. Given the legislature's decentralized structure coupled with the weakening of the seniority system, the diversity of the constituents it represents, and the increased polarization of political dialogue, it is also not surprising that its influence can add to the complexity of the rulemaking environment.[40]

The President's role in administrative policymaking has also expanded in several ways over the last few decades. The White House exercises significant indirect influence over what agencies do through the appointment of roughly seven hundred political executives who manage the line bureaucracy on the President's behalf, and this pro-

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[37] *See generally* Farber & O'Connell, *supra* note 35, at 1154–73 (discussing these changes in the new administrative law).

[38] *See generally* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT (Daniel Carpenter & David A. Moss eds., 2014) (examining how stakeholders use a wide variety of procedures made available through the courts, agencies, Congress, and Executive Branch to influence regulation).

[39] Agencies must adapt rapidly to the widely fluctuating political pressures from a Congress that remains deeply divided ideologically between advocates and critics of federal regulation. The oversight process is especially apt to be a free-for-all in areas of administration that are politically salient, sometimes involving multiple committees and subcommittees in both chambers. In a 1991 study, Richard J. Lazarus identified more than one hundred committees and subcommittees in the House and Senate that had held oversight hearings for EPA. *See* Richard J. Lazarus, *The Neglected Question of Congressional Oversight of EPA:* Quis Custodiet Ipsos Custodes *(Who Shall Watch the Watchers Themselves)?*, 54 L. & CONTEMP. PROBS. 205, 211 (1991). Cindy Williams observes a similar fragmentation with regard to oversight of the Department of Homeland Security. *See generally* CINDY WILLIAMS, STRENGTHENING HOMELAND SECURITY: REFORMING PLANNING AND RESOURCE ALLOCATION 31–34 (2008), http://www.businessofgovernment.org/sites/default/files/Strengthening%20Homeland%20Security.pdf.

[40] *See* Lazarus, *supra* note 39, at 236–37 (describing legislators' interest in maintaining a complicated regulatory structure). *See generally* John H. Aldrich, Brittany N. Perry & David W. Rohde, *Richard Fenno's Theory of Congressional Committees and the Partisan Polarization of the House*, *in* CONGRESS RECONSIDERED 193 (Lawrence C. Dodd & Bruce I. Oppenheimer eds., 2013) (summarizing the changing dynamics and the increasing polarization in Congress over the years).

cess has only become more centralized under recent administrations.[41] As mentioned, the White House also influences rulemaking in a more direct way through a process that allows the Office of Management and Budget (OMB) to screen significant regulations before they are proposed and again before they are finally promulgated. Although available evidence suggests that requests by the Executive Office for agencies to issue specific rules are highly selective,[42] the direct and anticipatory effects of reactive oversight by the President in discouraging or altering agency initiatives appears to be much more substantial.[43]

The environment of rulemaking has also become more complex and subject to swift changes as the bureaucratic policymaking space within the Executive Branch itself has become more crowded. It is now more likely that decisions in one area will impinge on other areas of administration, and modifications and adjustments may also be needed to address these conflicts.[44] This pressure is reflected in part in the Office of Information and Regulatory Affairs's (OIRA) important

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[41] *See, e.g.*, David E. Lewis, *The Contemporary Presidency: The Personnel Process in the Modern Presidency*, 42 PRESIDENTIAL STUD. Q. 577, 578–79 (2012) (discussing the number of appointments required in the Executive Branch (3000 to 4000 positions, 25% of which require Senate confirmation) and highlighting the increased control over appointments by Presidents over time).

[42] *See* William F. West & Connor Raso, *Who Shapes the Rulemaking Agenda? Implications for Bureaucratic Responsiveness and Bureaucratic Control*, 23 J. PUB. ADMIN. RES. & THEORY 495, 504 (2013) (providing a quantitative report analyzing selectivity of executive office requests for agencies to issue specific rules); *see also* Lisa Schultz Bressman & Michael P. Vandenbergh, *Inside the Administrative State: A Critical Look at the Practice of Presidential Control*, 105 MICH. L. REV. 47, 49, 52–62 (2006) (discussing the "presidential control" model of agency decisionmaking, and suggesting that it paints too superficial a picture).

[43] Insiders cite this anticipatory effect as the primary explanation for the fact that the rules returned or withdrawn pursuant to regulatory review increased dramatically in the first year of the George W. Bush Administration and then reverted to Clinton-era numbers. The Office of Management and Budget's (OMB) reliance on cost-benefit analysis as a criterion for regulatory review adds to the empirical burden agencies face, and the well-documented responsiveness of OMB to input from interest groups and other agencies adds to the complexity of the rulemaking environment. Erik D. Olson, *The Quiet Shift of Power: Office of Management & Budget Supervision of Environmental Protection Agency Rulemaking Under Executive Order 12,291*, 4 VA. J. NAT. RESOURCES L. 1, 4 (1984) ("[U]ndisclosed industry lobbying of OMB in some cases appears to influence OMB's position on EPA's rules under review."). The familiar depiction of the President as a "unitary actor" notwithstanding, *see, e.g.*, Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2339 (2011), reactive oversight often subjects agencies to multiple and conflicting viewpoints from within the Executive Office of the President (EOP), the Office of Advocacy in the Small Business Administration, and other departments. *See, e.g.*, Bressman & Vandenbergh, *supra* note 42, at 69 (referencing these interagency conflicts and the complicated role that OIRA plays in mediating them).

[44] Hugh Heclo recognized this early on in arguing that broader, more eclectic, and more fluid "issue networks" had supplanted "iron triangles" as a descriptive model for

role as a "convenor" of interested bureaucratic actors to ensure that the positions taken in one agency's proposed or final rule are in accord with the preferences and positions of the other federal agencies.[45]

These cumulative changes in information, technology, and industry practices over time, coupled with the growing number of parties involved in the process, would seem inevitably to lead to heightened demands for adjustments to existing regulations. Indeed, in many settings it is not difficult to imagine an agency facing considerable pressure to revise a rule from a number of different sources, including companies that remain opposed to the regulation, companies that find themselves covered by a regulation they never thought would apply to them, companies that find compliance difficult or impossible and therefore demand exceptions, beneficiaries who discover that the regulation does not perform as effectively as the agency predicted, newly empowered political actors motivated by disgruntled stakeholders after a power-shifting election, and others who consider themselves adversely affected by the regulation. In addition, some agencies operate in such rapidly changing technological environments that one would expect them to be adjusting their rules periodically to prevent entire programs from becoming obsolete.[46]

Presented with a regulation that appears out of step with newly acquired scientific and technical understandings or with the external policymaking environment, an agency must rescind the rule and promulgate a new one from scratch, revise the existing rule in one or more regards, or do nothing and deal with the consequences of an obsolete or irrelevant policy.[47] An agency exercising the first option will encounter all of the above-described analytical and political challenges and institutional constraints, which some scholars have associated with the "ossification" of the rulemaking process.[48] One might

bureaucratic policymaking. Hugh Heclo, *Issue Networks and the Executive Establishment*, *in* THE NEW AMERICAN POLITICAL SYSTEM 87, 102 (Anthony King ed., 1978).

[45] *See, e.g.*, Cass R. Sunstein, Commentary, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1872 (2013) (discussing OIRA's role in facilitating interagency discussions over agency-specific rules that affect other agencies).

[46] For example, agencies like the National Oceanic and Atmospheric Administration (NOAA)'s National Marine Fisheries Service, based on plans created by Regional Fisheries Management Councils, are required by statute to establish annual take limits. *See* 16 U.S.C. § 1852(h)(6) (2012).

[47] An agency will have difficulty adjusting the substance of an existing rule with new guidance or targeted enforcement actions premised on focused enforcement positions; instead the change will need to be made to the text of the rule itself.

[48] *See generally* Thomas O. McGarity, *Some Thoughts on "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385 (1992) (discussing the evidence and causes of ossification of the informal rulemaking process); Richard J. Pierce, Jr., *Seven Ways to*

conclude that the second option would invoke precisely the same constraints, because it is well settled as a legal matter that revising a rule requires the same notice and comment procedures as are required for promulgating the rule in the first instance.

The Administrative Procedure Act, however, does provide a means for agencies to make some adjustments to existing rules without invoking the elaborate requirements of notice and comment, making the second option—revising rules—often the most attractive alternative. Under the APA's "good cause" exception, agencies may promulgate (or revise) rules without notice and comment if the changes are minor and noncontroversial or if delaying a rule to solicit comments would be contrary to the public interest.[49] The limited case law and lack of conceptual guidelines for utilizing this good cause exception make it a particularly attractive way for agencies to adapt rules to changing times expeditiously and without draining their scarce resources.

Thus, revising rules may be a relatively straightforward option when stakeholders, political officials, or the agency itself determine that changes need to be made to a rule to correct errors, to address unanticipated effects, or to keep up with the times. To adjust the rule, agencies can engage in notice and comment rulemaking to make necessary revisions. Alternatively, in some cases agencies can revise rules without undertaking lengthy analyses and data gathering, without undergoing OMB and interagency review, and without any serious threat of judicial review.

While the pressures and incentives discussed above lead us to expect that agencies are likely to engage in at least some revision of previously promulgated rules, they tell us very little about how agencies actually respond in practice. It is that more grounded world of revised rules to which we now turn.

II

An Empirical Investigation of Dynamic Rulemaking

Assuming that agencies often encounter pressures to change rules in light of the increased fluidity and complexity of the regulatory environment, how do they respond to these pressures? Is there a world of dynamic rulemaking or does the formalized nature of notice and com-

Deossify Agency Rulemaking, 47 Admin. L. Rev. 59 (1995) (evaluating the potential of doctrinal changes for deossifying the informal rulemaking process). *But see* Jason Webb Yackee & Susan Webb Yackee, *Testing the Ossification Thesis: An Empirical Examination of Federal Regulatory Volume and Speed, 1950–1990*, 80 Geo. Wash. L. Rev. 1414 (2012) (questioning the strength of evidence of ossification).

[49] 5 U.S.C. § 553(b)(3)(B) (2012).

ment discourage agencies from adjusting rules? And if agencies are in fact revising their rules, how do these revisions comport with the values of transparency, balanced responsiveness, and reasoned and factually informed decisionmaking that are central to administrative law?

To gain purchase on these practical questions, we conducted an empirical investigation of rule revision activity in three different agencies over four complete rulemaking programs. While the findings for these programs raise more questions than answers, the findings do unequivocally answer at least the initial question of whether agencies revise rules. They do. All three of the agencies revised the majority of their rules in our sample, often several times. Yet the answer to the second question—regarding the accountability and procedural integrity of these revisions—is less clear. Our more specific findings are detailed below.

A. Methods

Rather than sample revised rules randomly across the *Federal Register*, the basic design of our study examines all of the revised rules in four discrete regulatory programs. This approach does limit the representational features of our findings; on the other hand, it provides agency-specific information that allows for richer comparisons between different areas of regulation.

The three agencies selected for study—the Environmental Protection Agency (EPA), Federal Communications Commission (FCC), and Occupational Safety and Health Administration (OSHA)—were identified in part because they involve different sets of participants and employ different rulemaking procedures.[50] Thus, while each of these agencies promulgates rules through informal rulemaking, the agencies operate in quite different regulatory environments.

Within each agency we then selected one or more specific programs that varied in their technicality and complexity. See Figure 1.[51]

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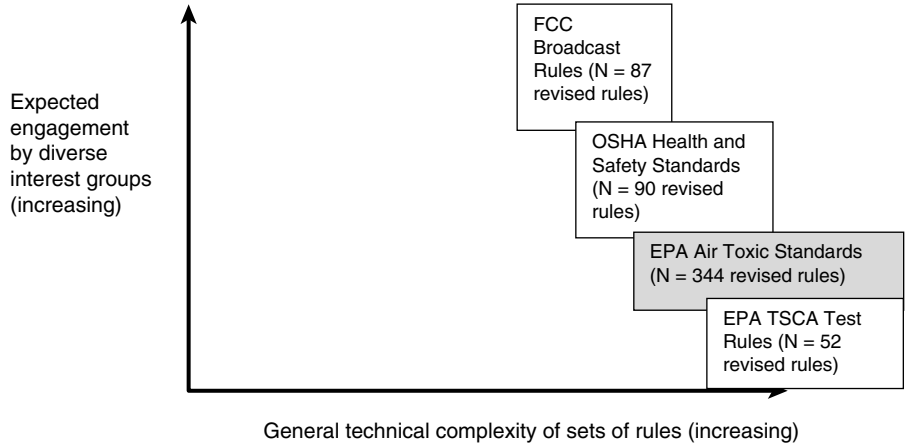
[50] For example, if objections are filed to a proposed rule, OSHA is statutorily required to hold a hearing. 29 U.S.C. § 655(b)(3) (2012). FCC adopts more formal processes for rulemakings—like regulating communications with the agency as ex parte contacts. 47 C.F.R. pt. 1, subpt. H (2015) (containing rules regulating "ex parte presentations in Commission proceedings"). EPA, by contrast, tends to engage with participants throughout the rulemaking life cycle informally, including before the proposed rule. *See, e.g.*, Wagner et al., *supra* note 2, at 124–28 (discussing the extensive communications between the Agency and stakeholders before the publication of proposed rules for ninety air toxics emission standards).

[51] The placement of each set of rules is purely qualitative and based on our collective sense of how the agency rules compare with one another as a relative matter. The two axes

Specifically, in OSHA, we examined two complete groups of worker safety regulations: one governing standards for exposure to toxics and a second involving more acute harms from machinery and workplace conditions.[52] One FCC regulatory program selected for study consisted of a set of relatively technical broadcast rules.[53] The EPA program consisted of the highly technical test rules promulgated under the Toxic Substances Control Act (TSCA), which requires added testing of individual chemicals or chemical families.[54] We also included more limited EPA data, collected primarily from a previous study, on revisions to technology-based standards promulgated for air toxics under the Clean Air Act.[55]

FIGURE 1. A CONCEPTUAL MAP OF DIFFERENCES IN THE SETS OF RULES IN THIS STUDY



The mix of agencies and programs selected for study covers a range of functions and policymaking environments, as defined by the political forces with which they must contend and the technical complexity of their policy decisions. For example, whereas OSHA and FCC rulemaking often involves conflict between well-organized and well-represented interests, the revision of EPA toxicity testing rules and hazardous air pollutant rules is more apt to occur in a unidimensional environment that is dominated by industry groups without

that position the diversity of engagement against the technicality of the rules is drawn from William T. Gormley, Jr., *Regulatory Issue Networks in a Federal System*, 18 POLITY 595, 600, 607 (1986).

[52] 29 C.F.R. pts. 1910, 1926 (2014). Most but not all sections of parts 1910 and 1926 were relevant to this study.

[53] 47 C.F.R. pt. 73, subpts. E, G (2014).

[54] 40 C.F.R. pt. 799, subpt. B (2014) (providing a list of chemicals).

[55] 40 C.F.R. pt. 63.

much input from diffuse beneficiaries of regulation. The EPA rules selected for study also tend to be more technically complex than FCC and OSHA safety rules.

In any type of reconnaissance work where little is known in advance about the regulatory terrain, it is difficult to extrapolate beyond the specific rules that are subject to study. We believe, however, that while our selection of four discrete programs necessarily sets outer bounds on what our study might suggest about agencies that have little in common with the FCC, OSHA, and EPA programs—for example, the Nuclear Regulatory Commission or various benefits programs such as those administered by the Department of Veteran Affairs—our data nevertheless provide preliminary insights into an important and varied area of federal rulemaking practice.

After selecting the discrete regulatory programs, we traced the lineage of all of the *Federal Register* rules underlying the *Code of Federal Regulations* (CFR) sections using both Westlaw and the CFR to find all of the subsequent "revisions." (See Appendix for a more detailed explanation of the methods.) For purposes of this study, a "revised" rule is a final, published rule that modifies, adds to, or retracts some feature of an originating or "parent" rule in our database.[56] Due to challenges associated with accessing historical agency docket indices supporting rules, however, the study is limited in coverage and scope to final rules promulgated after the mid-1970s.[57]

Once we acquired the universe of rules for our dataset, trained research assistants extracted information on each revised rule concerning its nature, its impetus, its length and significance, and its provisions for input by affected interests. We also conducted three in-depth case studies of small, medium, and large revised rules in each

[56] Notices of proposed rulemakings and withdrawals of proposed rules fall outside of the methods, as do other forms of agency decisionmaking (e.g., guidance documents, policy statements, and adjudications). Indeed, these choices and other methodological choices that arose in the course of the study (see conventions in the Appendix, for example) serve to spotlight the fact that even simple administrative concepts, including the definition of a rule, can be both complicated and ambiguous. *See also* GOV'T ACCOUNTABILITY OFFICE, AGENCIES COULD TAKE ADDITIONAL STEPS TO RESPOND TO PUBLIC COMMENTS 14 (2012), http://www.gao.gov/assets/660/651052.pdf (noticing similarly that "[a]cross the . . . rules in our sample without an NPRM, agencies used 109 distinct terms, many of which had only slight wording variations within a broad category, to identify the rulemaking action"). These factors would also seem likely to complicate retrospective review to the extent such requirements assume that rules are both discrete and static.

[57] Both OSHA and FCC rules included some CFR sections that were promulgated prior to 1970. We limited our study only to the revisions of these older rules—reaching only back to the mid-1970s and no further. Since this methodological decision cuts against a hypothesis of abundant revisions, its biasing effect serves only to understate our findings.

agency program.[58] The case studies are relatively long and can be accessed through links in the footnotes. These analyses supplement the aggregate quantitative data in important ways that become more evident in the section that follows.

B. Findings

Our investigation begins with an inquiry into the extent to which rules are revised. We then gather additional basic information about the nature of the revisions to understand more about agency practice.

1. Do Agencies Revise Their Rules?

Our first question was simply: *Do agencies revise their rules despite the various impediments to rulemaking discussed in Part I?* The aggregate data in our study unequivocally answer this question in the affirmative. Seventy-three percent of the 183 rules in the regulatory programs we examined were revised by the agency at least once and typically multiple times.[59] Although the percentages for EPA's two programs were significantly higher than those for OSHA and FCC, all three agencies revised a majority of their parent regulations in our sample. See Figure 2 below.

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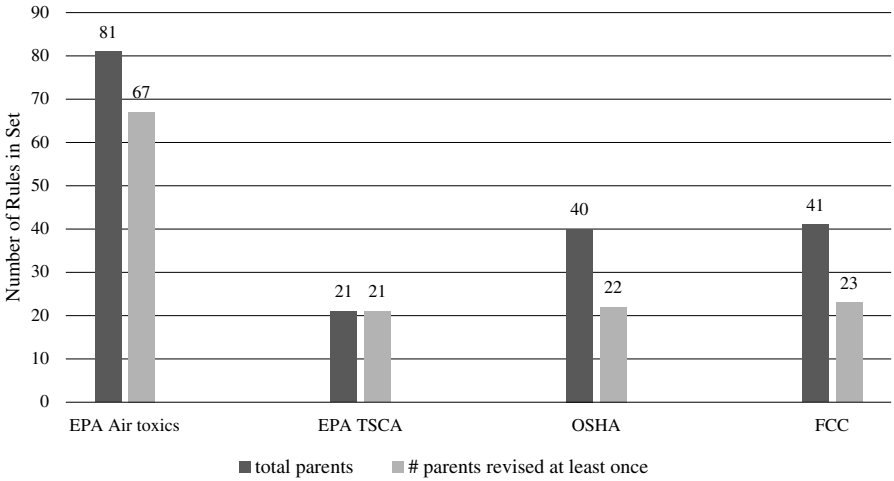
[58] Thomas McGarity, Wendy Wagner & William West, EPA Air Toxics Rules (2016) [hereinafter EPA Air Toxics Rules] (on file with the N.Y.U. Law Review), http://www.nyulawreview.org/sites/default/files/McGarityWagnerWest-2016-EPAAirToxicsRules.pdf; Thomas McGarity, Wendy Wagner & William West, EPA Air Toxics Rules (Large Rule: Secondary Aluminum) (2016) [hereinafter EPA Air Toxics Rules (Large Rule: Secondary Aluminum)] (on file with the N.Y.U. Law Review), http://www.nyulawreview.org/sites/default/files/McGarityWagnerWest-2016-EPAAirToxicsRulesLargeStudy.pdf; Thomas McGarity, Wendy Wagner & William West, FCC Cases (2016) [hereinafter FCC Cases] (on file with the N.Y.U. Law Review), http://www.nyulawreview.org/sites/default/files/McGarityWagnerWest-2016-FCCCases.pdf; Thomas McGarity, Wendy Wagner & William West, OSHA Case Studies (2016) [hereinafter OSHA Case Studies] (on file with the N.Y.U. Law Review), http://www.nyulawreview.org/sites/default/files/McGarityWagnerWest-2016-OSHACaseStudies.pdf; Thomas McGarity, Wendy Wagner & William West, TSCA Test Rules (2016) [hereinafter TSCA Test Rules] (on file with the N.Y.U. Law Review), http://www.nyulawreview.org/sites/default/files/McGarityWagnerWest-2016-TSCATestRules.pdf. The case studies were selected—choosing essentially at random by a rule that fell in the bottom third of parent rules with revision activity (usually one revision that did not involve comment), a rule that fell in the middle of the stack based on the same criteria, and one near the top in terms of the extent of revision activity. McGarity, West, and Wagner each wrote up several of the case studies by reading through all of the *Federal Register* publications and at times consulting extraneous material.

[59] This is a ratio of the total number of revisions for all four sets of rules relative to the total number of parent rules (including those that were not revised).

FIGURE 2. REVISION ACTIVITY ACROSS AGENCIES AND RULES



Since the initial rules in our sample dated only to the mid-1970s, some of those designated as "parents" for purposes of the study were themselves rule revisions. Although this did not apply to EPA rules, nearly half of the parents in the OSHA and FCC datasets were revisions of earlier regulations.[60] This observation suggests that the overall rate of 73% may significantly understate the actual frequency with which the rules in our study were revised.

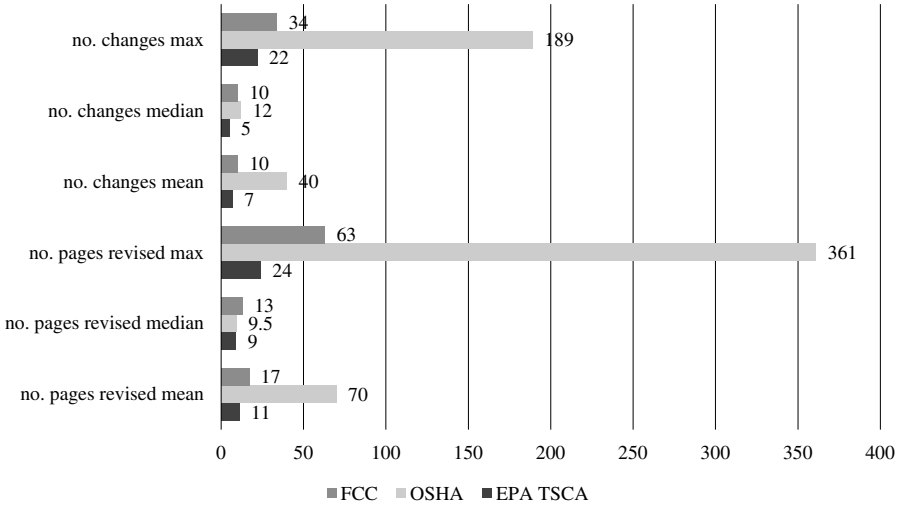
The extent of revision activity is even more striking when viewed in relation to all of the published "final" (including final revised) rules in our database. Although many were minor adjustments, the revised rules outnumber the original parent rules by a factor of 2.5 to 1 if each published final rule is counted as equal. (All of these rules are in final form; none are proposed rules, known as notice of proposed rulemakings or NPRMs.) Thus, there were 462 revised final rules in our database that originated from an initial list of 183 parent rules.[61]

[60] For FCC, 42% of the parent rules that were revised were themselves revisions of early rules. For OSHA, nearly all of the parent rules that were revised were themselves revisions of initial consensus standards, which, however, were promulgated in a single proceeding in a hurried fashion under a tight statutory deadline and did not represent the Agency's independent judgment. For that reason, the initial revisions were in reality the Agency's initial attempt to address the subject matters of those rules. *See, e.g.*, THOMAS O. MCGARITY & SIDNEY A. SHAPIRO, WORKERS AT RISK 37 (1993) (describing OSHA's hurried promulgation of national consensus standards).

[61] If a revised rule altered more than one parent rule (for example a method for testing mice that applied to multiple test rules under TSCA), it was counted as a single revision. Since one of the null hypotheses being tested was that agencies do not revise rules often, we erred on the side of undercounting revision activity.

In addition to the extensive revision activity in all three agencies, our data reveal considerable variation across agencies. In EPA's case, we found a high probability of some type of revision to every final rule. All of EPA's TSCA parent test rules were revised at least once, and only fourteen out of 102 parent rules in the air toxics program were not revised. This yields an overall revision rate of nearly 90% for EPA's parent rules in this study. By contrast, OSHA revised only a little more than half of its parent rules. Yet although a thorough examination of the issue would require a more systematic qualitative analysis, one should note that OSHA's revisions could be quite significant once it opened the door to change. In several cases these revisions went far beyond the scope and size of the parent. In one, for example, OSHA dedicated 361 total pages to the published revisions of the original rule, making 189 total changes over time. See Figure 3.

FIGURE 3. EXTENT OF REVISION ACTIVITY PER REVISED RULE



FCC also revised its rules slightly more than half the time. The extent and significance of its revisions were not as great as OSHA's as measured by number of changes or pages of revisions. (These reached a maximum of thirty-four changes over the course of the revised rules and totaled sixty-three pages.) In the case studies of revised rules, however, the changes FCC made appeared to be quite significant.[62]

[62] *See* FCC Cases, *supra* note 58. Both the medium (financial interest and syndication rule) and large (low power FM) case studies of FCC revisions involved substantive amendments that not only were subjected to notice and comment, sometimes several times, but attracted the attention of a variety of stakeholders who raised many specific issues and concerns and filed petitions requesting more changes. These case studies did not

Furthermore, the difference in revision rates between FCC and EPA is mitigated by the aforementioned fact that our data only extend back to the mid-1970s. Unlike EPA, a significant number of FCC rules categorized as parents in our study were revisions themselves.

2. *What Kind of Revisions Are the Agencies Making?*

The observation that revisions are extremely common if not the norm suggests a second level of inquiry into what this activity entails in substantive and procedural terms. *What kinds of revisions are the agencies making and are the revisions major? If so, do they engage the public?* To understand more about their character in these regards, each revision was coded with respect to whether it involved some form of notice and comment or other publicized notice and to how the agency characterized its significance.

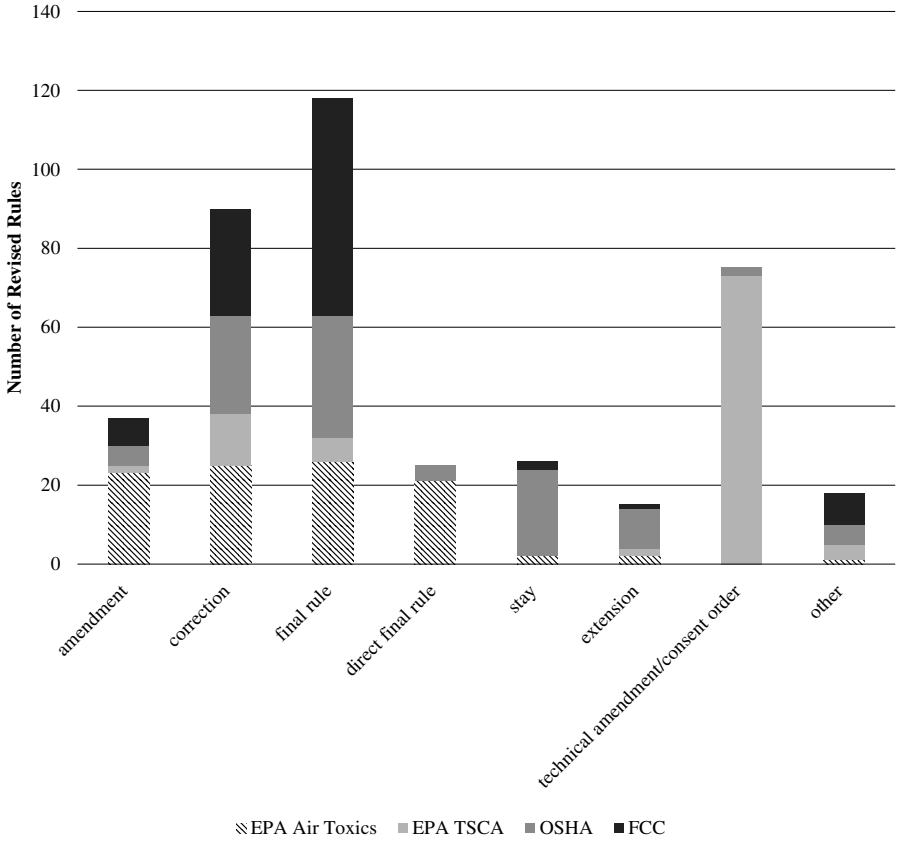
a. Types of Revisions

Agencies label their revisions differently and perhaps inconsistently, but overall they range from simple corrections to technical amendments to more radical overhauls of central features of the original rule.[63] Figure 4 displays the types and relative frequency of revision activity as characterized by the agencies in our study. In most cases the agencies neither articulated nor referenced the underlying conceptual and/or legal framework for placing a revised rule in one category rather than another.

simply involve minor adjustments or corrections, then, but involved important changes to the substance of FCC's rules. Even the small (subscription television rule) case study involved a rule revision that was significant enough to be subjected to notice and comment and was promulgated in response to a court decision on a related decision regarding FCC's classification of "broadcasting" activities. FCC Cases, *supra* note 58, at 1.

[63] The *Federal Register Handbook* lists twelve and fourteen examples of "typical captions" that agencies use to describe proposed and final rules, respectively, but it does not provide definitions of those actions. It also notes that "others are possible." NAT'L ARCHIVES AND RECORDS ADMIN., OFFICE OF THE FED. REGISTER, FEDERAL REGISTER DOCUMENT DRAFTING HANDBOOK: OCTOBER 1998 REVISION 1-7, 2-7 (1998).

FIGURE 4. AGENCIES' CHARACTERIZATION OF REVISIONS



The largest set of revisions was characterized as "final rules." As discussed below, most of these were relatively significant additions, modifications, or other changes to the prior rule and provided for notice and comment. Indeed, perhaps because they were often substantial undertakings, the titles of these "final rules" sometimes offered no signal that the agency was in fact revising an existing rule. As Figure 4 indicates, the agencies varied in the extent to which they deployed these revisions. Very few of the EPA's TSCA revisions were promulgated as significant revisions; on the other hand, nearly half of the FCC's revisions were promulgated as "final rules."

The second most significant set of revisions consisted of those that were entitled "corrections." All of the agencies appeared to use "corrections" at roughly the same rate to make seemingly minor adjustments to the parent rule. In the course of investigating some of these corrections in our case studies, we discovered that many were truly minor. In one such example, OSHA made a single correction to

a typographical error, changing an "of" to an "or" in a table.[64] Revisions that were classified as corrections were not always so trivial, however. In another, OSHA changed a "should" to a "shall" for its safety requirements governing certain concrete operations.[65] Although the agency characterized this change as a response to a "technical error," it apparently had the legal effect of transforming a voluntary standard (or guideline) into a mandatory requirement for lift-slab operations.[66] Another substantive change that was labeled as a technical correction involved an asbestos standard in which OSHA initially indicated it would allow disposable respirators but then removed that option.[67] There were also cumulative corrections that together might constitute more significant changes in some of EPA's corrections to air toxics standards. In a Secondary Aluminum direct final rule, for example, EPA made eight separate changes to address problems or ambiguities that had arisen with the standard and its requirements.[68]

Beyond the "corrections" category, we observed differences between the types of revisions that the agencies made. As compared with the other agencies, OSHA made more liberal use of "administrative stays" (22%) and "extensions" (10%) within its revisions. Another unique approach was EPA's use of "technical amendments/consent orders" (73%)—promulgated as "interim final rules"—in making revisions.[69] These were uniformly revisions that resulted from EPA's informal negotiations with manufacturers. Such agreements were memorialized in letters, usually well before the changes were

[64] Occupational Exposure to Formaldehyde, 54 Fed. Reg. 31,765 (Aug. 1, 1989) (to be codified at 29 C.F.R. pt. 1910) ("In rule document 80-16439 beginning on page 29545 in the issue of Thursday, July 13, 1989, make the following correction: On page 29456, in Table 1, in the first column, in the heading, in the second line, 'of' should read 'or'.").

[65] OSHA Case Studies, *supra* note 58, at 2.

[66] *Id.* (explaining in rule correction that OSHA never promulgates regulations using the word "should" and instead intended for the verb to read "shall," and moreover, because this was an inadvertent wording error, the Agency argued that it had good cause to make the change since public comment was "unnecessary").

[67] OSHA Case Studies, *supra* note 58, at 8, 10 (adding the phrase "other than a disposable respirator" and describing this change as a "technical" amendment even though it arguably makes the legal standard more stringent).

[68] National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, 69 Fed. Reg. 53,980, 53,981–82 (Sept. 3, 2004) (to be codified at 40 C.F.R. pt. 63). Because the changes in this direct final rule are so technical (e.g., altering the units of measurement and variables in equations) it is difficult to determine the significance of the changes or whether they are primarily corrective as opposed to creating substantive changes of potential importance. *See also* EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 4 (describing correction to internal inconsistencies without publishing an NPRM nor eliciting objections).

[69] Except for one FCC rule that is included in the "other" category, these EPA consent orders were the only interim final rules in our dataset.

published in the *Federal Register* in an annual reporting of "technical amendment/consent orders."[70] In fact, EPA generally published only the new or changed text (individual words, sentences, or phrases) to the former CFR rule in the *Federal Register*, with no explanation in terms of the implications of the revision or why it was made. Pursuant to an agreement with chemical manufacturers, for example, the agency noted in one case that "[i]n the mouse micronucleus cytogenetics assay, EPA approved the use of a single exposure of 6 hours with three sampling times in the testing regimen for tetrafluoroethene and vinylidene fluoride."[71] The nature and significance of this change to the prior test—or even an explanation of what the prior test involved—is not provided.

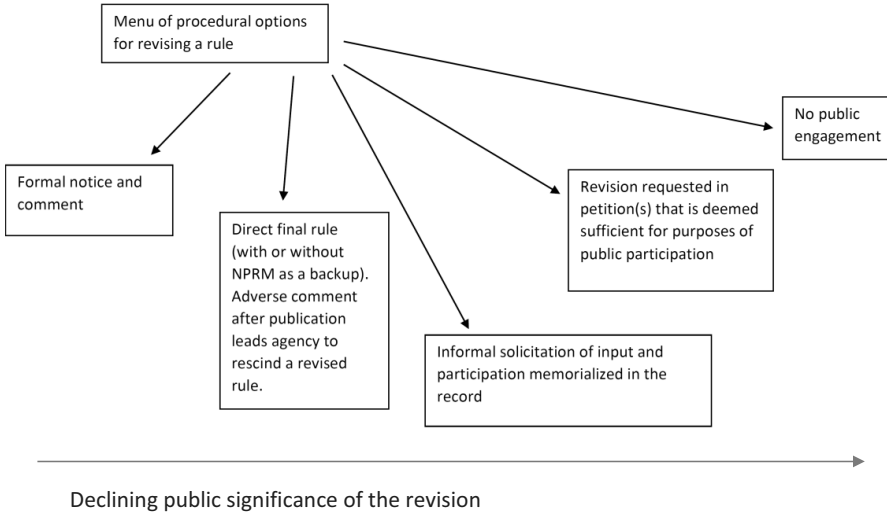
b. Role of Public Comment and Other Forms of Participation

Variation in the types of revisions leads to even more legally pressing questions about the extent to which the revised rules were subjected to public participation. One might hypothesize that the agency's decision about whether and how to include public comment signals its view of the significance of the revision, at least in a crude way. The graphic below depicts an idealized version of the options the agency could consider with respect to the need for notice and comment as determined by the expected significance of the change. See Figure 5.

[70] *See, e.g.*, TSCA Test Rules, *supra* note 58, at 1 (noting how revisions to final test rules are often preceded by agreements with manufacturers that moot the final rule once published since the tests have already been run).

[71] Technical Amendments to Test Rules and Consent Orders, 54 Fed. Reg. 27,352, 27,353 (June 29, 1989).

FIGURE 5. GENERAL OPTIONS FOR ENGAGING THE PUBLIC IN THE REVISION OF A RULE



It is important to note that each of the categories to the right of the "formal notice and comment" box would require some "good cause" justification by the agency under the terms of the APA.[72] Absent an emergency or other circumstances rendering public comment "impracticable," this would generally encompass a showing that the formal participation is "unnecessary" (encompassing a trivial or minor amendment) or "contrary to the public interest."[73] Both exceptions apply to rules in which the public presumably has little interest, but they leave some room for agencies that are so motivated to frame changes in highly technical and complicated terms that mask their deregulatory effects.[74]

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72 5 U.S.C. § 553(b)(3)(B) (2012) (providing an exception to notice and comment under the APA "when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest"). Ellen Jordan quotes from the legislative history, which offers further insights about the meanings of these terms. "Unnecessary" was intended to exempt "minor" or "technical amendment[s]" in which the public is typically not interested, and "contrary to the public interest" occurs when the procedures might get in the way of the agency and yet the general public is not terribly interested. Ellen R. Jordan, *The Administrative Procedure Act's "Good Cause" Exemption*, 36 ADMIN. L. REV. 113, 118–19 (1984) (quoting S. Doc. No. 79-248, at 200, 258 (2d Sess. 1946)); *see also* Connor Raso, *Agency Avoidance of Rulemaking Procedures*, 67 ADMIN. L. REV. 65, 120–25 (2015) (discussing the challenges Congress faces in passing rulemaking procedures that constrain agency discretion).

73 5 U.S.C. § 553(b)(3)(B).

74 This possibility runs through debates on identifying normative guides for the courts' application of the "good cause" exception. *Cf.* Ronald M. Levin, *More on Direct Final*

Despite the agencies' frequent use of the good cause exception,[75] the courts have refrained from providing rigorous oversight of the practice or from developing clear standards for its application.[76] Inconsistencies in the limited caselaw that is available have led to what Professors Hickman and Thomson describe as a "muddle" in the judicial review landscape.[77] While courts do generally agree that technical and minor corrections will satisfy the "unnecessary" exception,[78] they vary with regard to whether substantive but still modest revisions to rules require notice and comment.[79] For example, some courts might credit an agency's solicitation of post-promulgation participation or note the limited scope of the rule in undertaking an assessment of whether notice and comment was required; other courts might not consider these alternative avenues for engagement.[80] Similarly, some courts have required that an agency's indefinite extension of effective dates be subject to notice and comment rulemaking, whereas others

Rulemaking: Streamlining, Not Corner-Cutting, 51 ADMIN. L. REV. 757 (1999) (defending the position that agencies should apply the "good cause" exception to rules that are of little public interest, codified in an Administrative Conference of the United States (ACUS) recommendation to allow direct final rules to take effect unless agencies receive at least one significant objection); Lars Noah, *Doubts About Direct Final Rulemaking*, 51 ADMIN. L. REV. 401 (1999) (raising questions about concluding a rule is "minor" simply because the public acquiesces). For a more general discussion of how agencies can frame their rules in ways that affect who can monitor them, see Jacob E. Gersen & Anne Joseph O'Connell, *Hiding in Plain Sight? Timing and Transparency in the Administrative State*, 76 U. CHI. L. REV. 1157 (2009).

75 The GAO reports that 44% of nonmajor rules involve the "good cause" exception. *See* GOV'T ACCOUNTABILITY OFFICE, *supra* note 56, at 8. Professor Ronald Levin also reports on an empirical study by Professor Juan Lavilla that revealed relatively frequent use of the good cause exemption—25% of the rules published in the *Federal Register* during a six-month period made use of the "unnecessary" exemption to avoid notice and comment. Ronald M. Levin, *Direct Final Rulemaking*, 64 GEO. WASH. L. REV. 1, 14–15 (1995).

76 In 1995, Professor Ronald Levin reported that "[t]here has never been a legal challenge to a direct final rule" at EPA. *See* Levin, *supra* note 75, at 10.

77 Kristin E. Hickman & Mark Thomson, *Open Minds and Harmless Errors: Judicial Review of Postpromulgation Notice and Comment*, 101 CORNELL L. REV. 261, 285 (2016).

78 *See, e.g.*, Jordan, *supra* note 72, at 118–19 (quoting S. Doc. No. 79-248, at 200, 258 (2d Sess. 1946)) (observing that some courts consider notice and comment unnecessary for "a minor or merely technical amendment in which the public is not particularly interested").

79 *See, e.g.*, Raso, *supra* note 72, at 87–91 (discussing the inconsistency in the courts' review of the "good cause" exception).

80 *See, e.g.*, Jordan, *supra* note 72, at 167–72 (discussing the difficulties involved in crediting post-promulgation participation and noting variation in the courts' approach in this regard); Raso, *supra* note 72, at 88–89 (discussing variation in judicial review of agencies' use of post-promulgation processes).

do not require public comment for incremental delays in effective dates.[81]

How, then, do agencies sort their rules among the various options identified above? In our sample of rules, only one-third of the revisions across all agencies involved formal notice and comment. For another 25%, the agencies provided opportunities for public engagement after the fact through direct final rules, through petitions, or informally in a variety of different ways.

As compared to the background rate for the use of notice and comment for all rules (and not just revised rules), the proportion of revised rules subjected to notice and comment in this study appears somewhat lower. Several studies on the use of notice and comment for promulgating final rules across all agencies thus report that it is employed 50% or more of the time.[82] We are not able to assess the statistical significance of these differences since these studies do not differentiate between initial and revised rules, yet it seems clear that at least in some rulemaking settings—e.g., TSCA—agencies employ notice and comment procedures substantially less often than is the case for other agencies.

A lower rate in agency use of notice and comment for revisions may be easy enough to explain in both practical and legal terms because revisions are more likely than new rules to involve minor issues of little importance to stakeholders. Yet agency avoidance of notice and comment may not always be so easily justified. Although our data do not demonstrate that this is the case, they do suggest that agencies have the capacity to effect significant cumulative changes in policy through a series of minor revisions that do not involve public participation because public comment on each change is deemed "unnecessary" under the good cause exemption. Such an incremental strategy would presumably lower the risk of litigation against the agency for procedural violations, which may increase its willingness to engage in notice and comment "avoidance."[83]

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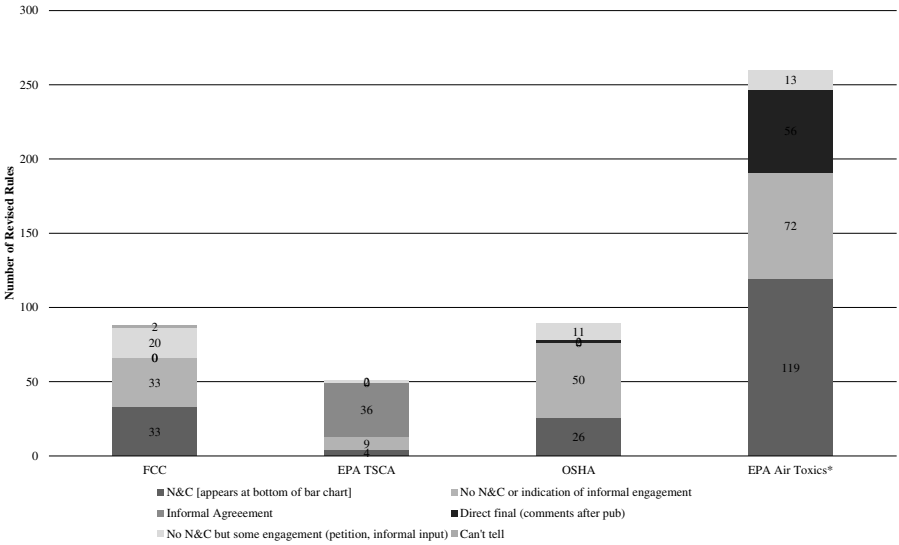
[81] *See, e.g.*, Nat. Res. Def. Council v. Abraham, 355 F.3d 179, 204–06 (2d Cir. 2004) (holding that the Department of Energy's indefinite suspension of the effective date of a prior rule violated APA notice and comment requirements). *But see* Jack M. Beermann, *Presidential Power in Transitions*, 83 B.U. L. Rev. 947, 994 (2003) (discussing how at least brief delays in effective dates should not require notice and comment).

[82] GAO found that about 65% of major rules and 56% of nonmajor rules promulgated from 2003 to 2010 were preceded by an NPRM and involved a comment period. Gov't Accountability Office, *supra* note 56, at 8–9. Raso found that 48% of the rules issued from 1995 to 2012 involved a notice and comment period. Raso, *supra* note 72, at 91.

[83] *See* Raso, *supra* note 72, at 78–107 (positing and producing empirical evidence supporting the hypothesis that agencies will tend to avoid notice and comment rulemakings because of the commitments and risks this more elaborate process entails, and further hypothesizing that agencies will engage in this avoidance where they believe they can

FIGURE 6. MEANS OF ENGAGING PUBLIC INPUT



As Figure 6 reveals, there was also considerable variation across agencies in the extent to which they solicited notice and comment on their revisions. For example, EPA's air toxics rules were significantly more likely to have been revised through notice and comment than the other revisions promulgated by EPA, TSCA, and OSHA.[84] EPA's TSCA test rules, by contrast, rarely involved notice and comment; the lower rate of notice and comment on these was also statistically significant as compared to the EPA air toxics rules, FCC rules, and OSHA rules.[85]

Perhaps even more interesting is that the agencies used quite different techniques to solicit input outside of notice and comment rulemaking. On EPA's TSCA test rules, input solicited by the agency generally consisted of negotiations with regulated parties (counted in this study as "input solicited other ways") that were later memorialized as revisions to the original final rule.

In the air toxics revisions, EPA deployed direct final rules for over 20% of its revisions. These are rules that take effect several

escape meaningful judicial review, such as in inconsistent judicial oversight of the good cause exception).

[84] EPA air toxics revisions compared with the other sets of rules are as follows: FCC ($z = 1.28$, $p = .273$; $OR = 1.45$), OSHA ($z = 1.97$, $p = .049$; $OR = 1.85$), and the EPA TSCA test rules ($z = 4.23$, $p < .001$; $OR = 10.98$). See Appendix for further information on sampling and coding methodology.

[85] EPA TSCA test rules compared with the other sets of rules are as follows: FCC ($z = 2.43$, $p = .015$; $OR = 3.00$), OSHA ($z = 3.76$, $p < .001$; $OR = 5.53$), and EPA air toxics ($z = 3.55$, $p < .001$; $OR = 4.33$).

months after their promulgation unless the agency receives an adverse comment.[86] In some cases EPA also published a NPRM simultaneously with publication of the direct final rule in order to prevent one adverse comment from completely derailing a revision.[87] If adverse comments were received, EPA could then shift the rule into the formal notice and comment process without starting over.

Only 38% of the FCC revisions involved informal notice and comment, but nearly 25% of the remaining rules were still subject to some form of informal engagement by affected parties—primarily as a result of petitions that triggered the revision. For these petitioned revisions that did not involve notice and comment, nearly two-thirds were prompted by multiple petitions filed by diverse groups that appeared to take different positions on the issues. Thus, FCC was confronted with some diverse input from stakeholders on the record for 63% of its rule revisions.

OSHA's revisions were primarily made outside of the formal notice and comment process: for every revised rule that was subjected to notice and comment there were two that went without. OSHA also received petitions for slightly more than 10% of the revisions, although the petitions were generally filed by only one group.

c. Legality of Revisions

These different practices naturally lead to the more legally relevant question: *Were significant revisions consistently subject to notice and comment?* Put another way, are some of the revisions that lack formal notice and comment promulgated in violation of the APA? While the data cannot answer this question with any kind of precision, there is evidence that some substantive revisions were not subjected to notice and comment yet arguably should have been.[88] In their study of the agencies' frequent use of post-promulgation comment processes

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[86] In the case studies, we discovered that when there was at least one adverse comment, the revised rule was withdrawn. EPA Air Toxics Rules, *supra* note 58, at 4 (listing the withdrawal of a direct final rule in National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning, 64 Fed. Reg. 56,173 (Oct. 18, 1999) (to be codified at 40 C.F.R. 63), as a result of two industry adverse comments).

[87] *See, e.g.*, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, 67 Fed. Reg. 41,118 (June 14, 2002) (to be codified at 40 C.F.R. 63); National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, 67 Fed. Reg. 41,136 (proposed June 14, 2002) (to be codified at 40 C.F.R. pt. 63); *see also* EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 3 (discussing the connection between this direct final rule and the NPRM).

[88] *See* Test Rules, *supra* note 58, at 8–13 (describing a number of changes to deadlines and testing requirements over time in individual rule revisions not subjected to notice and comment that cumulatively led to what appear to be substantive and perhaps significant changes to the final testing rule).

in lieu of notice and comment, Professors Hickman and Thomson similarly conclude that it is likely that "at least a significant percentage of agency regulations lacking prepromulgation notice and comment are not, in fact, exempt from those procedures under the APA."[89]

The best-fitting legal exception available to the agency to justify forgoing notice and comment for the revisions in our sample (where there did not appear to be emergencies) is the "unnecessary" exemption typically reserved for minor, technical changes;[90] yet some of the revisions promulgated without notice and comment seemed to be both substantive and important to the public. As mentioned in the prior section, our case studies provide several examples of apparently substantive changes that were designated as corrections that did not involve public comment.[91]

Beyond the materiality of changes characterized as corrections, the case studies revealed other examples of substantive revisions where the absence of formal notice and comment might in hindsight appear to be legally problematic. In one revision of an air toxics standard for halogenated cleaning solvents, for example, EPA exempted an entire group of industries without notice and comment.[92] The case studies also revealed the potential significance of cumulative revisions. In at least one rule from our case studies—an EPA rule requiring testing of fluoroalkenes—the parent regulation was subjected to five revisions without notice and comment over a period of six years.[93] While each round of changes appeared relatively minor, the combined effect of those changes appears significant.[94]

The examples in our case studies of substantive changes that were not subject to notice and comment obviously do not speak directly to the other rules in our study. Yet the likelihood that some of those rules involved material changes that should have been subjected to

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89 Hickman & Thomson, *supra* note 77, at 266.

90 *See supra* note 73 and accompanying text (discussing the most likely "good cause" exceptions).

91 *See supra* notes 66–68 and accompanying text (describing substantive changes to OSHA and EPA air toxics rules in case studies that were not subjected to notice and comment).

92 *See, e.g.*, National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning, 64 Fed. Reg. 37,683 (July 13, 1999) (to be codified at 40 C.F.R. 63) (exempting nonmajor batch cold solvent machines from a federal permit program). *See generally* EPA Air Toxics Rules, *supra* note 58, at 2–6 (characterizing this rule as a noncontroversial exemption that is necessary to create a level playing field for machine operators in this category who are operating in Indian reservations).

93 TSCA Test Rules, *supra* note 58, at 8–13.

94 The track copy of the cumulative revisions of Fluoroalkenes; Final Test Rule, 52 Fed. Reg. 21,516 (1987) (to be codified at 40 C.F.R. 799), is available at www.nyulawreview.org/sites/default/files/CumulativeChangesExample.pdf.

greater public oversight is reinforced by the agencies' own summaries of the nature of the changes made in rules not involving notice and comment. These revisions included: changes in reporting requirements; effectuating stays and extensions; changing the effective date of a rule; deleting a standard; clarifying compliance requirements; and changing the methods or parameters of a mandated test. Variation in the general use of public comment within similar types of revisions, such as amendments, also raises questions about the decision processes the agencies employed for determining whether to elicit comments. See Table 1.

	Final Rule	Amendment	Stay	Extension	Correction	Technical Amendment and Consent Order
FCC Comment	27	3	0	1	0	0
FCC No Comment	22	3	1	0	17	0
OSHA Comment	19	0	2	0	1	0
OSHA No Comment	8	4	18	1	20	0
EPA TSCA Comment	1	1	0	0	0	0
EPA TSCA No Comment	2	0	0	0	7	33
EPA Air Toxics Comment	145	46	1	4	2	0
EPA Air Toxics No Comment	2	15	5	1	62	0

TABLE 1. COMPARISONS OF SELECT TYPES OF REVISIONS ACCORDING TO WHETHER AGENCY FOLLOWED FORMAL NOTICE AND COMMENT ON THE CHANGE

Comparisons of the mean and median page numbers for revisions that underwent notice and comment and those rules that did not also reveal some significant differences between agencies. Somewhat expectedly, the revisions promulgated with formal notice and comment were longer (on average/per rule) than the rules promulgated without notice and comment, and this difference was statistically sig-

nificant.[95] Perhaps in part because the EPA air toxics revisions were more apt to involve more notice and comment, they were also significantly longer, on average, than the revisions promulgated by the FCC and EPA in the TSCA rules.[96]

d. Who Impels Agencies to Revise Rules?

Because we were also interested in why agencies decide to revise rules, we sought to determine whether we could trace the instigator for revision through a careful read of the document itself. Specifically, our questions here were: *What is the impetus for the revision?* Is it a presidential command? Interest group pressure? Efforts to avoid an embarrassment due to error? Experience with enforcement? Or some other factor?

To gain at least some purchase on the trigger for rule revisions that could be observed in a reliable and relatively expedient way, we extracted the agency's own explanation for what prompted the change from the preamble of each revised rule.[97] At a general level, these various motives are aptly summarized by the statements of agency officials in Eisner and Kaleta's 1990s study that "[t]he agency will generally only review [or revise] a rule when it thinks something is wrong."[98] Also consistent with Eisner and Kaleta's study is the fact that more than 99% of revised rules in our dataset appear to have resulted from "informal" agency revision activity rather than the result of formal retrospective review directed by the President or Congress.[99] Indeed, the absence of this more formal trigger for the

[95] For a description of the methods, see Appendix. The statistical analyses reveal that ($t[351] = 17.08$, $p < .001$; $d = 1.29$).

[96] In comparing EPA air toxics rules, we got the following results: FCC ($t[153] = 3.82$, $p < .001$; $d = 0.52$), EPA TSCA ($t[142] = 3.96$, $p < .001$; $d = 0.66$), but not OSHA ($t[117] = 1.65$, $p = .101$; $d = 0.24$). OSHA's revisions were also significantly longer than EPA's TSCA rules ($t[160] = 2.22$; $p = .028$; $d = 0.43$), but they were not significantly longer in the aggregate than the FCC rules: ($t[176] = 1.72$; $p = .087$; $d = 0.29$).

[97] Our reliance on the agency's own explanation for making the revision is obviously incomplete and may lead to some bias in the results. For example, the agency will have incentives in some cases to not be forthright about the motivation for a revision, particularly when it occurs in response to some political pressure within the agency or that arises from the White House or Congress. Our results thus likely understate these political influences. We rely on the agency's own explanation simply because we could not identify any other measure that could be coded reliably across all the rules. Indeed, the use of deliberative process privilege by agencies for precisely this kind of disclosure makes it doubtful that the information could ever be collected consistently for all the rules in our dataset.

[98] Eisner & Kaleta, *supra* note 6, at 148–49 (quoting an unidentified agency official for this observation).

[99] OSHA maintains a list of rules it has subjected to the "lookback" provisions of Section 5 of Executive Order 12866 and Section 610 of the Regulatory Flexibility Act. *Lookback Reviews*, OCCUPATIONAL SAFETY & HEALTH ADMIN., https://www.osha.gov/

400-plus revisions in our study is noteworthy given the existence of both the Regulatory Flexibility Act's directive coupled with executive orders requiring some type of "lookback" beginning with the Carter Administration.[100] The rich revision activity reveals a vibrant "culture" of dynamic rulemaking that occurs without formal commands or directives, even in settings where those formal requirements are in place. In fact, one might expect the former to supersede the latter because agencies will naturally allocate their limited resources to apparent problems rather than attempt systematically to revisit all of their regulations.

In most cases the agency did not mention formal prompting from outside parties in explaining its decision to revise a rule. For example, OSHA revised a rule governing workplace safety in concrete and masonry construction based on a series of tragedies that highlighted the need for concrete and masonry standards.[101] More challenging, of course, is determining what may have triggered the agency's own interest in promulgating a revision when the agency is silent on the matter. Thus, while we distinguish between revisions triggered by the agency and those triggered by interest groups based on the agency's explanation, in practice we suspect that there is a large gray area in which the agency makes revisions based on interest group input or congressional or executive branch inquiries stimulated by interest groups that run the gamut from a helpful suggestion to a demand backed by the threat of litigation or other sanctions.

The second and third most prevalent triggers for revisions were interest group pressures—either through informal avenues (e.g., letters) or through formal petitions.[102] In the first instance, for example, nearly three-quarters of EPA's TSCA test rules were consent orders that memorialized negotiations between the agency and regulated interests, and one can assume from their nature that most, if not all, came in response to requests from parties who were subject to testing requirements. These requests were apparently conveyed to EPA infor-

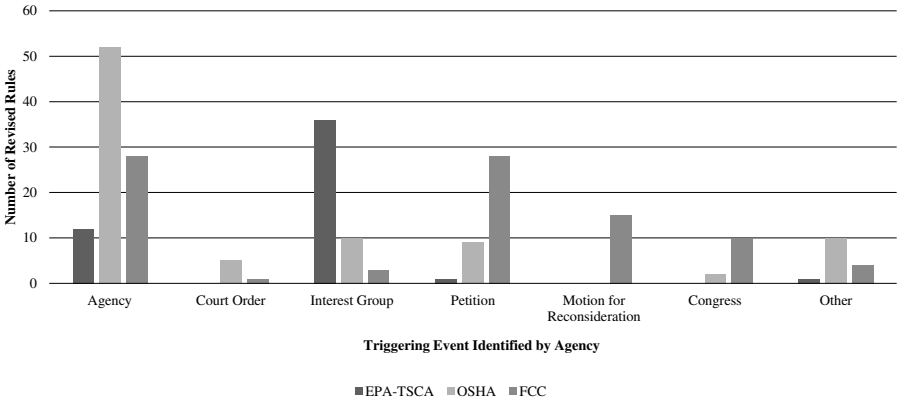
dea/lookback.html#Completed (last visited Oct. 26, 2016). Only one of the rules—a direct final rule revising the cotton dust standard—is included in the eighty-eight revised rules promulgated by OSHA for the rules in our dataset. FCC instituted retrospective review in 2011. Thus none of the revisions of FCC rules in our dataset occurred as a result of a more formal process. (The FCC revised rules in our dataset span 1982 through 2010.) Finally, none of EPA's revisions of TSCA test rules and only one revision to its MACT standards appeared to be triggered by formal retrospective review.

100 *See* ALDY, *supra* note 5, at 90 tbl.1.

101 OSHA Case Studies, *supra* note 58, at 1–2.

102 While the line between judicial influence and interest group pressure is also a fine one, many of the revisions that we consider "interest group-induced" did not involve negotiated settlements with interest groups, at least from what could be gleaned from the *Federal Register* descriptions.

FIGURE 7. NUMBER OF REVISED RULES WITHIN EACH AGENCY PROGRAM EXPLICITLY LINKED TO VARIOUS TRIGGERING EVENTS



mally by letter, fax, or perhaps phone call. By contrast, affected interests were more inclined to rely on formal petitions or motions for reconsideration in requesting revisions by FCC and to a lesser extent OSHA.[103]

The courts also played an important role in triggering revisions. While their direct influence was not a dominant trigger in our study (see Figure 7), our in-depth case studies reveal that courts were nevertheless an important force behind some of the more significant changes.[104] They were the catalyst for at least some of the revisions in four of the six FCC and OSHA case studies, for example, although they often entered the scene after a series of revisions had already been made to the parent rule. The agency revised its rule in response to a judicial remand in three of these cases, and a revision was triggered by a judicial suggestion that some type of adjustment might be necessary in the fourth case.[105] The courts' influence was less direct in

[103] This is noted in all three of the FCC case studies and less frequently in the OSHA case studies. *See* FCC Cases, *supra* note 58, at 4–5; OSHA Case Studies, *supra* note 58, at 8, 10.

[104] *Cf.* West & Raso, *supra* note 42, at 504 tbl.1 (showing in a chart that courts rarely initiated rulemakings, but when the courts did, 50% of those rules were economically significant).

[105] *See* FCC Cases, *supra* note 58, at 1 (explaining that FCC revised its classification of subscription television rules as broadcasting in response to a D.C. Circuit reversal of FCC's related classification of direct broadcast satellite services); *see also* FCC Cases, *supra* note 58, at 4 (noting that FCC issued a Second Further Notice of Proposed Rulemaking regarding the Fin-Syn rules because the Seventh Circuit vacated FCC's finalized 1991 Fin-Syn rules as arbitrary and capricious); OSHA Case Studies, *supra* note 58, at 4 (observing that OSHA extended the startup date of the hazard communication requirements to allow for judicial consideration of a motion filed by the Formaldehyde Institute).

revisions to the air toxics rules; some were based on EPA's "agreements" and "settlements" with regulated parties. Presumably the impetus for the agency to sign these agreements was the threat of credible litigation by regulated parties.[106]

Both Congress and the President also triggered some revisions, although the written record suggests that their influence was slim or nonexistent in the vast majority of cases. The case studies provide several concrete examples of the legislature's role in sparking some of the more important revisions. In FCC's regulation of low-power FM, for example, Congress intervened midway through the agency's drawn-out rulemaking process by passing a law advancing the interests of full-power broadcasters. FCC's subsequent rule revisions were required or otherwise influenced by this new legislation.[107] Two of the OSHA revisions in the larger dataset were attributed to an internal agency review triggered by the Paperwork Reduction Act and another OSHA revision was triggered by the Regulatory Flexibility Act. In the air toxics program, Congress required EPA to review its technology-based standards at regular intervals and also to consider the possibility of revising the standards if unacceptable risks to the public health remained after installing the required technology.[108] Some of the revisions in the air toxics set of rules—though certainly a minority—were the result of this congressionally triggered review activity that took place about once a decade.[109] And the agency took credit for instigating the legislation that in turn triggered the revision in at least one FCC and one OSHA rule.[110]

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[106] *See* EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 2 (describing a settlement agreement between EPA and two aluminum industries over EPA's commitment to initiate a formal process to collect further information for a rule on secondary aluminum).

[107] FCC Cases, *supra* note 58, at 7.

[108] *See* 42 U.S.C. § 7412(f)(1)(A)–(B) (2012) (requiring EPA to investigate and report on methods for calculating the risk to public health remaining from sources subject to regulation under the statute, the public health significance of the estimated risk, and technologically and commercially viable methods and costs for reducing such risks).

[109] In the three case studies, this statutorily directed revision activity showed up only in the secondary aluminum case study. *See* EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 5; *see also* 42 U.S.C. § 7412(d)(6) (requiring review of emission standards at least every eight years).

[110] *See, e.g.*, Certain Minor Changes in Broadcast Facilities Without a Construction Permit, 62 Fed. Reg. 51,052 (Sept. 30, 1997) (to be codified at 47 C.F.R. pts. 1, 73, 74) ("The rule and procedure changes adopted . . . were enabled by Congress' change . . . of Section 403(m) in the . . . Telecommunications Act of 1996. . . . [T]he Commission [subsequently] proposed to eliminate the requirement for a construction permit . . . [for some] modifications to broadcast facilities . . . ."); Nationally Recognized Testing Laboratories—Fees; Public Comment Period on Recognition Notices, 65 Fed. Reg. 46,798, 46,799 (July 31, 2000) (to be codified at 29 C.F.R. pt. 1910) (noting how OSHA asked

The President's influence through express requirements for retrospective rule reviews[111] was rarely cited as a trigger for a revision.[112] We suspect that if the stimulus for the modification was a formal regulatory lookback requirement, the agency would have mentioned that fact to earn credit with the White House.[113] Although executive influence may nevertheless have served as an implicit inducement for revisions, identifying this potentially more substantial presidential role in a direct way is nearly impossible given the nontransparent nature of discussions between agencies and the White House.[114] In a rather crude effort to assess the possible effects of presidential influence, we focused on OSHA, which promulgated rules that were more likely to attract national attention (FCC did as well, but it is an independent agency), and searched for spikes in revisions following a new administration.[115] See Figure 8. No observable increase in revision activity appeared in the two years after a change in administration, though the absence of a spike in revision activity does not mean that changes in political management were not important. A spike in revision activity in 1986 was probably caused by the appointment of a new OSHA administrator who was particularly interested in toxic exposures in the

Congress to grant OSHA authority to collect fees so it can better fund a specific agency program; Congress did grant this authority).

111 *See* ALDY, *supra* note 5, at 90 tbl.1 (listing the executive orders requiring retrospective review).

112 *But see, e.g.*, Recordkeeping and Reporting Burden Reduction, 64 Fed. Reg. 7458 (Feb. 12, 1999) (to be codified at 40 C.F.R. pts. 51, 60, 61, 63) (revising generic recordkeeping requirements, including for MACT rules, as a result of a presidential directive).

113 None of the revisions in this study occurred as a result of prompt letters, for example. *See OIRA Prompt Letters*, OFF. INFO. & REG. AFF., http://www.reginfo.gov/public/jsp/EO/promptLetters.jsp (last visited Oct. 26, 2016) (listing various OIRA prompt letters that OMB sends of its own accord to provide suggestions for how an agency could improve its regulations).

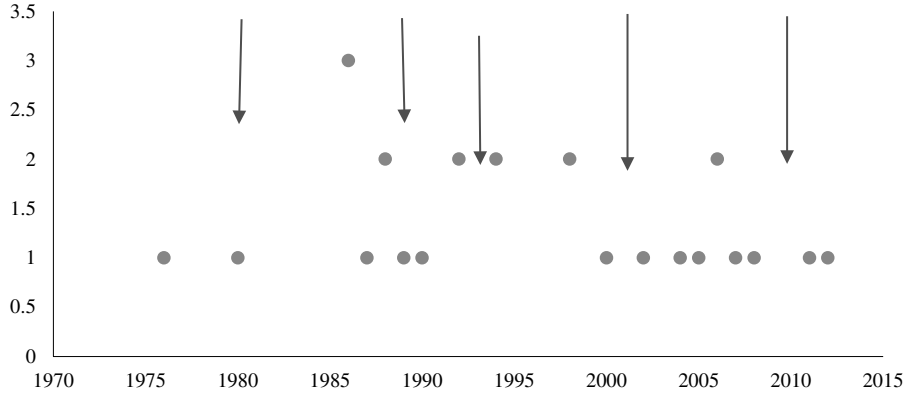
114 Although it was initially a common law creation, the deliberative process privilege is most commonly invoked as an exemption to the Freedom of Information Act (FOIA), which allows an agency to withhold "inter-agency or intra-agency memorandums or letters which would not be available by law to a party other than an agency in litigation with the agency." 5 U.S.C. § 552(b)(5) (2012). It is also used as an exemption to the requirement that agencies place communications on the record after the publication of an NPRM. *See, e.g.*, Sierra Club v. Costle, 657 F.2d 298, 396–97 (D.C. Cir. 1981) (noting that nothing in the Clean Air Act expressly requires EPA to place post-comment communications on the record); *see also* Kagan, *supra* note 43, at 2280 (describing how, under President Reagan, most of OMB's communications never appeared in the public record of rulemakings or were disclosed, and how these communications could induce changes to proposed rules in ways that were invisible to the public). *See generally* Shilpa Narayan, Note, *Proper Assertion of the Deliberative Process Privilege: The Agency Head Requirement*, 77 FORDHAM L. REV. 1183 (2009) (describing the history and development of the deliberative process privilege over time).

115 *See infra* fig.8.

workplace.[116] These findings do suggest, however, that at least for the rules we studied, turnover in the White House is not the primary or even necessarily an important explanatory factor for most revision activity.

FIGURE 8. COUNT OF REVISIONS THAT INVOLVE NOTICE AND COMMENT OVER TIME IN OSHA

(arrows mark changes in Presidential Administration)



3. Potential Differences Across Regulatory Programs

Important similarities emerge across the programs in our study. The aggregate level of revisions was relatively constant from one to the next (on average about two to three revisions per parent rule), and there was not a statistically significant difference in the rates at which the three agencies employed corrections.[117] As discussed, however, agencies carry out their mandates within different legal, technical, and political environments, and idiosyncratic cultures and routines shape their behavior as well. It is also important, then, to consider some of the ways in which dynamic rulemaking may vary across programs. In fact, our case studies and data reveal some interesting differences in the nature of and initial justification for rule revisions. One set of differences may stem from the existence of statutory deadlines. For both

[116] John Pendergrass became the Administrator of OSHA in 1986 and, as a former industrial hygienist, made toxics standard setting one of his top priorities. *See, e.g.*, U.S. DEP'T OF LAB., REFLECTIONS ON OSHA'S HISTORY 19, 65 (2009), https://www.osha.gov/history/OSHA_HISTORY_3360s.pdf; MCGARITY & SHAPIRO, *supra* note 60, at 122; *see also* Peter Perl, *John A. Pendergrass: Hands-on Experience in Workplace Health*, WASH. POST, Aug. 25, 1986, at A13 (describing how Pendergrass considered a last minute change to an OSHA regulation limiting workers' exposure to asbestos).

[117] Our results show ($X^2[3] = 3.81$, $p = .283$). The methods are the same as discussed in the Appendix with respect to identifying differences between agency programs in the use of notice and comment rulemakings.

sets of EPA rules (TSCA test rules and air toxics rules), the agency was subjected to judicially enforceable time limits for promulgating the parent regulation.[118] By contrast, there did not appear to be deadlines for most and perhaps all of the FCC and OSHA rules. One might hypothesize that the agency would be more rushed and make more errors in developing deadline-driven regulations, and that this would result in more frequent revisions—particularly shortly after the rule's promulgation.[119]

In the case of EPA's air toxics (MACT) rules, our data provide some support for that possibility. The average length of a revised rule in the MACT program was significantly longer as a statistical matter than for rules promulgated under the other three programs,[120] and EPA also used notice and comment more frequently (again at a statistically significant level) as compared with the other three categories.[121] Finally, EPA was more likely to promulgate amendments in its revised air toxics rules (also to a statistically significant degree).[122] These features suggest a greater amount of revision activity in the EPA air toxics rules as compared with the rules promulgated without deadlines.

EPA's TSCA test rules were also characterized by some uniquely intensive revision activity. First, they involved a 100% revision rate; every parent was revised at least once.[123] Second, the fact that EPA revised the vast majority of its parent TSCA test rules through consent agreements reached with the manufacturers signals some urgency with respect to finalizing the revisions.[124] Thus, although further research is needed, both of EPA's programs may differ from our other

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[118] *See* 15 U.S.C. § 2603(e)(1)(B) (2012) (requiring EPA under TSCA to either initiate a test rule or publish a reason for not initiating a test rule within twelve months after the interagency Testing Committee recommends that chemical for priority consideration); 42 U.S.C. § 7412(e) (2012) (setting judicially enforceable deadlines for EPA's promulgation of MACT rules); Nat. Res. Def. Council, Inc. v. EPA, 595 F. Supp. 1255, 1269–70 (S.D.N.Y. 1984) (interpreting and partly enforcing deadlines on EPA for test rules).

[119] This is consistent with Gersen and O'Connell's finding of an increased proportion of direct final rules in cases where agencies are promulgating rules under judicially enforced deadlines. *See* Jacob E. Gersen & Anne Joseph O'Connell, *Deadlines in Administrative Law*, 156 U. PA. L. REV. 923, 970–71 (2008).

[120] *See supra* note 96 and accompanying text (discussing the longer MACT rules relative to other agency programs in the study).

[121] *See supra* note 84 and accompanying text (discussing how revisions to EPA's MACT rules employed notice and comment more frequently than the other agencies in the study).

[122] Our results were FCC ($z = 3.05$, $p = .002$; $OR = 3.93$), OSHA ($z = 3.42$, $p < .001$; $OR = 6.20$), and the EPA Toxins ($z = 2.64$, $p = .008$; $OR = 14.75$). Again, the methods are the same as those used to calculate differences between agency programs with respect to the use of the notice and comment process.

[123] *See supra* fig.2 (Revision Activity Across Agencies) and accompanying text.

[124] *See supra* notes 100–01 and accompanying text.

two programs in part because they were governed by statutory deadlines.

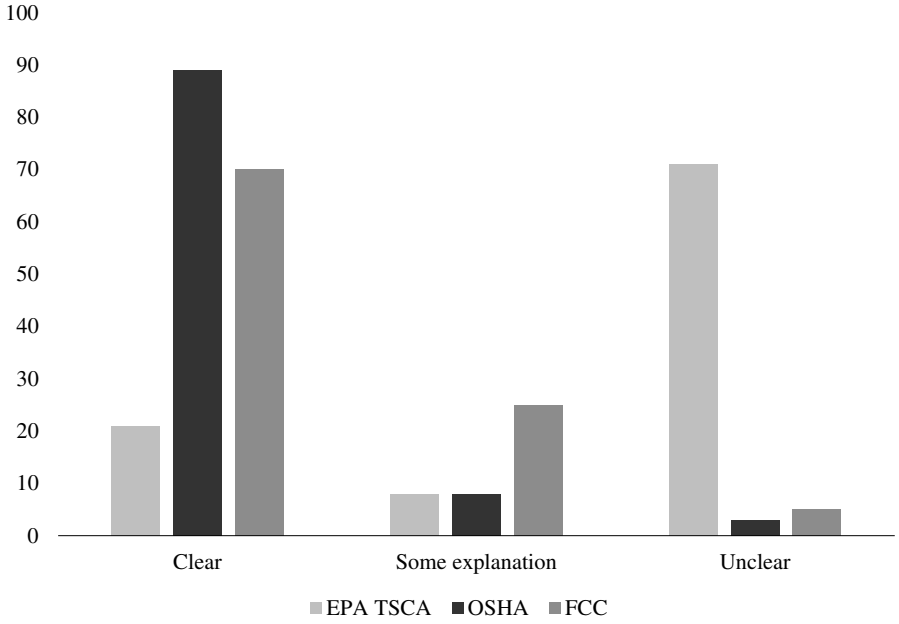
Although we did not have a reason to expect this, an initial review of our data also revealed dramatic differences in the clarity of the agency's explanation with respect to both the motivation for and implications of its revisions. In light of this, we had students code the accessibility of the reasons for and significance of revisions based on three categories: clear, unclear, and in-between.[125] These data revealed striking differences between EPA on the one hand and FCC and OSHA on the other. In the case of EPA's revisions of chemical test rules, in fact, the agency not only failed to explain why it was revising the rule or the implications of the revision; it did not even identify the text of the rule that was being revised. As noted earlier, it merely printed those words that changed in the course of the revision in many cases. As just one example, EPA volunteered that in its revision it had "approved use of nitrogen as the negative control and diluting gas, a 10 L/min flow rate, and an 18- to 19-hour treatment time for the non-activated portion of the test."[126] There was no mention of the prior requirements, why the changes were made, or what their implications were for the regulated parties or public health research. By contrast, both FCC and OSHA provided relatively accessible explanations for their revisions. See Figure 9.

[125] While coding of the clarity of the agencies' explanations is subjective and may be subject to errors for inter-coder reliability, the differences between the agencies on the clarity of the revision is so divergent that the pattern is likely to be robust.

[126] Technical Amendments to Test Rules and Consent Orders, 54 Fed. Reg. 27,352, 27,353 (June 29, 1989) (to be codified at 40 C.F.R. pt. 799); Third Case Study (Heavily Revised): TSCA Test Rules, *supra* note 58, at 9 (summarizing changes made to the Fluoroalkenes rule).

FIGURE 9. CLARITY OF AGENCY'S EXPLANATIONS FOR REVISION

(% revised rules falling into each category)



Several other differences among the agencies also emerged from the case studies and aggregate data. As compared with FCC and OSHA, EPA's revisions to its TSCA test rules appeared to have been dominated by the concerns of regulated parties. This observation is plausibly attributable to the fact that, unlike the more pluralistic and balanced environments in which the other two agencies develop rules, EPA was operating in an environment governing chemical regulation that tends to be heavily skewed in favor of well-organized industry groups at the expense of the more diffuse interests that its programs are intended to serve. This may also help to explain why changes to TSCA rules were more frequent and why their implications were more difficult to understand based on the information EPA provided.

OSHA's revisions tended to be the most substantial—involving nearly triple the number of revisions per rule as compared to the other two agencies. In contrast to EPA's revisions, moreover, OSHA's changes were often supported by relatively accessible explanations and, in some cases, notice and comment to ensure that affected parties were aware of the changes and had an opportunity to respond to them. The case studies also indicate engagement by a more diverse array of interest groups in OSHA revisions as compared to EPA.

Labor groups sought judicial review of two of the three rules detailed in the case studies that led to further revisions.[127]

FCC revisions—particularly as revealed in the case studies—included more significant changes that went through notice and comment or resulted from a barrage of petitions lodged by diverse affected groups.[128] Many of FCC's revisions also generated considerable interest and comment from a wide range of interests.[129] Much like OSHA—but unlike EPA—FCC was also clear about the nature of the changes it was proposing. One might speculate that these factors are interrelated. Where well-organized and competing groups are attentive to rule revisions, there is more pressure on the agency to be transparent.

For both OSHA and FCC, the need for a revision was often the result of external events. Changes were triggered by a series of workplace tragedies in one of the OSHA case studies, for example,[130] and revisions involved court remands in two of the three FCC cases.[131] Both OSHA and FCC sometimes strategically segregated and prioritized controversial issues, moving sequentially through a series of revised rules to tackle a larger set of significant issues over time.[132]

III
Dynamic Rulemaking: The Phenomenon and a Typology

The preceding section indicates that dynamic rulemaking is both prevalent and multi-dimensional. This section attempts to draw some larger lessons from the data. The first set of lessons considers the phenomenon of dynamic rulemaking on its own terms while the second offers a preliminary framework to help us think about this largely unexplored yet potentially important phenomenon.

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127 *See, e.g.*, OSHA Case Studies, *supra* note 58, at 5 (describing a D.C. Circuit opinion holding that OSHA had not adequately explained its conclusion that formaldehyde exposures lower than 1 ppm posed an insignificant risk and remanded the rule for further analysis); *id.* at 9 (describing the D.C. Circuit's remand of several issues to OSHA for further rulemaking and OSHA's subsequent rule revisions promulgated in response).

128 *See, e.g.*, FCC Cases, *supra* note 58, at 7 (noting that FCC published a Memorandum Opinion and Order on Reconsideration in response to petitions for reconsideration that were not published as a Notice of Proposed Rulemaking).

129 *See id.*

130 *See, e.g.*, OSHA Case Studies, *supra* note 58, at 2 (noting that the revisions were promulgated in response to workplace tragedies).

131 *See, e.g.*, FCC Cases, *supra* note 58, at 1 (noting that the D.C. Circuit reversed FCC's classification of "broadcasting" entities under the Communications Act of 1934); *id.* at 4 (describing how the Seventh Circuit overturned a 1991 FCC rule regarding financial interests and syndication).

132 *See id.* at 6–9; OSHA Case Studies, *supra* note 58, at 1–2.

A. The Phenomenon of Dynamic Rulemaking

Our data suggest that, in terms of the applicable legal considerations, agencies often promulgate revised rules somewhat differently from the initial parent rules. As the lower rate of notice and comment makes clear, many revisions are smaller and more incremental in nature. Accordingly, revised rules tend more often to fly under the radar of those who might otherwise oppose them (and might even be timed and framed by the agency to maximize this possibility in some settings); the promulgation of an initial rule, by contrast, might garner more news and attention, bringing with it more forms of oversight and monitoring. Revised rules are also less likely to be significant in an economic sense, since they merely adjust existing regulations, and they therefore face greater odds of escaping OIRA oversight and other procedural checks such as small business review. Finally, since they are mostly undertaken voluntarily by the agencies, revisions seem more likely than parent rules to involve changes that follow the path of least resistance. If a revision is likely to be litigated, politicized, or the subject of oversight hearings, it seems less likely that the agency will take it on. That there were 2.5 revisions for every parent rule in our study is consistent with the speculation that revisions are generally easier to promulgate than the parent rules.

The findings also provide an informative backdrop for considering reforms of rulemaking, particularly the current interest in more formalized retrospective review. Although these actual and proposed reforms are based on an assumption that rulemaking is a static activity, the 400-plus revisions in this study tell a very different story. Virtually all of the revisions were made outside of existing formal requirements or requests for regulatory lookbacks. Agencies instead made the adjustments in response to a variety of other stimuli. TSCA adjustments, for example, were made repeatedly as the result of relatively continuous negotiations between industry and the agency. Indeed, if there is cause for concern in the dynamism we observed in agencies like EPA, it is that there may be a bit too much revision activity occurring outside of the spotlight provided by notice and comment.

Our findings also reveal that regulated industries were among the most important motivators for adjusting rules, urging revisions through petitions, informal overtures, and even threats of litigation. This steady pressure for revisions is not surprising; since regulated industries are most directly affected, they would have strong incentives to keep agency rules operating properly. This finding also suggests that the current focus of lookback reforms on reducing

regulatory burdens may be misplaced.[133] Instead, a more constructive focus for retrospective review may lie in identifying those revised rules that have been compromised by nontransparent, regulated party-instigated revisions that were not subject to meaningful oversight by the full constellation of affected parties.

B. A Typology of Regulatory Dynamism

Having identified dynamic rulemaking as an empirical matter, the next challenge is to develop a conceptual framework for thinking about it in functional terms. The substantial gap that exists between what we might expect to occur and what our data demonstrate, on the one hand, and what is discussed in the literature, on the other, is an important lacuna in our understanding of the administrative process. With the notable exception of a 1996 article by Neil Eisner and Judith Kaleta[134] and several recent analyses of formal regulatory lookback requirements,[135] conventional descriptions of rulemaking in the law review, political science, and public administration literatures reinforce the general impression that it is a static process.[136] Beyond its purely academic implications, information on whether, why, and how agencies revise their regulations is relevant to how lawyers, judges, and other policy makers might think about rulemaking in applied and prescriptive terms. A conceptual framework is a necessary precondition for troubleshooting problems that might be associated with dynamic rulemaking and imagining the kinds of reforms that might improve it.

As supplemented by other examples, our quantitative data and in-depth case studies suggest a preliminary typology describing the incentives for dynamic rulemaking and the purposes it can serve. It may be a vehicle for avoiding mistakes through incremental policy development, as well as a vehicle for correcting policy mistakes that do occur. It may also be a vehicle for responding to technical as well as political changes in the regulatory environment. This section explores these varied functions dynamic rulemaking can perform.

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133 President Obama's 2012 executive order makes this deregulatory slant explicit. Exec. Order No. 13,610, 3 C.F.R. § 258 (2012) *reprinted in* 5 U.S.C. § 601 app. at 106–07 (2012). For an insightful critique of this slant on retrospective review, see Michael A. Livermore & Jason A. Schwartz, *Unbalanced Retrospective Regulatory Review*, REGBLOG (July 12, 2012), http://www.regblog.org/2012/07/12/12-livermore-schwartz-review/.

134 Eisner & Kaleta, *supra* note 6 (dedicating an entire article to the important but neglected topic of the agencies' review (and revision) of existing rules).

135 *See, e.g.*, Coglianese, *supra* note 9 (analyzing President Obama's lookback initiative that compels agencies to review existing rules and suggesting some guidelines for future efforts).

136 *See, e.g.*, *supra* note 1.

1. Error Correction

Agencies frequently issue revised rules to correct typographical and other inadvertent errors contained in parent rules. Such mistakes are an understandable consequence of the length and complexity of many regulations, coupled with the competing demands on agency staff. In our study, the second greatest set of revisions involved these types of error corrections. Although they are seldom controversial and are usually made without notice and comment, they can occasionally have significant substantive implications, as illustrated by OSHA's replacement of the word "should" with "shall" in its Concrete and Masonry rule.[137] We also hypothesize that corrections may be even more common when the agency must promulgate the initial parent rule under a tight, judicially enforceable deadline.

On occasion, an agency realizes that a parent rule may need corrections after it has become final, but before judicial review has run its course. This realization may come in response to the briefs that challengers have filed in litigation. For example, when EPA published a final rule in 1998 tightening the standards of performance for emissions of nitrogen oxides from new power plants and major modifications of existing power plants, it expressed the standard for new plants in different units than the standard for modified existing sources.[138] While the challenge to its regulation was pending, EPA asked the court to remand the standard that governed modifications of existing plants to provide a better explanation for its decision.[139] The court set aside that aspect of the standards and remanded it to the agency for further consideration, but the court continued to consider the standard for new sources.[140]

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[137] *See supra* note 66 and accompanying text.

[138] Lignite Energy Council v. EPA, 198 F.3d 930, 932 (D.C. Cir. 1999) (describing how EPA promulgated a rule setting different nitrogen oxide standards for utility boilers and industrial boilers in response to its statutory mandate under the 1990 Clean Air Act Amendments); Alec Zacaroli, *New Source Performance: Final Rule Sets Fuel Neutral NOx Standard for New or Rebuilt Utility, Industrial Boilers*, 29 Env't Rep. (BNA) 957 (Sept. 18, 1998), http://news.bna.com/erln/search/find_article/find_article.adp (on webpage search for article by "29 ER 957") (noting EPA's various limits on nitrogen oxide for different types of boilers depending on whether they are used in industrial or utility applications, and whether they are new units or modified existing ones).

[139] Pamela Najor, *New Source Review: Industry Wants New Source Standards for NOx Vacated; Agency Seeks Remand*, 30 Env't Rep. (BNA) 745 (Aug. 13, 1999), http://news.bna.com/erln/search/find_article/find_article.adp (on webpage search for article by "30 ER 745").

[140] Pamela Najor, *Air Quality Standards: Federal Appeals Court Strikes Down Performance Standard for Modified Boilers*, 30 Env't Rep. (BNA) 1013 (Oct. 1, 1999), http://news.bna.com/erln/search/find_article/find_article.adp (on webpage search for article by "30 ER 1013"). EPA later withdrew the standard altogether, thereby leaving major modifications of existing power plants subject to the existing 1979 NSPS for NOx. *Air*

Finally, an agency may discover after a regulation has been in effect for a suitable period of time that the assumptions upon which it based critical decisions were erroneous. This could come about as the positive and negative impacts of the rule become clearer over time and the entities subject to the regulation or its beneficiaries bring erroneous assumptions to the agency's attention through a complaint, a petition, or some other means of capturing the agency's attention.[141] It could also result from a formal lookback exercise in which the agency tests the assumptions underlying a previous regulatory impact analysis against real-world performance.[142]

2. *Incremental Policy Development*

Incrementalism has fallen out of favor as a prescriptive model for policymaking in recent decades.[143] This has been manifested not only in the greater emphasis on rulemaking described above, but in requirements that agencies employ cost-benefit analysis and related analytical techniques[144] and engage in comprehensive planning as a way of rationalizing their exercises of governmental power.[145] An incremental approach to policymaking may nevertheless be advantageous under conditions of limited knowledge and political conflict. First, it is a form of bounded rationality that can allow decisionmakers to address issues as they ripen or to deal with some aspects of problems and defer others pending the collection of additional information.[146] This can be especially appealing when agencies address

Quality Standards: Responding to 1999 Ruling, EPA Withdraws NOx Emissions Standard for Modified Boilers, 32 Env't Rep. (BNA) 1616 (Aug. 17, 2001), http://news.bna.com/erln/search/find_article/find_article.adp (on webpage search for article by "32 ER 1616").

[141] *See, e.g.*, Eisner & Kaleta, *supra* note 6, at 145 ("Agencies may receive complaints or suggestions about rules they have issued. They may also receive formal petitions to revise or revoke an existing rule. . . . The legitimacy of the concerns raised, or simply the number of the complaints, suggestions, or petitions, may justify a review.").

[142] *See, e.g.*, *id.* at 144 ("After a rule has been in effect for some time, the agency may learn that the costs or benefits predicted for the rule are quite different from the actual numbers. Costs may be greater or benefits may be lower. As a result, changes may be warranted.").

[143] *See* Colin S. Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393, 408–09 (1981) (discussing incrementalism and how it was attacked by presidential commissions, jurists, and academics).

[144] *See generally* THOMAS O. MCGARITY, REINVENTING RATIONALITY: THE ROLE OF REGULATORY ANALYSIS IN THE FEDERAL BUREAUCRACY (1991).

[145] *See* WILLIAM F. WEST, PROGRAM BUDGETING AND THE PERFORMANCE MOVEMENT: THE ELUSIVE QUEST FOR EFFICIENCY IN GOVERNMENT 99–116 (2011) (analyzing various performance management systems required of agencies that involve identifying goals and performance measures).

[146] *See, e.g.*, Diver, *supra* note 143, at 401–08 (discussing the advantages of incrementalism); Charles E. Lindblom, *The Science of "Muddling Through,"* 19 PUB. ADMIN. REV. 79, 83 (1959) (explaining that the "need for information on values or

issues that are new or complex. Second, incremental policy development can be preferable as a strategy for limiting the scope of conflict. It can facilitate negotiation and compromise in this regard by focusing on relatively small issues sequentially. As already noted, these advantages of incrementalism may explain federal agencies' former preference for case by case adjudication.

Although rulemaking is, by definition, a relatively comprehensive approach to policy development, its dynamic character may still reflect the advantages of proceeding incrementally. One way in which this can occur is through an agency's codification of precedent. Some parent rules contain "back end" provisions that allow officials to modify or grant exemptions, variances, or waivers from their requirements on a case by case basis in the interest of fairness and flexibility.[147] As the agency gains knowledge in the course of dealing with such issues, it may promulgate subsequent rules that confine its own discretion in determining the types of individuals or activities that are subject to regulation or that are eligible for waivers or exemptions.

Provisions within rules that allow for ad hoc discretion are meant to be temporary solutions in some cases. For example, one of the most contentious issues that arose in the FCC's 2008 Low-Power FM (LPFM) rulemaking was whether the Commission should allow improvements to full-power stations that might interfere with existing low-power broadcasters. Another was whether new LPFM stations could be established within a certain minimum distance of existing full-power stations that were operating at second-adjacent broadcast frequencies.[148] In dealing with each of these issues, the Commission stated that the primacy generally afforded to full-power FM could be waived based on a case by case assessment of community needs. At the same time, it characterized these as "interim" measures that would be reevaluated in future proceedings and that might be replaced by general criteria as the agency gained experience.[149]

Illustrations of this type of dynamic rulemaking are plentiful throughout the bureaucracy more generally. In 2007, the Treasury Department's Alcohol and Tobacco Tax and Trade Bureau issued a rule that codified a series of case by case decisions made pursuant to

objectives" in an incremental approach "is drastically reduced," and "capacity for grasping, comprehending, and relating values to one another is not strained beyond the breaking point").

147 *See generally* Robert L. Glicksman & Sidney A. Shapiro, *Improving Regulation Through Incremental Adjustment*, 52 U. KAN. L. REV. 1179 (2004) (arguing that back-end rulemaking is more pragmatic and effective than front-end rulemaking).

148 The second-adjacent frequencies for FM 98.6 would be FM 98.4 and FM 98.8.

149 Creation of a Low Power Radio Service, 73 Fed. Reg. 3202, 3212 (Jan. 17, 2008) (to be codified at 47 C.F.R. pt. 73).

an earlier regulation that allowed it to approve requests for the use of new materials in "clarifying, stabilizing, preserving, fermenting, and otherwise correcting wine and juice."[150] As another example, the Mine Safety and Health Administration issued a rule in 2010 establishing critera for high-voltage continuous mining machines based on its experience in granting fifty-two exceptions to existing standards that did not allow for the use of such machines.[151]

Incremental policy development can also involve the agency's resolution of relatively straightforward and non-controversial issues as it defers less tractable ones. An agency may decide that a partial solution to a problem is better than none as it is developing an NPRM. Alternatively, it may drop or postpone consideration of part of a proposal when it becomes apparent that the provision is more controversial than anticipated or is not adequately supported by evidence in the record. Indeed, these are often the most significant changes that are made to proposed rules.[152] For example, OSHA pulled "lift-slab operations" out from more generic, proposed revisions to its concrete and masonry standards in the wake of new evidence that became available after the close of the comment period; it did so with the intent of focusing exclusively on the appropriate requirements for lift slab operations in a later proceeding.[153] As another illustration, the National Highway Traffic Safety Administration in the 1990s dropped a fuel economy provision from a rule on tire quality in response to opposition from industry and members of Congress.[154] Years later, it revis-

[150] Materials and Processes Authorized for the Treatment of Wine and Juice, 72 Fed. Reg. 51,707, 51,707 (Sept. 11, 2007) (to be codified at 27 C.F.R. pt. 24).

[151] High-Voltage Continuous Mining Machine Standard for Underground Coal Mines, 75 Fed. Reg. 17,529 (Apr. 6, 2010) (to be codified at 30 C.F.R. pts. 18, 75).

[152] They are relatively easy to make procedurally because they do not tend to create standing in the same way as provisions that extend the reach of government.

[153] *See* Concrete and Masonry Construction Safety Standards, 53 Fed. Reg. 22,612, 22,613 (June 15, 1988) ("Additional information and evidence became available to OSHA as a result of its investigation of the collapse of a building under construction using the lift-slab construction method . . . . OSHA intends to repropose the section on life-slab [sic] operations as a separate rulemaking effort."); Concrete and Masonry Construction Safety Standards; Lift Slab Construction, 53 Fed. Reg. 35,972, 35,972–76 (proposed Sept. 15, 1988) (proposing more extensive requirements for lift slab operations in particular light of building collapse); Concrete and Masonry Construction; Requirements for Lift-Slab Construction, 29 C.F.R. § 1926.705 (1990) (finalizing the requirements for lift slab operations).

[154] *See* William F. West, *Formal Procedures, Informal Processes, Accountability, and Responsiveness in Bureaucratic Policymaking: An Institutional Policy Analysis*, 64 PUB. ADMIN. REV. 66, 71 (2004) (discussing this NHTSA rule)."

ited the issue in a regulation that required tire manufacturers to disclose such information to consumers.[155]

FCC's efforts to regulate LPFM illustrate these dynamics through a procedural approach that may be distinctive to that agency. It began with an NPRM that did not offer specific recommendations with regard to several of the key questions it posed. The agency followed with a series of rules combined with further notices that resolved some policy issues and refined and deferred others pending the collection of more information and (one suspects) more consensus building. In one of these subsequent rules, for example, the Commission chose not to resolve the issue of whether applications for LPFM stations should be given priority over translator stations. Rather, it sought additional information bearing on factual issues, such as the amount of spectrum that remained available in certain markets, and on political/normative issues concerning the relative contributions of LPFM and translator stations to community needs.[156]

3. Policy Clarification and Change

The limits on comprehensive policymaking that can be conducive to incremental policy development also create pressures to change rules after they have been promulgated. Because policy decisions are often based on incomplete information, they impose costs on certain groups or otherwise have implications for the allocation of scarce resources.[157] And since agencies are subject to feedback from their environments, the most common function of dynamic rulemaking is to address issues that arise during implementation and enforcement.[158] In a sense the inverse of incremental policy development, policy clarification and change can take a variety of forms.

Many rule revisions define terms or criteria for application that were ambiguous or unintended in the parent regulations. The need for clarification often reflects the difficulty of articulating generally applicable standards, even within what may appear to be narrow policy domains.[159] Once a rule is in effect, agency inspectors may discover

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155 Tire Fuel Efficiency Consumer Information Program, 74 Fed. Reg. 29,542 (proposed June 22, 2009) (to be codified at 49 C.F.R. pt. 575).

156 *See* Creation of a Low Power Radio Service, 73 Fed. Reg. 3202, 3209 (Jan. 17, 2008) (to be codified at 47 C.F.R. pt. 73).

157 As is the case with much FCC regulation, for example.

158 *See, e.g.*, Eisner & Kaleta, *supra* note 6, at 144–45 ("As inspectors work with the people subject to the regulations, as investigators examine accidents, and as attorneys try to prove violations of regulations in enforcement cases or in litigation, they and others involved in the day-to-day implementation of the regulations will identify problems.").

159 *Id.* at 145 ("A rule thought to be clear on its face may be confusing to many. A rule thought to solve a problem may not be achieving its intended results. A rule thought to be

that the vagueness of its terms hinders effective enforcement, or agency officials in the field may receive complaints from regulated entities or regulatory beneficiaries that the rule as currently worded is not achieving its intended effect.[160] Likewise, a large number of requests for interpretations or exemptions may indicate that the rule is not functioning as intended, and the agency can respond by clarifying or modifying the rule to bring it into line with the agency's original expectations.[161]

Our aggregate coding does not provide the fine-grained information to identify the frequency of this type of activity, but revisions for the purpose of policy clarification were starkly evident in our case studies. As one example, EPA issued a rule, the primary purpose of which was to clarify the intent of an earlier regulation concerning the production of hydrochloric acid (HCl).[162] Included among its provisions was a more precise definition of "equipment" and clarifications of several reporting and maintenance requirements that had been confusing to the industry. The agency also removed language from its earlier rule that was meant to avoid duplicative requirements (under other EPA rules) but that had inadvertently exempted HCl leaks in storage tanks, transfer operations, and various kinds of equipment from any federal regulation.[163] These changes were made pursuant to an NPRM in which EPA offered to hold public hearings if requested. The proposal elicited only two written comments, both of which were from the regulated industry.[164]

One can draw a conceptual distinction (if not always a practical one) between dynamic rulemaking that clarifies policy intent and dynamic rulemaking that effectively changes policy. The latter takes a variety of forms but typically results from feedback concerning unan-

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easy to implement may turn out to be quite difficult to comply with in the real world. Finally, a court may find that a rule means something other than the agency thought. When an agency learns of these types of things, it may decide that it is necessary to review the regulation.").

[160] *Id.*

[161] *Id.* at 145.

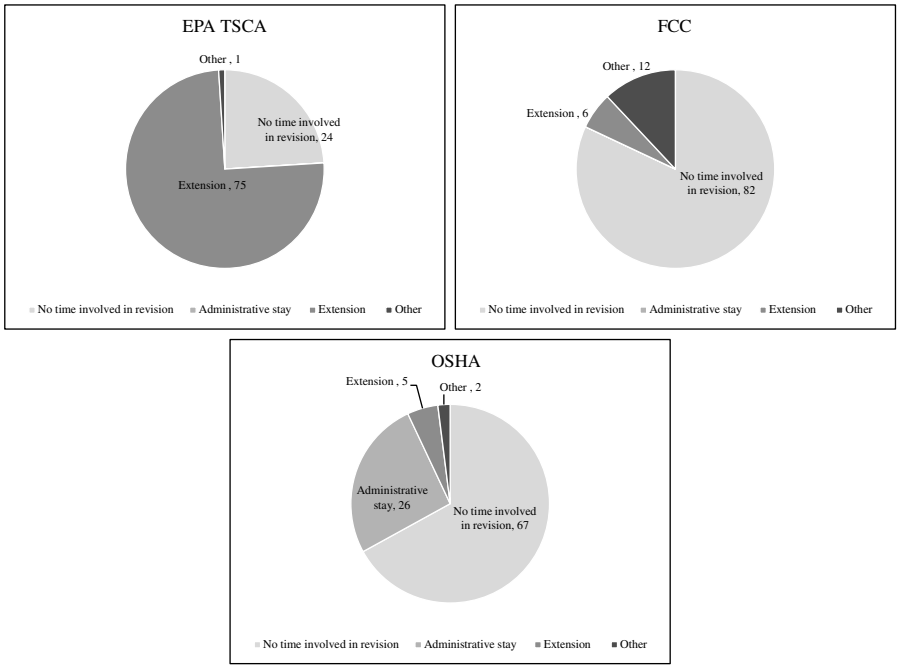
[162] National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production, 71 Fed. Reg. 17,738, 17,740, *passim* (Apr. 7, 2006) (to be codified at 40 C.F.R. pt. 63).

[163] *Id.*

[164] American Chemistry Council, Comment Letter on Proposed Rule on National Emission Standards for Hazardous Air Pollutant (NESHAP): Hydrochloric Acid Production (Oct. 24, 2005), https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2002-0057-0012&attachmentNumber=1&disposition=attachment&contentType=pdf; Dow Chemical Company, Comment Letter on Proposed Rule on National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production (Oct. 21, 2005), https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2002-0057-0013&attachmentNumber=1&disposition=attachment&contentType=pdf.

ticipated consequences of requirements that affected groups bring to agencies' attention or that are identified by officials in the field who are responsible for enforcing regulations. Perhaps the most common example of dynamic rulemaking of the latter sort is the administrative stay that extends a requirement's effective date in light of complaints that compliance by the specified date will be very difficult or impossible. Although time extensions were contained in some of the revisions issued by each of our agencies, they were especially prevalent in the EPA's TSCA revised test rules. (See Figure 10). Fully 75% of the TSCA rules involved some type of extension of time for regulated parties to come into compliance.[165] Notice and comment was also generally not solicited when an agency labeled a final rule as a "stay" (although OSHA did solicit notice and comment for about 5% of its final stays).

FIGURE 10. PERCENT OF REVISIONS THAT INVOLVE EXTENSIONS OR STAYS



[165] The extensions were only about a year in duration, although in some cases cumulative extensions led to a delay in compliance of as much as five or six years. *See* TSCA Test Rules, *supra* note 58, at 12.

Our case studies revealed an interesting practice by both OSHA and EPA (but not FCC)[166] of using administrative stays to break off a portion of a final rule that is hotly contested after promulgation and deferring compliance requirements pending further study and possible revision. In the OSHA revision of its formaldehyde standard, for example, the agency encountered some disagreements with OIRA over the extent to which its hazard communication requirements were consistent with constraints imposed by the Paperwork Reduction Act (which OIRA enforces). To give itself time to work through these issues, OSHA stayed this portion of the rule eight separate times over a period of three years.[167] OSHA also stayed a portion of its asbestos standard as it applied to a certain type of material for six years pending further research.[168] EPA followed a similar pattern in two of the three air toxics case studies, staying the applicability of the requirements to certain facilities pending further research.[169] These more specific examples come from our select case studies, but the likelihood of finding similar creative uses of stays and extensions in the aggregate data seems high.

Perhaps the most significant policy changes accomplished through rule revisions are modifications in the coverage of parent rules. For example, EPA modified its regulations on Halogenated Cleaning Solvents with regard to certain kinds of cleaning machines because the original rule was based on a misunderstanding of how those machines operated.[170] In the same series of revisions, the agency

[166] FCC did not use stays to hold back portions of the rule but instead explicitly bracketed the more difficult or controversial issues identified during the comment period for further discussion and study without resolving them in the final rule and taking them on sequentially in later rulemaking initiatives. *See, e.g.*, FCC Cases, *supra* note 58, at 8 (deferring the decision on whether LPFM should be given primacy over translators pending the collection of more information); *id.* at 9 (deferring on some issues and moving forward on others). This could be attributable to many factors, but at least one difference could be that FCC was not operating under statutory deadlines as was the case with EPA's air toxics rules. In addition, FCC was not promulgating protective standards, which by their nature suggest the need for action that is stayed rather than action that is deferred without a default standard in place.

[167] OSHA Case Studies, *supra* note 58, at 4 (discussing OSHA's use of a stay to give the agency more time to propose requirements).

[168] *Id.* at 7–8 (discussing OSHA's use of a stay to give the agency more time to collect evidence and propose requirements).

[169] EPA Air Toxics Rules, *supra* note 58, at 3 (noting this approach being used twice for two different issues arising over time—one in 1998 and another in 1999); EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 2–3 (breaking off the aluminum foundries and aluminum die casting facilities for separate treatment under a settlement).

[170] EPA Air Toxics Rules, *supra* note 58, at 3 (referencing a rule promulgated in May 1998 that stays emission standards because EPA did not understand how machines work and needed additional time to analyze them).

exempted another type of machine from regulation because the discretionary authority the states had been given to offer such exemptions did not extend to businesses operating on Indian reservations. The effect of leaving the regulation in place would have been to maintain an uneven economic playing field to the disadvantage of Native Americans.[171] Similarly, when OSHA recognized that it might have made a mistake in including non-asbestiform tremolite, anthophyllite, and actinolite in its parent asbestos rule, it addressed this situation by staying the effective date of the rule several times with respect to those substances to permit further notice and comment. This corrective revision was precipitated by a number of letters and petitions for rulemaking from some entities that had participated in the asbestos rulemaking and others that had not. As the parent rule went into effect for the asbestiform versions of those minerals, OSHA promulgated the stays through direct final rules that did not afford an opportunity for public comment.[172]

Our case studies suggest that post-promulgation policy changes such as these are common and perhaps even the norm for important rules. Reviewing courts sometimes play a role in the process by requiring agencies to revisit decisions when they have overlooked important evidence. This accounted for some of the changes in two of the three OSHA cases we examined,[173] and one of the three FCC cases.[174] On rare occasions, Congress plays a role in policy change by enacting legislation in response to the parent rule. In response to lobbying by full-power broadcasters and translators against FCC's initial LPFM rule, for example, Congress passed a law less than a year later requiring the Commission to revise the regulation in ways that favored those interests (at the expense of low-power broadcasters).[175]

Post-promulgation changes to parent rules are in part attributable to the previously discussed informational and political challenges that comprehensive policy development frequently encounters. The frequency of such policy changes also speaks to the limitations of notice and comment procedures in providing information to agencies about the prospective effects of their decisions. Post-promulgation changes often address problems that could have been identified in advance by

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171 *See id.* (discussing this direct final and proposed rule published in July 1999); *see also* National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning, 64 Fed. Reg. 37,683 (July 13, 1999) (to be codified at 40 C.F.R. 63).

172 *See* OSHA Case Studies, *supra* note 58, at 8 (recounting these events).

173 OSHA Case Studies, *supra* note 58, at 5 (summarizing why the D.C. Circuit found OSHA had not adequately explained its conclusion); *id.* at 9 (detailing OSHA's response to the D.C. Circuit's remand).

174 FCC Cases, *supra* note 58, at 4–5 (detailing FCC's response to 7th Circuit's remand).

175 *Id.* at 7 (discussing this legislation and FCC's response).

affected interests who were sufficiently attentive. Because monitoring and participating in the rulemaking process is costly, however, some stakeholders may remain unaware of agency rulemaking initiatives until the rules take effect. Given that agencies make many adjustments without notice and comment, however, another possibility is that agencies sometimes find it strategically advantageous to wait until a rule has been promulgated before attempting to secure changes, a possibility we return to in Part IV.

4. Adaptation to Environmental Changes

No matter how well-crafted regulations might be when they are issued, dynamic rulemaking may also occur in response to changes in the physical, technical, or institutional environments.[176] These often consist of objective changes in the conditions that programs were designed to address. For example, many of the Federal Aviation Administration (FAA)'s revisions to regulations are issued in response to technological developments ranging from better ways of reducing fuel-tank flammability in transport airplanes[177] to the construction of cell phone towers that restrict navigable airspace.[178] Evolving commercial practices, such as new advertising claims or the invention of new financial instruments, may also provide the impetus for policy adaptation through dynamic rulemaking.

Policy adaptation often takes place as a reaction to environmental changes as they occur, but it may also result from regularly scheduled reviews in areas where policy-relevant conditions are assumed to be in constant flux. For example, Congress often structures regulatory programs with an iterative form of dynamic rulemaking in mind. The door is not just open for change; the agency is required by its enabling legislation to revisit its regulations on a regular basis. For example, the Clean Air Act instructs EPA to revisit the national ambient air quality standards (NAAQS) every five years with the goal of revising them in light of scientific information that has accumulated since the previous rulemaking.[179] It is not at all uncommon for EPA to initiate another iteration of the standard-setting process before the judicial challenges to the product of the previous iteration have run their course.[180] Simi-

[176] Eisner & Kaleta, *supra* note 6, at 144 (providing a list of reasons for reviewing or changing regulations).

[177] Reduction of Fuel Tank Flammability in Transport Category Airplanes, 71 Fed. Reg. 14,122, 14,122 (proposed Mar. 1, 2006) (to be codified at 14 C.F.R. pts. 25, 91, 121, 125, and 129).

[178] 14 C.F.R. § 77.1 (2010).

[179] 42 U.S.C. § 7409(d) (2012).

[180] For example, EPA was well on the way toward revising the national ambient air quality standards for ozone in the Obama Administration when the D.C. Circuit affirmed

larly, section 112 of the Clean Air Act requires that EPA revisit the air toxics emission standards after eight years in light of changes in emissions reduction technologies.[181] Dynamic rulemaking can therefore be a cyclical process in which new rules are necessitated in part by the effects of existing regulations. Based on input from a legislatively constituted advisory panel, for example, the National Oceanic and Atmospheric Administration (NOAA) significantly relaxed its restrictions on the harvesting of swordfish in one of its regions because its regulations had successfully led to an increase in the population of that species.[182]

Changes in the environment can also result from the actions of other agencies. This is often the case in policy areas such as environmental protection and financial regulation, where administrative authority is highly fragmented and overlapping. At the urging of industry representatives and the Commodity Futures Trading Commission, for example, the Securities and Exchange Commission proposed an amendment to its net capital rule so that it would be consistent with recent changes in the Commodity Futures Trading Commission's net capital rule.[183] With continued economic globalization, agencies ranging from FDA, to FAA, to the United States Department of Agriculture (USDA), to the Patent and Trademark Office (PTO) have also felt increased pressure to harmonize their policies with regulatory initiatives by foreign governments and other international entities. For example, the Federal Reserve, the Federal Deposit Insurance Corporation, and the Treasury Department's Offices of the Controller of the Currency and Thrift Supervision used a joint rulemaking to revise their regulations on risk-based capital standards largely in response to policy changes by the Basel Committee on Banking Supervision.[184] And OSHA has used a notice-and-comment rulemaking process to change its longstanding Hazard Communications regulations to harmonize them with the Globally Harmonized System of Classification and Labeling of Chemicals.[185]

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the ozone standard that the George W. Bush Administration had promulgated in 2007. *See* Mississippi v. EPA, 744 F.3d 1334, 1348 (D.C. Cir. 2013).

181 42 U.S.C. § 7412(d)(6) (1990).

182 Notification of Public Hearings for U.S. Atlantic Swordfish Fishery Management Measures, 72 Fed. Reg. 96 (Jan. 3, 2007).

183 Amendments to Rule 13c3-1 and Rule 17a-11 Applicable to Broker-Dealers Also Registered as Futures Commission Merchants, 71 Fed. Reg. 60,636, 60,637 (proposed Oct. 13, 2006) (to be codified at 17 C.F.R. pt. 240).

184 Risk-Based Capital Standards: Advanced Capital Adequacy Framework - Basel II, 72 Fed. Reg. 69,288, 69,289 (published Dec. 7, 2007) (codified in scattered sections of 12 C.F.R.).

185 *See* Occupational Safety and Health Administration, Hazard Communication: Final Rule, 29 C.F.R. § 1910.1200 (2012).

Dynamic rulemaking can also reflect changes in the political environment such as shifts in public opinion or media attention, or turnover in the presidency or on legislative oversight committees.[186] For example, the regulation at issue in *State Farm* was an adjustment to an existing rule that was precipitated by the incoming Reagan Administration's anti-interventionist regulatory philosophy.[187] The rule that precipitated the landmark *Chevron* decision[188] provides an example of how both political change and different prescriptive models of policymaking can cause agencies to revise their regulations. Issued in October 1981 under the newly elected Reagan Administration, an EPA rule modified a regulation that had been issued at the urging of environmentalists at the end of the Carter Administration.[189] It did so by substituting the more industry-friendly bubble concept as a regulatory criterion in place of restrictions on point-source emissions in regions of the country that did not meet national ambient air quality standards.[190]

Another example of dynamic rulemaking as adaptation to changes in the political environment is the frequent attempt by new administrations to review and revise "midnight" regulations finalized by previous administrations governed by a different party.[191] Typically, the President or a high-level White House official issues a memorandum to all executive branch agencies ordering them to withdraw all proposed and final regulations from the Office of the *Federal Register* and to issue public notices postponing the effective dates of final regulations that had been published but were not yet effective for

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[186] *Cf.* Eisner & Kaleta, *supra* note 6, at 144 (recognizing change in administration policy as a cause of regulatory change).

[187] Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 38 (1983); *see also id.* at 59 (Rehnquist, J., dissenting) ("The agency's changed view of the standard seems to be related to the election of a new President of a different political party."). In 1981, the Reagan Administration rescinded the administrative regulation requiring seatbelts in motor vehicles. *Id.* at 38.

[188] *See* Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 844 (1984) ("[C]onsiderable weight should be accorded by courts to an executive department's construction of a statutory scheme it is entrusted to administer . . . .").

[189] Requirements for Preparation, Adoption and Submittal of Implementation Plans and Approval and Promulgation of Implementation Plans, 46 Fed. Reg. 50,766 (Oct. 14, 1961) (to be codified at 40 C.F.R. pt. 51, 52).

[190] Requirements for Preparation, Adoption and Submittal of Implementation Plans and Approval and Promulgation of Implementation Plans, 46 Fed. Reg. 50,766, 50,767 (Oct. 14, 1961) (to be codified at 40 C.F.R. pt. 51, 52).

[191] *See supra* note 24 and accompanying text (collecting academic commentary on "midnight" regulation).

a limited time to permit the agency to re-examine those rules in light of the new administration's policies.[192]

Admittedly, there is not always a clear dividing line between policy change in response to political reaction and adaptation in response to a changed political environment. As a conceptual distinction, however, the former addresses a political miscalculation while the latter occurs in response to a significant reconfiguration of the environment as new coalitions emerge, issues are redefined, new presidential administrations assume office, or legislative attention shifts as the result of constituent pressures or electoral turnover. Adaptation in response to disruptions of existing institutional relationships and new ways of thinking about problems are relatively rare in comparison to other forms of dynamic rulemaking, but it can also produce the most noteworthy policy changes.

Changes in the political and intellectual environment can be intertwined with changes in technology and business practices. This was the case with the attenuation and eventual elimination of FCC's 1970 regulation that restricted the major networks' ownership and control over syndicated television shows. Controversial from the outset, the argument that the rule was needed in order to reduce the concentration of economic power and promote diversity in the broadcast industry became more suspect with the rise of satellite and cable TV, the emergence of additional networks, and other changes that led to more competition and a greater variety of programming. Economic arguments based on changes in the structure of the industry were no doubt reinforced by the growing influence of "Chicago School" thinking, which took a relatively sanguine view of market concentration.[193] These practical and intellectual changes affected the balance of influence between the various groups that benefited from the regulations and the groups and other agencies that opposed them. Although FCC issued a rule in June of 1991 and a slightly amended

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[192] For an example of a White House memorandum directing executive branch agencies to withdraw all proposed and final regulations from the Office of the Federal Register and to issue public notices postponing the effective dates of final regulations, see Memorandum for the Heads and Acting Heads of Executive Departments and Agencies, 66 Fed. Reg. 7702 (Jan. 24, 2001).

[193] *See, e.g.*, Walter Adams & James W. Brock, *Vertical Integration, Monopoly Power, and Antitrust Policy: A Case Study of Video Entertainment*, 36 WAYNE L. REV. 51 (1990) (discussing the influence of Chicago School philosophy on antitrust concerns regarding vertical mergers within video entertainment industry); William G. Covington, Jr., *The Financial Interest and Syndication Rules in Retrospect: History and Analysis*, 16 COMM. & L. 3, 6–9 (1994) (examining the effect of marketplace approaches and the popularity of deregulation in overturning restrictive rules on syndication ownership); *see also* THOMAS O. MCGARITY, FREEDOM TO HARM 42–44 (2013) (describing Chicago School thinking).

revision in December of that year[194] that sought to strike a compromise between these coalitions, the regulation was overturned by the Seventh Circuit in 1992.[195] A subsequent rule issued in 1993 all but eliminated restrictions on syndication ownership.[196]

IV
Future Considerations for Dynamic Rulemaking

Our exploratory study reveals that rule revisions are ubiquitous, that they perform various functions, and that they come about through various procedural mechanisms. How this dynamism intersects with the goals of retrospective review remains an open question, but as a preliminary matter the data reveal that regulations are not static and that agencies are in fact constantly revisiting the majority of their rules without formal procedures or the kind of transparency that can facilitate public oversight and accountability.[197] Our results also reveal that at least some of this dynamism occurs in response to information provided formally or informally by regulated parties, with the diffuse public potentially on the losing end of the stick.[198] This observation suggests that to the extent retrospective review is in fact needed, it is not to protect industry from excessive requirements but to counteract deregulatory drift that may be occurring during numerous under-the-radar revisions as a result of pressure from regulated stakeholders. At the very least, our findings should mitigate some of the concerns of regulatory reformers and academic observers that formal retrospective review is needed to protect regulated parties from outdated and unnecessary regulations.

Yet quite apart from the implications of these findings for retrospective review, dynamic rulemaking raises basic administrative process questions. How should we think about rule revisions in normative terms, particularly since they vary so greatly among sets of rules and agencies, and with respect to their purpose and form? While it seems apparent that dynamic rulemaking is both necessary and inevitable in

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194 *See* Broadcast Services; Financial Interest and Syndication Rules, 56 Fed. Reg. 26,242 (June 6, 1991) (to be codified at 47 C.F.R. pt. 73); Broadcast Services; Evaluation of the Syndication and Financial Interest Rules, 56 Fed. Reg. 64,207 (Dec. 9, 1991) (to be codified at 47 C.F.R. pt. 73).

195 Schurz Commc'ns, Inc. v. FCC, 982 F.2d 1043, 1055 (7th Cir. 1992) (overruling the FCC regulation).

196 47 C.F.R. § 73.601 (1993).

197 *See supra* Section II.B.1 (demonstrating agencies frequently revise rules); *supra* Section II.B.2 (indicating agencies generally revise rules without notice and comment or formal procedures of public engagement).

198 *See supra* note 102 and accompanying text (discussing the role of regulated parties in triggering revisions in EPA's TSCA test rules).

a complex and fluid policy environment, the findings from our study also reveal that at least some of this activity has the potential to undermine important process values if not properly structured. Agencies may enjoy a bit too much discretionary space to make adjustments to rules, while at the same time facing perverse incentives to abuse that discretion. This is especially apt to be the case in unidimensional settings where changes are not perceived to be salient by all relevant interests. Given these challenges, how can agencies repair and revise rules expeditiously in pursuit of their statutory missions without creating dangerous loopholes that undermine the deliberative processes prescribed by the APA?

This final part of the article begins by summarizing the virtues of dynamic rulemaking in a world that is constantly changing. It then explores how dynamic rulemaking can lead to outcomes that are inconsistent with agency statutes, can undercut administrative process values, and can bypass analytical and centralized review requirements of various executive orders. After exploring these various dangers, the section then provides a preliminary model for how we might distinguish good from bad procedures for rule revisions and concludes with preliminary suggestions for reform.

A. The Virtues of Dynamic Rulemaking

Dynamic rulemaking has many desirable characteristics. Most would agree that it is needed to correct errors in previously promulgated rules. Dynamic rulemaking allows agencies to address difficult issues in rapidly changing policy environments incrementally in ways that allow them to accomplish some progress toward fulfilling statutory goals without having to muster the informational, analytical, and political resources necessary to bring about comprehensive changes. In short, dynamic rulemaking can avoid the ossification problem that plagues modern informal rulemaking.[199] Dynamic rulemaking also permits agencies to clarify and make slight adjustments in the stringency or coverage of rules in light of feedback the agency receives as it is implementing and enforcing them. Relying on dynamic rulemaking, agencies can defer compliance on hotly contested aspects of a regulation for more prolonged consideration while proceeding with less controversial aspects of the rule. Perhaps most important, an agency may employ dynamic rulemaking to adapt to changes in the physical, technological, or policy environments in which it operates. An agency that is willing to make rapid adjustments to rules in the future can be less concerned about promulgating a stringent rule at the outset because it

[199] *See supra* note 48 and accompanying text.

can depend on regulated entities to alert it to the need for change as they attempt to comply with its terms.[200] All of these are desirable characteristics of a regulatory system that operates in an uncertain and changing world. Indeed, one careful observer has suggested that the agency's ability to change a rule in light of changed circumstances has a positive value and that regulatory impact analyses for rules should incorporate that value into their estimates of the costs and benefits of rules.[201]

The informal process of dynamic rulemaking that takes place as a matter of course as agencies react to feedback from a variety of sources also has important advantages over formal requirements that agencies review all or some significant portion of their regulations in a proactive way. Insofar as such requirements are taken seriously, they impose a very substantial burden on agency staff who are already stretched so thin that important issues must often wait years to be placed on the rulemaking agenda and more years to be addressed through final regulations. Assuming that it is driven by full and balanced information from the agency's technical and political environments, dynamic rulemaking can be a more efficient way to allocate limited organizational resources than efforts at systematic, proactive review. As a primarily reactive process, it can allow agencies to allocate their limited resources to rules that are problematic while ignoring those that are not. This leaves open the question whether formal requirements for proactive review are a desirable supplement to dynamic rulemaking, given their costs.

B. Cautionary Notes

Despite its virtues, there are also reasons to temper one's enthusiasm for dynamic rulemaking. Precisely because of its reactive nature, it may work to the advantage of some groups over others. In particular, it may favor well-organized, intensely affected interests (typically regulated entities) that have the resources to sustain their influence in the administrative process over time at the expense of the generally more diffuse interests of the beneficiaries of regulatory programs.

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200 *See A Review of Regulatory Reform Proposals: Hearings Before the S. Homeland Sec. and Gov't Affairs Comm.*, 114th Cong. (2015) (statement of Sidney A. Shapiro, Frank U. Fletcher Chair of Administrative Law, Wake Forest University School of Law) (advocating for more flexibility for agencies post-promulgation to make needed adjustments rather than lock in all details in the form of a static "final rule").

201 *See, e.g.*, Joe Vladeck, Note, *Valuing Regulatory Flexibility: A Real Options Approach to Cost-Benefit Analysis*, 103 GEO. L.J. 797, 798 (2015) (suggesting that "a regulatory agency's initial economic analysis of whether to issue a regulation should explicitly incorporate the value of that agency's authority to revisit the regulation in the future and, potentially, amend or repeal it").

Moreover, even the most valuable revisions to existing rules may lack legitimacy if they are promulgated in ways that lack procedural accountability. Our study reveals that some revision techniques are rigorous and transparent, but that others lack transparency and fail to provide opportunities for all relevant interests to weigh in on technical issues and policy changes. As such, they may facilitate the kinds of subterranean decisionmaking long associated with agency capture. This section tallies up some of the administrative process dangers that emerge from our data and case studies.

1. Instability and Uncertainty

The most obvious downside to dynamic rulemaking is its tendency to render agency policy unstable; neither the regulated entities nor the beneficiaries of a rulemaking exercise can be confident that the result will remain in effect for a definite period of time. The uncertainty that arises when an agency is constantly changing the rules of the game can defeat settled expectations and befuddle long-range planning by affected interests as well as by other governmental actors in a complex institutional environment where organizational missions are intertwined. The owner of a power plant, for example, needs to be confident that the requirements of a recently promulgated environmental regulation will not change over the time that it takes to install an expensive technology or comply with a ten-year low-sulfur coal contract. Having gone through the excruciating process of preparing state implementation plans to attain a recently promulgated national ambient air quality standard, state environmental protection agencies do not relish the prospect of having to repeat the process in another five years when EPA revises the NAAQS. People who thought they would be protected by a parent rule when it was promulgated may be unpleasantly surprised to discover that the agency amended it not long after its publication to provide multiple exemptions (as EPA did in the secondary aluminum smelter rulemaking) or to cut back on its scope or stringency. Few members of the general public are avid readers of the *Federal Register*, and most revisions and exceptions are unlikely to receive media attention. The parent may have given the illusion of protection that subsequent revisions have whittled away unbeknownst to its beneficiaries.

2. Fidelity to Statutory Goals

In much the same vein, dynamic rulemaking has the potential to undermine legislative goals in ways that are consistent with conven-

tional accounts of regulatory capture.[202] An agency is exercising power vested by a statute to further legislative intent when it promulgates a substantive rule. Yet the agency may achieve a result that is inconsistent with the statute's purpose when it employs dynamic rulemaking to accomplish substantive changes to those regulations at the behest of rent-seeking interest groups. One or two brief extensions of the deadline for complying with a requirement are not likely to undermine that purpose, but a continuing procession of extensions and other changes to a rule can run contrary to legislative intent. This can be especially pernicious when the statute empowers the agency to address serious risks to the public. The decade-long sequence of deadline extensions and outright exemptions that characterized EPA's halogenated solvents rulemaking shows that dynamic rulemaking can be a vehicle through which agencies effectuate policy erosion as regulated entities nibble away at statutory protections.[203]

3. Administrative Efficiency

If it is theoretically more efficient than formally prescribed efforts at comprehensive review, dynamic rulemaking can still prevent an agency from employing its limited resources in the most productive way. Having completed a burdensome rulemaking exercise, it is not necessarily a wise use of resources to reinvent the wheel in another proceeding devoted to the same regulatory issue. The tendency for this to occur may be reinforced by the APA's failure to distinguish between recently promulgated and long-standing rules when it provides that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule."[204] A stakeholder who is dissatisfied with the outcome of a rulemaking exercise may petition the agency to amend or repeal it the day after it becomes final. Prior to that, stakeholders can petition the agency to extend the effective date,[205] and prior to publication in the *Federal Register* stakeholders can, at least in some agencies, file motions for reconsideration.[206] Responding to such petitions takes time and resources that

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[202] For a comprehensive account of regulatory capture, see PREVENTING REGULATORY CAPTURE, *supra* note 38.

[203] *See, e.g.*, EPA Air Toxics Rules, *supra* note 58, at 2–5 (listing the chronology of each revision and change); *id.* at 5–6 (summarizing the implications of the revisions and noting they individually and cumulatively tended to favor industry and make the rule more lax over time).

[204] 5 U.S.C. § 553(e) (2012).

[205] *See, e.g.*, TSCA Test Rules, *supra* note 58, at 8–12 (detailing four extensions of the effective date for the testing rule as a result of requests from the chemical manufacturers).

[206] *See, e.g.*, Notice of Partial Stay for National Emission Standards and Standards of Performance for Certain Steam Generating Units, 77 Fed. Reg. 45,967, 45,968 (Aug. 2,

the agency could be employing more productively. Enabling statutes that require agencies to revisit their rules on a periodic basis can also be a source of inefficiency. Having just completed the grueling exercise of revising the NAAQS for ozone in early 2008, for example, EPA Administrator Stephen Johnson complained about having to initiate the same resource-intensive process every five years and urged Congress (unsuccessfully) to relieve the agency of that obligation.[207]

4. Procrastination and Delay

While an agency can use dynamic rulemaking to put off aspects of a rulemaking exercise for which it lacks adequate information, it can also use it to avoid deciding controversial questions for which it has sufficient information but lacks the political support (or the political will) to resolve the conflict. Dynamic rulemaking can allow agencies to address issues that are tractable while deferring those that are not, but it can also be abused if employed liberally in the interest of comfort and simple expediency, rather than sparingly as a matter of political necessity. It can delay the accomplishment of critical statutory goals, a prospect that is especially troublesome in the case of statutes intended to protect potential victims from risks to their health or safety. For example, EPA's repeated deferral of deadlines for complying with the permit requirement of its halogenated solvents rule over the course of a decade was arguably inconsistent with the Clean Air Act's goal of subjecting major emitters of hazardous air pollutants to the statute's operating permit program.[208] Similarly, OSHA's multiple stays of the hazard communication provisions of its formaldehyde standard arguably left employees in workplaces exposed to that carcinogenic chemical without critical information on their health risks that the statute meant for them to have.[209]

5. Inconsistency with Comprehensive Analytical Rationality

By permitting agencies to proceed incrementally, dynamic rulemaking can discourage policy makers from paying sufficient atten-

2012) (noting EPA received petitions "from a number of interested parties requesting reconsideration").

[207] *See, e.g.*, Steven D. Cook, *EPA Sets Stricter Standards for Ozone, but at Level Weaker than Advisers Sought*, 39 Env't Rep. Current Dev. (BNA) 493 (Mar. 14, 2008) (Administrator Johnson urges Congress to amend the Clean Air Act to eliminate the five-year review requirement).

[208] *See* EPA Air Toxics Rules, *supra* note 58, at 2–3 (noting that EPA deferred the requirement of operating permits until December 2004).

[209] *See, e.g.*, OSHA Case Studies, *supra* note 58, at 3–4 (detailing seven stays of the hazard communication provisions of its formaldehyde rule over a period ranging from December 1988 through August 1991).

tion to how a rule will affect stakeholders and overall economic well-being. When an agency decides to drop a portion of a rule, as when OSHA dropped the lift-slab portion of its concrete and masonry standard,[210] there is little loss of the value that comprehensive analytical rationality can lend to decisionmaking. This is because the agency will most likely examine the economic and/or environmental impacts of the dropped provision in the subsequent proceeding that revisits the issue. When an agency adopts a strategy through which it modifies existing rules incrementally, however, it may head down an irreversible path toward a destination that a more comprehensive examination of the problem would have avoided. Rather than making modest modifications to the existing rule in response to episodic changes, it may in some cases be more rational for the agency to step back, reexamine the basic assumptions and analyses underlying the original rule, and consider the possibilities of comprehensively revising the rule, replacing it with a new one, or even repealing the rule altogether. Incremental reactions to episodic pressures will rarely result in such comprehensive changes; nor are they likely to result in changes to "entrenched" rules that are "imbedded in industry practice."[211]

Advocates of formal retrospective review argue that it is a good idea for agencies to reexamine the costs and benefits of previously issued rules from time to time with an eye toward revising or repealing rules that no longer comport with statutory mandates and that impose costly burdens on industry.[212] Some argue that agencies too often promulgate regulations hurriedly in response to crises and therefore devote insufficient attention to the accuracy of their predictions and the possibility that they are overreacting to the events that gave rise to the crises.[213] Technology or markets may evolve in ways that render previous regulatory interventions undesirable.[214] Over time, "the cumulative burden of decades of regulations issued by numerous federal agencies can both complicate agencies' enforcement efforts and impose a substantial burden on regulated entities."[215]

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210 *See id.* at 2 (describing OSHA's reproposal of "its construction safety standards for lift-slab operations").

211 *See, e.g.*, Eisner & Kaleta, *supra* note 6, at 153.

212 *See* Sunstein, *supra* note 9, at 590 (observing that some well-motivated rules no longer make sense and that changed circumstances and technologies can render rules obsolete).

213 *See, e.g.*, Bull, *supra* note 4, at 271–74 (referring to the "crisis and response" system and the problem of regulatory accretion).

214 *See, e.g.*, Sunstein, *supra* note 9, at 590 (suggesting that "new technologies" can make rules "obsolete").

215 ADMIN. CONFERENCE OF THE U.S., *supra* note 4, at 1; *see also* Sunstein, *supra* note 9, at 588–89 (describing the problem of cumulative burdens).

Assuming that agencies have the resources to comply with them, formal retrospective review requirements provide an opportunity to purge the Code of Federal Regulations of outdated and unnecessarily burdensome regulations.[216] Professors Joseph Aldy and Cary Coglianese believe that this type of "regulatory lookback" is such a good idea that agencies should create plans for post-promulgation review of major regulations at the time that they promulgate the final rules.[217]

With respect to concerns about imposing undue burdens on regulated parties, our research indicates that agencies are in fact addressing both serious and trivial problems in existing rules as they become aware of their existence. Whether they are addressing the same problems that synoptic, retrospective review would reveal is an open question. It does appear that while dynamic rulemaking may not fully address all of the concerns that motivate advocates of retrospective review of rules, it should at least ensure that agencies are addressing quite a few pressing problems relevant to affected parties that arise after rules are promulgated.[218] As Eisner and Kaleta note, agencies are likely to hear about serious problems with rules during their routine implementation and enforcement activities,[219] and our research suggests that they are addressing at least a significant portion of those concerns.

On the other hand, our findings do provide preliminary support for some retrospective review in settings where the diffuse beneficiaries' needs might be ignored as a result of these informal, "squeaky wheel" processes. Agencies appear to be at least somewhat responsive to petitions, informal lobbying, lawsuits, and political pressure, and they make revisions accordingly. But these triggers may be largely inapplicable where changes in information or technology suggest that the agencies should increase the stringency of existing rules, but where beneficiary constituencies are insufficiently well organized to take advantage of them. In these settings where diffuse interests are under-

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216 ADMIN. CONFERENCE OF THE U.S., *supra* note 4, at 1–2.

217 *See, e.g.*, ALDY, *supra* note 5, at 66–67 ("When formulating new regulations, agencies should present in the rule's preamble a framework for reassessing the regulation at a later date."); Coglianese, *supra* note 9, at 62–63 (stating that agencies should include a plan for the retrospective evaluation of a proposed rule in its prospective regulatory impact analysis).

218 *See* ALDY, *supra* note 5, at 48 (suggesting that some of the rules promulgated as a result of formal retrospective reviews under the executive orders "may have been already in progress"); *id.* at 51 (concluding that agencies have identified rule modifications that were already in the pipeline as revised rules under the executive orders).

219 *See, e.g.*, Eisner & Kaleta, *supra* note 6, at 148–49 (explaining that an agency typically reviews rules only when "it thinks something is wrong").

represented, a more comprehensive retrospective review process may indeed be warranted.

6. Transparency

Agencies can effect a substantive policy change in a non-transparent way by characterizing a revision as correcting an "error" or "inadvertent mistake." When EPA corrected a punctuation "error" to reduce the reach of its secondary aluminum rule[220] and when OSHA changed "should" to "shall" in the concrete and masonry construction safety rulemaking[221] and added a respirator option for employers in the formaldehyde rulemaking,[222] the agencies arguably accomplished important changes in direct final rules for which they did not invite public comment. Since corrections of "technical errors" are not likely to be reported by even the trade press, these were essentially invisible to the general public. Careful readers of the indexes to the *Federal Register* might have discovered the changes, but they might well have concluded that they were of little consequence given the agencies' failure to invite comment.[223] Similarly, extensions of effective dates often take the form of interim rules or direct final rules that may attract little public attention, but may put off compliance with important protections for years.

Perhaps the most troubling employment of dynamic rulemaking in a nontransparent way that we identified in our case studies was EPA's use of annual "interim rules" to publish vague after-the-fact descriptions of changes to TSCA test rules.[224] These changes were made with little or no explanation and were often published after they had been implemented by the manufacturers who were subject to the original rules. It may be true that most members of the public are not

220 *See* EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 4–5 (describing this change in an October 2005 direct final rule).

221 *See* OSHA Case Studies, *supra* note 58, at 2 (describing this change in an October 1989 direct final rule).

222 *See id.* at 4–6 (discussing various inadvertent errors and omissions associated with specifying respirators in the rule and suggesting that at least one change (adding chin style respirators) appeared to be more than simply a typographical error).

223 Some agencies, such as the Department of Transportation, may also include such changes in updated status reports that remain available to the public for some time after the publication of a final rule. EPA has instituted an online rule tracker that allows the public to follow the development and revision of rules that can be searched in various formats to learn about ongoing developments. *See Regulatory Development and Retrospective Review Tracker*, U.S. ENVTL. PROTECTION AGENCY, http://yosemite.epa.gov/opei/RuleGate.nsf/ (last updated Sept. 29, 2016).

224 *See* TSCA Test Rules, *supra* note 58, at 1 (discussing EPA's use of interim rules that publicized changes to the test rules that had been negotiated with industry months earlier, and in many instances were published so long after the fact as to be rendered moot with regard to their implications for the ongoing industry testing).

interested in arcane changes to the protocols of test rules, but that need not always be the case. Test rules for some high profile chemicals might very well attract the interest of environmental groups or advocates of those who are exposed to them in the workplace. It may be that EPA is in a hurry to make the changes because many involve ongoing testing regimes, but that should not allow it to make a mockery of the APA-prescribed rulemaking process.

7. Balanced Access

In a similar fashion, dynamic rulemaking can be inconsistent with balanced access to the administrative process. When accomplished in response to a motion to reconsider or in a direct final rule, a "clarification" that is in reality a change in the scope of applicability of the parent regulation (perhaps in response to pressures to change the substance of the rule) avoids the public participation requirements of the APA. Likewise, extensions of effective dates, which invariably favor regulated entities, are inconsistent with balanced access to the decisionmaking process when they are accomplished through direct final rules. When a revision is accomplished as part of an "interim rule" that is published long after the change was in fact implemented, the public has no role to play at all, and the process becomes heavily weighted in favor of the entity (invariably the regulated entity in the case of TSCA testing rules) that instigates the change. In all of these instances, the agency need not pay as much attention to providing reasons for the changes, and the decisionmaking process becomes less accountable.

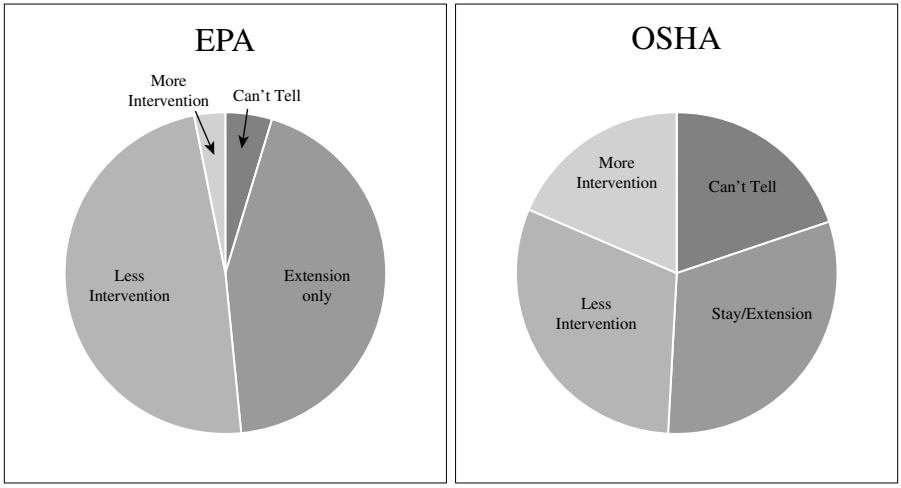
As a result, there may be a deregulatory drift in some areas that reflects the domination of regulated parties in nontransparent revision processes. Our data in fact provide some support for this possibility. As mentioned earlier, about two-thirds of the EPA TSCA revisions were apparently made at the request of regulated parties.[225] Moreover, as part of a pilot investigation for our next study, we conducted a coding of the substantive nature of each change made to each revised rule. (A revised rule often involves multiple changes per rule.) This investigation revealed that a high fraction of EPA's TSCA revisions appeared to weaken the original rule either by dropping or rolling back requirements or by extending compliance deadlines.[226] A majority of OSHA's revisions similarly appeared to weaken a rule or

[225] *See supra* text accompanying notes 102–03 (describing interest group pressure as a common trigger for revisions to rules).

[226] *See supra* fig.10 (showing the percentage of revisions for each set of rules that involve compliance deadlines).

extend compliance deadlines, although the relative proportion of these weakening changes was less dramatic.[227] See Figure 11. While these early results have not been subjected to quality checks and provide only a preliminary view of the nature of the revisions, they are nevertheless supportive of the possibility that regulated parties do enjoy advantages in some revision processes.

FIGURE 11. PRELIMINARY ASSESSMENT OF THE SUBSTANTIVE IMPLICATIONS OF CHANGES MADE IN REVISED RULES AT EPA AND OSHA



8. Avoiding Centralized Review

Presidents since Richard Nixon have issued executive orders enabling the White House to screen important rules developed by executive branch agencies. This process has become institutionalized and more systematic and forceful since it was moved to OIRA early in the Reagan Administration. Although the nature and propriety of such centralized review is a controversial subject, dynamic rulemaking can undermine the salutary coordinative role OIRA can play. When an agency accomplishes a significant change in the substance of a regulation in response to a motion to reconsider or reopens the rulemaking to promulgate a "supplemental rule," as OSHA did in the asbestos rulemaking,[228] the action may not undergo interagency vetting because the change by itself is unlikely to cross the threshold of signif-

[227] For FCC, the majority of the changes made in the revised rules could not be categorized as involving either greater or less regulatory intervention. The changes to regulatory authority were split somewhat evenly between these two categories.

[228] *See* OSHA Case Studies, *supra* note 58, at 7–8 (recounting OSHA's use of a supplemental rule to focus on whether certain forms of non-asbestiform tremolite,

icance that prompts review under relevant executive orders. Likewise, when an agency proceeds incrementally by resolving some policy issues and deferring others pending the collection of further information, it may be able to avoid OIRA review of one or more of the deferred issues to the extent that they do not constitute major rulemakings.

C. Disciplining Dynamism

While it can serve important functional needs, dynamic rulemaking is only as good as the processes through which it occurs. Even the best intentions will not lead to desirable revisions if agencies make decisions in ways that sidestep important administrative law values or, even worse, are patently illegal. Yet this acknowledgement still raises the central question of how one distinguishes a procedurally "good" revision from one that is "bad" or even "ugly."

One might attempt to sort good from bad by coding the substance of each change in a revised rule, but an effort to measure the quality of revisions would pose slippery methodological issues and may ultimately prove futile. For example, attempting to sort the good from the bad revisions based on whether the revised rule decreased or increased the stringency of regulatory requirements might suggest that industry had a heavy hand in encouraging a revision. On the other hand, such an assessment would reveal little about whether the change was nevertheless justified based on important new information that became available to the agency after the rule went into effect. One might also attempt to evaluate the substantive quality of revisions by tracing whether commenters who lost arguments during the original notice and comment process persisted and convinced the agency to promulgate their preferred approach as a revised rule. Yet again, the fact that a rejected comment was ultimately accepted in a revised rule may simply indicate that experience proved the commenter right, not that the revised rule was flawed.

Since administrative law defines the quality of rulemaking by the accountability of the underlying process rather than in substantive terms,[229] a consideration of the procedures agencies employ for revising rules may provide the best practical litmus test for assessing the quality of those revisions. In an effort to begin a conversation

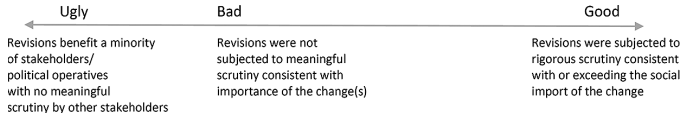
anthophyllite, and actinolite should continue to be regulated with the same standards or differently).

[229] *See generally* Peter L. Strauss, *On Capturing the Possible Significance of Institutional Design and Ethos*, 61 ADMIN. L. REV. (SPECIAL EDITION) 259, 268–69 (2009) (describing and charting legal mechanisms for multiple, overlapping institutional oversight that helps ensure agency accountability).

about this, we offer a very simple model for assessing the procedural integrity of rule revisions that pivots on whether the agency institutes adequate accountability mechanisms. If the agency approaches revisions in an ad hoc fashion, with no structure for ensuring adequate public scrutiny of the changes, the revision begins to take on many of the negative characteristics described above in Section IV.B. Conversely, revisions are "good" when they not only perform the needed functions described in Part III above, but also provide opportunities for rigorous scrutiny by all interested parties in a balanced fashion, even though this scrutiny may not always entail formal notice and comment. Because it subjects the agency's changes to the light of deliberation and inter-institutional oversight, such scrutiny can go a long way toward avoiding the downsides of dynamic rulemaking.

The graphic below situates these three categories of revised rules on a spectrum.

ASSESESING DIYNAMIC RULEMAKINGS



This framework does not require every revision to undergo full notice and comment. An agency should be able to correct simple typographical errors without fanfare if there is a process in place for a skeptical agency official to review the change to ensure that it is inconsequential as a substantive matter. In addition, agencies may properly subject more substantive changes to some sort of revision protocol short of full notice and comment in some cases. An agency could, for example, create a small interdisciplinary team of agency staff, including an attorney from the agency's Office of General Counsel, to review changes that the initiating office believed to be inconsequential. If the team determined that the changes were potentially consequential, the revision would then move to a higher level of public oversight. Intermediate levels—those that perhaps engage stakeholders informally or approach the revision as a direct final rule—would nevertheless need to include some assurances that the agency would actively solicit participation by all relevant stakeholders, perhaps even with a small subsidy. The key point is that substantive revisions that have not been subjected to balanced public oversight are problematic exercises of dynamic rulemaking from the perspective of agency accountability. Process-related concerns become still more

pressing when the impetus for a revision comes from external stakeholders, rather than from environmental developments such as shifts in technology, political change (for example, a change in agency leadership), or court opinions that alter the legal landscape.

Our data do not provide sufficient information to sort each of our revised rules into these three categories, but in the course of our analysis—particularly the case studies—we saw individual examples of good, bad, and ugly rules. Perhaps an even more interesting, if tentative, observation is that the four sets of agency rules in our study appear to clump within the good, the bad, and the ugly categories. FCC, for example, appeared to engage in the revision process more openly with a greater portion of its revisions subjected to what appeared to be relatively diverse public scrutiny.[230] In more than one instance, moreover, FCC revisions were triggered by some development that was either external to the agency—such as technological change—or was explicitly bracketed as a contentious issue requiring further analysis and discussion.[231] FCC, for example, sometimes breaks off individual topics or issues within a larger rule and tackles each sequentially, often with notice and comment processes that in and of themselves can recur before FCC is satisfied with the deliberations. This was clearly the case in the low-power FM proceeding. As discussed earlier, the Commission used a series of further notices to refine questions and collect additional information on a number of key issues. This approach seemed to allow more diverse and focused participation on individual issues, particularly as compared to the unwieldy and often poorly explained revisions promulgated by OSHA and EPA.[232] Why FCC was particularly exemplary in this regard is an important question that is beyond the limits of this study, although one might speculate that it is because the agency operates in a contentious environment where the key stakeholders on different sides are often well organized and attentive to what it does. We will continue to

[230] *See, e.g.*, FCC Cases, *supra* note 58, at 1 (describing how FCC published an NPRM prior to revising subscription television rule); *id.* at 3 (noting the diversity of participants that engaged in commenting on potential revisions to financial interest and syndication rules); *id.* at 9 (noting that the three competing interests regulated by the low-power FM rule were represented in the rulemaking process); *supra* text surrounding notes 86–87 (discussing the multiple petitions that triggered revisions at FCC, many of which did not ultimately go through notice and comment).

[231] *See, e.g.*, FCC Cases, *supra* note 58, at 5 (discussing how changes in technologies prompted the need for a revised rule); *id.* at 6 (noting the development of new technologies that prompted rule revisions to Low-Power FM Rule).

[232] *See, e.g.*, *id.* at 9 (describing how FCC would defer some issues for resolution later while resolving less controversial issues in rule revisions).

explore the policy environment and stakeholder dynamics that may lead FCC to operate in more accountable ways in future work.

The revisions to OSHA's health and safety standards and EPA's air toxics rules, based both on the case studies and preliminary clues from aggregate data, appear to contain a larger portion of "bad" rules than FCC revisions. Certainly some of the revisions examined in the case studies that neither employed notice and comment nor engaged the full range of affected parties fit the characteristics of "bad" revisions. Because these revisions sometimes lacked any accessible discussion of the agency's rationale for forgoing notice and comment, or any discussion of how the agency considered the interests of unrepresented stakeholders, they left the impression of ad hoc, unaccountable rulemaking. Moreover, at least some of the changes were apparently not triggered by new discoveries, but were based on information that should have been available in the parent rulemaking.[233]

And at least some of EPA's revised rules under TSCA appear to fall into the "ugly" category. Unlike the "bad" examples, which might have involved the failure of agencies to actively solicit skeptical review, these "ugly" revisions—emerging in both the aggregate data and the case studies—consisted of agreements with regulated parties that were struck without any significant public oversight.[234] The revisions were published in the *Federal Register* a year or more after the parties had reached agreement and the agreements had taken effect. The agency's failure to explain the nature of the changes in the *Federal Register* made the after-the-fact notices all but useless. Although it is possible that none of the dozens of changes were consequential, the process the agency employed to revise its final rules provides no basis for comfort in that regard.

These preliminary efforts at categorizing rule revisions should not overshadow our more important conclusion that it is difficult, if not impossible, to assess either the procedural or substantive integrity of most of the rule revisions in this study based on the information the

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[233] *See, e.g.*, EPA Air Toxics Rules (Large Rule: Secondary Aluminum), *supra* note 58, at 5, 7–8 (explaining that EPA made substantive changes to the original rule with regard to covered actions, but the changes were necessitated by drafting problems that created "typographical" errors in the original rule); OSHA Case Studies, *supra* note 58, at 2 (noting OSHA changed the word "should" to "shall," thus making a standard mandatory, but based the change on drafting errors in the original rule).

[234] *See* TSCA Test Rules, *supra* note 58, at 4 (describing revisions to the Cumene rule as "cryptic 'interim rules,' . . . mak[ing] the prospect of meaningful public oversight difficult if not impossible"); *id.* at 7 (explaining that changes to the original Anthraquinone test rule were "effectively outside the ambit of public notice"); *id.* at 12 (describing "incremental tweaking" to Fluoralkenes rule as a result of "pressure . . . coming uniformly from industry").

agencies provided. At the very least, onlookers should be able to assess the procedures the agency followed and the justifications it provided for the level of stakeholder input it solicited for any particular revision. Moreover, simple recordkeeping—that tracks revisions for rules—should be standard practice so that the changes do not drop out of sight. These conclusions provide the underpinnings for the procedural recommendations to which we now turn.

D. Possible Reforms

Based on this preliminary glimpse at what may be an even more complex and elaborate world of dynamic rulemaking, we offer several preliminary suggestions for reform. Because there is so much to learn, we offer these suggestions as a conversation-starter about possible "good ideas"[235] rather than as a playbook that calls for immediate action. In initiating this discussion, we also focus on processes that generally operate without active judicial oversight since we share Connor Raso's skepticism that the courts will be able to play a meaningful role in overseeing this particular area of activity under the current construction of the APA.[236] The varied considerations, circumstances, and justifications that motivate agency revisions make the development of predictable rules for review—particularly through the judiciary—a perilous exercise.

1. Discouraging Unaccountable Dynamism

First, and at the risk of repetition, agencies should afford meaningful opportunities for all potentially affected entities to scrutinize substantive revisions. When the implications of a revision appear potentially important, the agency should vet the revision widely among the diverse stakeholder community in ways that are well documented and rigorous. This type of review need not require full notice and comment in all cases. It should, however, entail some form of active solicitation and notification of possible stakeholders and clear explanations of the nature of changes.[237] The agency should place all

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[235] *See* Eisner & Kaleta, *supra* note 6, at 155 (concluding that given the significant differences in agency rulemaking environments, it is more appropriate to provide "a list of 'good ideas' from which agencies can choose" rather than offer specific prescriptive proposals for agency action).

[236] *See, e.g.*, Raso, *supra* note 72, at 68, 72–73 (arguing that because of the ambiguity of the "good cause" provision, "courts are imperfect enforcers of rulemaking procedures" and leave the agency considerable discretion to avoid notice and comment processes).

[237] *See* ALDY, *supra* note 5, at 70 (urging agencies to engage in active outreach to stakeholders and the public when they engage in formal retrospective review of existing regulations).

of these communications in an accessible rulemaking docket that it makes available on its website.

On the other hand, procedural shortcuts are inappropriate when an agency uses dynamic rulemaking as a vehicle for adapting to changes in the political or ideological environment. The agency should initiate a new round of notice and comment by publishing an NPRM in the *Federal Register* as a matter of course. The new head of an agency at the outset of a presidential administration may be tempted to reverse his or her predecessor's rulemaking initiatives quickly and quietly, but the APA requires notice and comment for substantive amendments to regulations that have been published in the *Federal Register*, even if they have not yet gone into effect. Similarly, agencies should not change the substance of a rule in potentially significant ways in response to a motion to reconsider without giving the public an opportunity to comment on the changes identified in the motion. Agencies should reserve direct final rules for typographical errors and other clear mistakes, and they should not employ direct final rules to clarify misunderstandings or to reflect changes in factual or technical settings, shifts in the political environment, or developments in other agencies.[238]

2. *Encouraging Virtuous Dynamism*

Dynamic rulemaking reflects the open-ended aspect of rulemaking as envisioned by the authors of the Administrative Procedure Act. Yet it is by no means clear that federal agencies are taking full advantage of its virtues. While the process for revising rules should be disciplined, agencies should not be reluctant to revise regulations in response to changes in facts, in industry practices, or in the policy environment to ensure that they achieve statutory goals efficiently and effectively. They should be attentive to feedback from agency officials in the field concerning how regulated entities are adapting to their rules in the real world. And they should design reporting requirements in rules to ensure that they yield accurate information on the impacts of those rules on regulated entities and intended beneficiaries.[239]

Congress should provide additional resources and incentives to encourage agencies to undertake these types of dynamic assessments

[238] *Cf.* Eisner & Kaleta, *supra* note 6, at 167–68 (suggesting that direct final rules are especially appropriate for corrective actions—such as "deleting obsolete rules or fixing clear 'mistakes' in existing rules").

[239] *See* Coglianese, *supra* note 9, at 62–63 (recommending that regulatory impact analyses for major rules include a plan for evaluating the costs and benefits of the underlying rule in light of experience with its application).

of their rules seamlessly, without the necessity of formal, resource-intensive review processes for all regulations. The need to encourage agencies to engage in these revisions seems particularly acute when changes in technology and information warrant revisions benefiting more diffuse interests that are less likely to raise such issues. Our data suggest, at least preliminarily, that a considerable amount of the revision activity occurring in agencies is triggered by pressure from groups that are intensely affected and have sufficient resources to bring their concerns to the agency's attention. Without requiring them to revisit all regulations, Congress should encourage agencies proactively to assess the need for revisions in selected areas where the beneficiaries of regulation are apt to be poorly represented. In short, agencies should be mindful of the possibility of tightening the scope or stringency of existing rules that are not yielding anticipated benefits as well as the possibility of reducing the scope or stringency of rules that are imposing unanticipated burdens on regulated entities.

3. Formalizing Dynamism

As mentioned above in Section IV.B.5, the active, yet informal world of dynamic rulemaking calls into question the need for more formalized processes for retrospective regulatory review. To the extent that the interests of regulated parties are already being advanced expeditiously through various informal revision processes, the implementation of more formal and cumbersome retrospective review may actually be a net detriment to ensuring regulations are responsive to change. Formal retrospective review also tends to be costly if taken seriously, and without additional congressional appropriations, agencies may shift their current resources dedicated to informal rule revisions to the mandated, formal process for regulatory review.[240] Alternatively, agencies might divert funds from addressing new problems and mandates to satisfy the congressional demand for formalized retrospective review. Both approaches to reallocating agency resources involve worrisome tradeoffs that are not easily justified.[241]

It is, of course, possible that in revising rules, agencies are overlooking larger systematic problems, particularly those that lack high-

[240] *See* ALDY, *supra* note 5, at 53 (explaining that "agencies do not have the time or personnel to undertake detailed analysis of every rule"); Bull, *supra* note 4, at 282 (noting the costs of agency review of existing rules).

[241] *See, e.g.*, Eisner & Kaleta, *supra* note 6, at 148 (discussing agency concerns about time and resource constraints required for review of existing rules). One suspects that this may be a hidden motivation of some regulatory reformers calling for mandatory retrospective review of all significant agency rules.

stakes advocates. Yet, without resources targeted to the purpose, agency officials are likely to be reluctant to conduct rigorous retrospective reviews, making them little more than a time-consuming and costly paper tiger.[242] If the President or Congress is serious about implementing formal comprehensive retrospective review of regulations, they should see to it that the agencies receive adequate resources to accomplish that task.

On the other hand, more limited efforts to formalize dynamic rulemaking may be in order. In our study, the ad hoc nature of many revisions indicates that agencies could do a better job of developing explicit processes that govern revisions to their rules. First and foremost, for example, an agency should simply explain in the preamble to the *Federal Register* notice for a rule revision the process it employed for securing skeptical review of the changes it made. For corrections that consist of addressing obvious typographical errors and the like, this might consist of a sentence or even a phrase in the preamble to the one-paragraph correction.

For more substantive revisions, the agency's explanation for how it ensured rigorous review by the full range of affected interests should be more extensive. Not all revisions that have substantive implications require notice and comment review. For example, when an agency makes a revision that has public implications that appear to be noncontroversial and the agency has solicited skeptical input from the full range of stakeholders and received no adverse comment, direct final rulemaking is a good way to conserve agency resources. However, when the agency is not confident of the noncontroversial nature of its change and believes it would benefit from added input obtained through notice and comment, it is well advised to publish a notice of proposed rulemaking in lieu of a direct final rule.

Although the courts do not provide a complete solution, they could also play a more constructive role in encouraging additional explanation and justification from the agencies, particularly when agencies summon the "good cause" exception. As mentioned, courts vary considerably in the level of deference they afford to an agency's invocation of the good cause exception, and there is no coherent framework for agencies to use in determining when or how they should use that exemption. To remedy this gap, Professors Hickman and Thomson propose a more disciplined approach to judicial review that places the burden on the agency to justify good cause when

[242] *See id.* at 148 (recounting sentiment among Bush Administration agency officials that the "presidentially-initiated review . . . did not give the agencies enough time to conduct thorough review, and many said that it produced little of value").

promulgating rules without notice and comment.[243] The authors also propose an initial set of factors the courts might consider in assessing the agency's decision to forgo notice and comment, including the agency's responsiveness to comments filed post-promulgation, the agency's motives for truncating the process, and the agency's effort to reach out to affected groups to gather information post-promulgation.[244] Imposing some adverse consequences on agencies for abusing their discretion may increase the vigilance of agency staff and encourage them to provide more accessible and complete explanations for making use of the good cause exception for some rule revisions.

Conclusions

Our study indicates that an agency's promulgation of a final regulation is hardly the end of the rulemaking process. Although it is based on an examination of only four programs implemented by three agencies, the technical, political, and institutional characteristics of those programs differ along what are arguably the most important dimensions of variation in the general environment of federal regulation. Although further analysis will undoubtedly add to our understanding of the richness and complexity of dynamic rulemaking, we would be quite surprised to discover that it is not a ubiquitous phenomenon given the critical functions it performs.

If our observations may not be surprising to most practitioners and some scholars, the informal process of rule revision and its implications have been all but ignored in the academic literature. The realization that rulemaking is an ongoing, dynamic process is also at odds with the assumptions that underlie existing and proposed requirements that agencies proactively review all or a large share of their regulations with an eye toward identifying and revising or eliminating those that are outdated or otherwise undesirable.

In fact, agencies are not rigid and insulated from their environments as portrayed by regulatory reformers and by more general stereotypes of bureaucracy; the agencies included in our study were generally quite responsive to changing conditions and to the input of those who were most directly affected by their rules. In this regard, the largely reactive process of dynamic rulemaking is arguably a more efficient and reliable mechanism for identifying "unnecessary regula-

[243] *See* Hickman & Thomson, *supra* note 77, at 309–15 (advocating courts place the burden on the agency to justify the use of post-promulgation notice and comment).

[244] *See id.* at 315–20 (setting out factors that courts can consider in determining whether an agency has adequately rebutted the presumption against post-promulgation notice and comment).

tory burdens" than resource-intensive lookback requirements. Perhaps a more legitimate concern is that dynamic rulemaking may sometimes be driven by intensely interested regulated entities at the expense of more diffuse public interests, and that this may take place through mechanisms that lack transparency. This possibility together with dynamic rulemaking's procedural remedies is a fertile area for further inquiry.

Appendix
Methods for Locating and Coding Revised Rules

Selection of Sets of Rules for Study

In order to avoid sub-sampling, we identified sets of rules from three separate, relatively different agency programs:

- testing rules with relatively high technical complexity promulgated by EPA under the Toxic Substances Control Act (40 C.F.R. Part 799, Subpart B);
- two different sets of worker protection rules promulgated by OSHA under the Occupational Safety and Health Act (nearly all of the "General Industry" and "Construction" rules promulgated at 29 C.F.R. 1910 and 1926; these two sets include less technical and scientifically intensive rules, that is, for appropriate scaffolding and fire egress, and more scientifically intensive rules for hazardous substance exposures); and
- two sets of rules of medium technical-complexity (that is, not as technically straightforward as marking exits for fire prevention by OSHA and yet not as complicated as testing for chemical toxicity in animals by EPA) promulgated by the FCC (47 C.F.R. Part 73, Subparts E (television broadcast stations) and G (low power FM broadcast stations)).

The total rules for study *(N)* = 138.

An initial list of rules was generated by collecting the *Federal Register* citations provided at the end of each of the *Code of Federal Regulations* (CFR) sections included in our study. See illustration in box below. These *Federal Register* citations provided the seed population of rules that we used to search for revised rules, as described in more detail below.

> [54 FR 9317, Mar. 6, 1989, as amended at 55 FR 14073, Apr. 13, 1990; 56 FR 15832, Apr. 18, 1991; 59 FR 43270, Aug. 22, 1994; 61 FR 9238, Mar. 7, 1996; 67 FR 67964, Nov. 7, 2002; 71 FR 16672, Apr. 3, 2006; 76 FR 80738, Dec. 27, 2011; 77 FR 17776, Mar. 26, 2012; 78 FR 9313, Feb. 8, 2013]

Example of the Federal Register *History Found at the End of a CFR Section*

Because this study is part of a larger project that depends on access to the complete agency docket index, we only examine rules,

including seed rules, that are promulgated after the mid-1970s. In cases where the first rule is promulgated prior to the mid-1970s, we identified as the parent rule the first revision dating in the mid-1970s or after. This methodological limitation serves to underestimate the number of revisions in our dataset.

Because we had already collected limited data on revised rules in an earlier study of EPA's technology-based (Maximum Achievable Control Technology, or MACT) standards promulgated for hazardous air pollutants under the Clean Air Act, we also included that data in our study. Rather than use the CFR to identify the rules, we relied on EPA's own online database of all of the EPA MACT rules at http://www3.epa.gov/airtoxics/mactfnlalph.html.

Finding Revisions of Rules in the Database

Identifying the revisions that grow out of the parent rules is not a simple matter. While some of this tracking is accomplished in the CFR histories and also in Regulation Identifier Numbers (RIN) required through President Clinton's Executive Order 12866, signed in 1993, neither of these tools provided comprehensive tracking for purposes of our study.[245] (Note that after 2007, even the RIN tracking is not continued in the online systems.[246]) While we have bracketed the legal labeling and tracking problems of rules and revisions in this paper, the issue merits further study and attention.

FCC and OSHA

The initial database of rules contained the seed rules (seed rules consisted of a mix of parents and revised rules) that we used to track down revisions. We used the citation of each seed rule as the search term and searched each of the seed rules in Westlaw's *Federal Register* database. We screened each hit based on whether a rule was explicitly linked to an earlier parent rule and promulgated as some type of modification (including amendments, corrections, deletions, additions, stays, extensions, etc.) to that rule in the perambulatory discussion. This method produced more than 94% of the revised rules in our database.

245 *See* OFFICE OF INFO. & REGULATORY AFFAIRS, OFFICE OF MGMT. & BUDGET, *How to Use the Unified Agenda*, REGULATORY INFO. SERV. CTR., http://www.reginfo.gov/public/jsp/eAgenda/StaticContent/UA_HowTo.jsp (last visited Oct. 5, 2016) (noting that "[e]very entry appearing in the Unified Agenda or Regulatory Plan is assigned a Regulation Identifier Number (RIN), in accordance with the requirements for the Unified Agenda set forth in section 4 of Executive Order 12866").

246 *See id.* (discussing Regulation Identifier Numbers).

A second, much smaller source of revised rules (1% for FCC; 11% for OSHA) were not picked up in the Westlaw searches. Instead, they showed up in our original set of rules culled from the CFR history section, but were promulgated after an earlier initial rule in the history for a CFR section and appeared to modify that rule. We counted a rule from the CFR history as a revised rule—even though it was *not* picked up in our Westlaw searches—when we could identify substantive modifications to the parent rule that made the rule appear to be a revision rather than a largely new rule destined primarily for a section of the CFR outside of the scope of our study.

EPA TSCA Test Rules

We obtained the full docket index for each test rule in our sample. In these docket indices, EPA lists all revisions to the initial parent rule (as well as considerable other detailed information normally missing from docket indices). We ultimately relied on EPA's own record of rule revisions after spot-checking EPA's docket records against independent Westlaw and CFR searches to verify that there were no missed revisions for a subset of rules. Indeed, EPA's dockets were unusually thorough, listing "related" rules and activities in ways that we have not witnessed in the FCC, OSHA, and EPA MACT docket indices.

EPA MACT Rules

EPA maintains an online site for each MACT rule that lists all of the revisions and changes to each of the parent rules at http://www3.epa.gov/airtoxics/mactfnlalph.html. We carefully screened each listed revision for each parent rule (by clicking the CFR subpart on the webpage), since they were not all connected to the first, originating rule (that is, there are different types of MACT rules for the same industry, as well as residual risk rules). Again, we assumed EPA's records provided the complete list of revised rules.

Conventions on Inclusion/Exclusion

We adopted several conventions to identify rules in the dataset. As long as the subsequent rule identified one of the parent rules in our database as the predecessor (a feature that the agency typically discussed explicitly in the preamble), we considered the linked final rule to be a revision for purposes of our study. The revised rule generally altered part of the text and/or requirements of the parent, but as long as it conformed to our methods (that is, subsequent to and linked to a parent) it was counted as a "revision" even if it wholly replaced

the revised rule or led to the creation of a new subpart of the CFR that fell outside of our initial study. Moreover, if a revised rule altered more than one parent rule, we counted it as a single revision and linked it to what we considered the dominant parent rule. No revised rule was counted more than once in our dataset.

Extracting Information from Each Revised Rule

Each revised rule was recorded in a separate row in an Excel sheet and additional information was collected by law student coders on that rule for further analysis. Two sequential advanced law students were hired as coders. Each worked closely with Wagner; one collected the majority of the descriptive information. The second coder collected additional, more detailed information one year later on each rule. Wagner trained the coders and checked both coders' work at the beginning of the study to ensure accuracy, while spot-checking their work at various points along the way. Because the coding involved almost exclusively extraction work—pulling out docket numbers, dates, page numbers, etc.—there was very little substantive discretion by the coders in this study. Both coders were also instructed in their coding instructions to err on the side of coding "can't tell" in cases that were ambiguous.

The information extracted by coders included the date of the revised rule, the identification of triggers for the revision mentioned in the preamble, the agency's own characterization of the type of revision (for example, amendment, correction), the number of pages of the revised rule in the *Federal Register*, the nature of the agency's engagement of the public as mentioned in the preamble (for example, notice and comment, petition), the number of issues revised in each rule, etc. The original, more detailed coding instructions—provided for each cell in each column—are available on request.

Methods for Statistical Analyses

We worked with a statistician to identify areas of significant differences in the data. The following methods were used by the statistician to support the statistical findings discussed in the paper.

Comparing Rules with Respect to the Use of Notice and Comment

Models were fit with the glmer function from the R lme4 package with a binomial distribution and logit link function.[247] Family (i.e., the

[247] For an explanation of the R lme4 package, see Douglas Bates, Martin Mächler, Benjamin M. Bolker & Steven C. Walker, *Fitting Linear Mixed-Effects Models Using lme4*, 67 J. STAT. SOFTWARE 1 (2015).

grouping of revised rules with a single "parent") was treated as a random effect. Follow-up contrasts were implemented using the R lsmeans package.[248] Odds ratios can be interpreted as $OR = 1.68$, $OR = 3.47$, and $OR = 6.71$ as small, medium, and large effect sizes respectively.[249]

Comparing Rules with Respect to Overall Length (Page Numbers)

All analyses of page numbers were implemented using linear mixed effects models in which family was treated as a random effect. Models were fit with the lmer function from the R lme4 package[250] and p values were based on Satterthwaithe degrees of freedom obtained using the R lmerTest package.[251] Follow-up contrasts of marginal means were implemented using the R lsmeans package.[252] Due to the fact that there was a strong positive skew in the distribution, number of pages was log-transformed prior to fitting models to mitigate the possibility of outliers and heteroscedastic variance. Effect sizes were computed using methods described in Feingold[253] and can be interpreted as $d = 0.20$, $d = 0.50$, and $d = 0.80$ as small, medium, and large effect sizes respectively.

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[248] *See* Russell V. Lenth, *Least-Squares Means: The R Package lsmeans*, 69 J. STAT. SOFTWARE 1 (2016).

[249] *See* Henian Chen, Patricia Cohen & Sophie Chen, *How Big Is a Big Odds Ratio? Interpreting the Magnitudes of Odds Ratios in Epidemiological Studies*, 39 COMM. STAT. - SIMULATION & COMPUTATION 860, 862 (2010) (describing the use of odds ratios in epidemiology and providing calculated odds ratios equivalent to Cohen's d).

[250] *See* Bates et al., *supra* note 247.

[251] *See* Alexandra Kuznetsova, Per Bruun Brockhoff & Rune Haubo Bojesen Christensen, *lmerTest: Tests in Linear Mixed Effects Models*, COMPREHENSIVE R ARCHIVE NETWORK (June 23, 2016), http://CRAN.R-project.org/package=lmerTest.

[252] *See* Lenth, *supra* note 248.

[253] Alan Feingold, *A Regression Framework for Effect Size Assessments in Longitudinal Modeling of Group Differences*, 17 REV. GEN. PSYCHOL. 111 (2013).