Institutional Roles and Goals for Retrospective Regulatory Analysis

Jonathan B. Wiener & Lori S. Bennear*
Duke University

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1. Introduction

Governments have developed significant programs of prospective ex ante impact assessment, seeking to foresee the environmental, economic, and other impacts of new policies and projects (OECD 2018; Wiener 2013), in order to take precautions against risks before they occur and to ensure that new measures will improve social well-being (Graham 2008; Revesz and Livermore 2008; Wiener 2018). Environmental Impact Assessment (EIA), enacted by the US in the National Environmental Policy Act (NEPA) in 1969 and now adopted around the world, calls on decision makers to stop and think ahead about potential future impacts before taking action (*National Environmental Policy Act (NEPA)* 1970; Craik 2008; Wiener and Ribeiro 2016a). Similarly, Regulatory Impact Assessment (RIA)—required by every US President since the 1970s, and increasingly adopted in other countries as well—has emphasized prospective ex ante assessment of the future impacts of proposed new regulations (OECD 2018; Wiener and Ribeiro 2016a).

In recent years, there has been increasing demand to supplement such ex ante analysis with ex post retrospective analysis of past regulation – to add hindsight to foresight. The actual impacts of a rule after it is put into operation almost certainly differ from the ex ante forecasts. The terms of the rule itself, and its implementation, may have changed after its ex ante RIA was initially conducted. Even if the rule has not changed, the social and economic conditions and technology may have changed, altering the impacts of the rule. The joint impacts of multiple rules may interact and accumulate in ways different from the sum of the forecasts of each rule on its own. And ex ante forecasts are inevitably imperfect because experts do not have perfect foresight and may make errors (Tetlock and Gardner 2015). Studies of ex ante RIAs indicate that they may be only roughly accurate, with errors of both overestimation and underestimation of actual costs, benefits, rates of technological change, rates of compliance, and related factors (Harrington, Morgenstern, and Nelson 2000; Office of Information and Regulatory Affairs 2005; Harrington 2006; Morgenstern 2015). Ex ante RIA occurs "when the least is known and any analysis must rest on many unverifiable and potentially controversial assumptions" (Greenstone 2009).

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* Wiener is the William R. and Thomas L. Perkins Professor of Law at Duke Law School, Professor of Environmental Policy and Public Policy at Duke's Nicholas School of the Environment and Sanford School of Public Policy, respectively, and a University Fellow of Resources for the Future (RFF). Bennear is the Juli Plant Grainger Associate Professor of Energy Economics and Policy at the Nicholas School of the Environment and has secondary appointments in the Sanford School of Public Policy and the Department of Economics at Duke University. The authors are grateful for helpful comments on prior drafts by participants in the RFF Advisory Committee meeting on Retrospective Analysis (June 2019) and the RFF Workshop on Retrospective Analysis (September 2019), including chairs Richard Morgenstern and Art Fraas, paper discussants Sally Katzen, Susan Dudley, and Jeff Holmstead, and other colleagues including Reeve Bull. The authors also thank Ashley Shan and Christine Gerbode for excellent research assistance.

The accuracy of ex ante impact assessment can be improved through astute hindsight: learning from past experience via systematic retrospective analysis (Cropper, Fraas, and Morgenstern 2017; Tetlock and Gardner 2015; Gubler 2017). Environmental law itself is the product of social learning about the past adverse impacts of market failures and the need to address them through law. Regulatory systems can incorporate a learning process (Farber 1993; Pidot 2015; Bennear and Wiener 2019b; 2019a) to improve foresight via hindsight—they can couple prospective with retrospective analysis, and use the latter to improve the former (Cropper, Fraas, and Morgenstern 2017; Wiener and Ribeiro 2016b; Aldy 2014; Coglianese 2012).

In addition to the intellectual stimulus for retrospective analysis, there is also a strong political stimulus for such review. The politics of environmental policy in the United States (and many other countries) may simultaneously seek more protection and less regulation.[1] Past rules that over time become mismatches with current needs may foster frustration. This political pressure may lead to calls for "look back" reviews of the existing stock of regulation, especially to reduce costs.

One strategy for threading this political needle is to call for some version of "better" or "smarter" regulation, regulation that is more effective but lower cost, and affords more flexibility in compliance. Indeed, there have been just such calls by every US President, in both political parties, since the 1970s (see discussion in Section 3). For example, President Obama stated in his inaugural address in 2009 "The question we ask today is not whether government is too big or too small, but whether it works" (Obama 2009). Every US President since the 1970s has issued or maintained Executive Orders calling for economic analysis of regulation – including several calling for retrospective reviews of existing regulations (as detailed below). Congress has also enacted legislation to improve regulatory performance through, in part, regulatory review.

Despite these longstanding and bipartisan calls to ramp up retrospective analysis, it has been easier said than done. These efforts appear to have yielded limited results thus far (Cropper, Fraas, and Morgenstern 2017; Wiener and Ribeiro 2016b; Aldy 2014; Coglianese 2013; Lutter 2013; Dudley 2013; Sunstein 2014). The difficulty in successfully implementing ex post

[1] For example, the Gallup Poll Social Series, conducted in March or April from 2000-2006 and again from 2010-2018, asks respondents "Do you think the U.S. Government is doing too much, too little, or about the right amount in terms of protecting the environment." In every year, the plurality of respondents said the government was doing "too little." In 10 out of 15 years for which the survey was conducted, a strict majority of respondents answered "too little" to this question. The lowest percentage with this answer occurred in 2010 when 46% responded too little, while 15% said "too much" and 35% said "about the right amount." At the same time, the Gallup Poll Social Series, conducted in September annually since 2001 (with two extra surveys in February and June of 2002), asks "In general, do you think there is too much, too little, or the right amount of regulation on business and industry." In every year except for two (2002 and 2006), the plurality of respondents answered "too much," with the percentage stating "too much" ranging from 34-50. (The survey was conducted three times in 2002, following the terrorist attacks of Sept. 11, 2001. In February 2002, only 28% of respondents felt there was "too much" regulation of business and industry, while 30% felt there was "too little" and 39% felt there was the right amount. The poll was conducted again in June and September of 2002 and the percentages reporting "too much" had risen to 32 and 35, respectively and too much was again the modal answer by September of 2002.)
https://news.gallup.com/poll/1615/environment.aspx

analysis presents a puzzle. Why have the US and Europe, among others, been able to implement ex ante analysis fairly widely, over several decades and across different political parties, whereas ex post analysis has been far less implemented despite similar decades-long calls across parties?

The answer to this puzzle is surely multi-dimensional—many different factors combine to hinder the widespread implementation of ex post analysis. But at least one of these dimensions concerns the institutional framework surrounding ex post analysis. The institutional framework for retrospective review in the US federal government has almost always focused on review of one rule at a time, conducted by the agency that issued or promulgated the rule. And such single-rule, single-agency review has typically focused primarily (often exclusively) on two critieria: (1) Is the rule still relevant or is it obsolete, and (2) what are the costs of the rule and how can those costs be reduced.

In this paper we argue that this institutional framework for retrospective review—one rule, by the promulgating agency, focused on relevance and cost—is only well-suited to meet the goals of retrospective review in a subset of cases. In particular, this narrow institutional framework cannot address several goals of retrospective review including: (a) analyzing cumulative impacts of multiple rules on an industry; (b) evaluating not only costs but also benefits, and ancillary impacts (unintended or unanticipated countrvailing harms and co-benefits of rules); (c) learning to improve the validity and accuracy of different methodologies for estimating regulatory impacts ex ante, including on the benefits side of the ledger; (d) learning about methodological and policy design options that span beyond the domain of a single regulatory agency; and more.

To move beyond this narrow or singular institutional approach, we suggest consideration of a broader set of institutional options for retrospective regulatory analysis and review, in order to match the broader goals of retrospective analysis and review with the insititutional framework for such analysis and review. The choice among institutions involves matching objectives and tasks with capabilities and incentives (Breyer 1982). As we recount below, calls for retrospective review of US federal regulation have typically asked the agency that issued the rule to review its costs, subject to oversight by the Office of Management and Budget (OMB) through its Office of Information and Regulatory Affairs (OIRA). That issuing agency may have the most data and expertise on its own rule, and the legal authority to revise the rule if warranted. But the issuing agency may also face inhibitions on retrospective analysis, including the opportunity cost of the time and staff diverted from other priorities, and the awkwardness of potentially critiquing the agency's own past policies and analyses. In short, it may be that the slow progress of retrospective analysis to date derives in part from the choice of institutional framework. Perhaps more could be accomplished with a wider set of institutional options. And a broader set of institutional options could better match the broader set of goals for retrospective analysis and review.

The paper proceeds as follows. In section 2 we outline the different goals and tasks of retrospective regulatory analysis and review. Section 3 briefly reviews the history of retrospective regulatory review and demonstrates that past efforts have had a narrow institutional framework for such reviews. Section 4 articulates the different institutional options for retrospective analysis and review and how the different institutional options can be best matched

to the different objectives and goals, such as a broader regulatory learning process. Section 5 offers our conclusions and recommendations.

2. Goals and tasks of retrospective regulatory review

The institutional framework for retrospective review may have received insufficient attention and clarification in the past because the goals of retrospective review have been limited or unclear. Retrospective review, or similar mechanisms called ex post regulatory impact analysis, post-implementation policy evaluation, and others, may serve a variety of goals. Given a single goal, retrospective review is often viewed as a single analytic task, while in reality there are multiple tasks associated with multiple goals of retrospective review. This section articulates the various goals and tasks of retrospective review.

2.1. Goals of retrospective review

Sometimes the goal of retrospective review is to "clean up the books" by identifying rules that are outdated, redundant, or obsolete --- no longer applicable, or lacking statutory authority -- and removing them. We refer to this goal as the *rule relevance* goal.

Another frequent goal of retrospective review goal is to improve the outcomes of regulation – in particular, to revise each rule, taken one at a time, to improve its performance. We refer to this goal as the *rule improvement* goal. In practice, this has often meant identifying specific past rules that have turned out to pose high costs and seeking to reduce those costs through revisions. When pursuing the rule improvement goal, there are choices as to which outcomes to analyze and the scope of impacts to assess. Retrospective regulatory analyses can in principle assess the performance of a rule against several outcome criteria, potentially including:

- Cost—has the rule imposed high costs or burdens, and could they be eased
- Benefits and effectiveness—has the regulation accomplished its intended goals or achieved its intented benefits
- Cost-effectiveness—has the regulation accomplished its intended benefits at least cost
- Ancillary impacts—has the regulation yielded unintended consequences or side effects, such as ancillary benefits (co-benefits) or ancillary harms (countervailing risks)
- Economic efficiency —has the regulation maximized net benefits (benefits minus costs, including ancillary impacts) or could they be increased
- Distributional equity—has the regulation achieved the goals for which it was designed in a manner that provided (in)equitable distribution of net benefits or could the same level of net benefits be provided with improved distribution of those net gains.

Broadening the scope of analysis to cover more impacts will likely raise the costs of data collection and analysis, but will often also raise the value of the information for decision making and thus result in greater improvements in social outcomes from the review.[2]

[2] This tradeoff presents a question of cost of information versus value of information. A similar question of the scope of impacts and the cost versus value of information arises in "outcomes studies" in medical care, the objective of which is not necessarily to reduce (or increase) medication, but to improve patient health outcomes; likewise,

The above objectives focus on evaluation and revision of single rules. A different objective of retrospective analyses may be to learn from multiple past rules and analyses, in order to improve future rules and analyses. We refer to this goals as the *regulatory learning* goal. Retrospective review can contribute to broader learning about regulation notably by:

- Improving understanding of the performance of alternative policy designs or instruments, to evaluate how well they actually work in practice compared to predictions in theory. For example, retrospective review has enabled better understanding of the relative performance of technology standards, performance standards, information disclosure, taxes, tradable permits, and others policy instruments.
- Improving the accuracy of methods used to conduct ex ante regulatory impact analyses (RIAs). Retrospective reviews can be used to compare regulatory forecasts and counterfactual scenarios with actual outcomes over time, and this information could then be used to improve forecasting methods.
- Improving understanding of the interaction effects of multiple regulations. For example, retrospective review could assess the cumulative impacts of multiple rules on an industry. And retrospective review could be used to understand a broad range of interaction effects among rules.

Such efforts at regulatory learning could involve not just one lookback exercise to conduct retrospective review and improve the rule, but an ongoing and planned process of monitoring, data collection, periodic reviews and adaptive updating (Bennear and Wiener 2019b; McCray, Oye, and Petersen 2010). And – whether or not they are repeated in an ongoing planned adaptive process – such efforts at regulatory learning would involve retrospectively assessing not only one rule at a time, but larger representative samples of multiple rules and their ex post RIAs, compared to their ex ante RIAs, with variation across policy designs in order to test their comparative performance, and/or with variation across forecasting methodologies in order to test and improve the accuracy of the methodologies (Wiener and Ribeiro 2016b; Office of Information and Regulatory Affairs 2005; Greenstone 2009).[3] Such a broader multi-rule learning process may go beyond the domain of each individual agency, to include multi-agency comparisons. It amplifies the tradeoff of greater costs of information versus greater value of information for policy improvement. The more a regulatory system relies on ex ante RIA to design and approve new rules, the more it can gain from ex post RIA to improve the design of

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retrospective regulatory analyses could be aimed evenhandedly not at reducing (or increasing) regulation per se, but at improving societal outcomes (Wiener 1998).

[3] OIRA has espoused the goal of using retrospective RIA to enhance the accuracy of prospective RIA:

> "Prospective analysis may overestimate or underestimate both benefits and costs; retrospective analysis can be important as a corrective mechanism.[9] Executive Orders 13563 and 13610 specifically call for such analysis, with the goal of improving relevant regulations through modification, streamlining, expansion, or repeal. The aim of retrospective analysis is to improve understanding of the accuracy of prospective analysis and to provide a basis for potentially modifying rules as a result of ex post evaluations. Rules should be written and designed to facilitate retrospective analysis of their effects, including consideration of the data that will be needed for future evaluation of the rules' ex post costs and benefits" (Office of Information and Regulatory Affairs 2005)

In response to two commenters on the 2015 draft report who suggested that OMB should report the findings of retrospective reviews alongside OMB's reports of agencies' prospective RIAs for major rules over the past decade, OMB replied that it hopes that the agencies and outside researchers will do so (Office of Information and Regulatory Affairs 2005, 109).

those rules and the accuracy of forecasting their impacts. Cary Coglianese recommends "rigorous retrospective review [of multiple rules sharing common estimation issues] to evaluate their benefits and costs retrospectively [and] help validate or improve prospective estimation techniques applicable to other rules" (Coglianese 2012, 65; 2002). Joe Aldy discusses the value of using retrospective review (ex post RIA) to test and improve the accuracy of methodologies for prospective ex ante RIA (Aldy 2014, 22-26). Adam White argues that "retrospective review's greatest virtue actually has nothing to do with repealing regulations. Rather, retrospective review's greatest value is forward-looking . . . to confront how accurate or inaccurate the agencies' own projections were in forecasting the rules' impacts in the first place" (White 2016).

2.2. Tasks of retrospective review

Retrospective review is often discussed as single analytic process. But in reality, retrospective review consists of a variety of tasks and one could imagine different institutions having different roles in each task.

The first task is issuing instructions to do retrospective analysis. This instruction could come from within the promulgating agency itself or it could come from an outside institution such as Congress, the White House, or the Courts. Historically this task has been handled by the President (through executive orders) or by Congress. However, this instruction has been fairly broad, with discretion left to the promulgating agency, perhaps with input from stakeholders or OIRA, to determine which rules will be selected for review (see further discussion in Section 3).

Thus, the second task is to develop and implement selection criteria for which rules to review. Examples of criteria may include: (a) rules with high opportunity to reduce cost, (b) rules with high opportunity to increase net benefits, or (c) rules with high opportunity to learn (variation across rules, RIA methodologies). Ideally, these selection criteria are directly related to the goals of the retrospective review. If the goal is to determine if rules remain relevant, the rules that should be selected are those at risk of irrelevance. If the goal is to reduce costs (or increase net benefits), then rules should be selected that have high potential for cost reduction (or increasing net benefits). If the goal is to learn, then samples of multiple rules and RIAs should be selected that offer variation across observations in order to gain insights into policy designs, forecasting methodologies, or other features.

The next set of tasks focus on setting bounds on the analysis. In theory, every review could examine the full set of criteria outlined in the prior section—relevance, costs, benefits, cost-effectiveness, ancillary impacts, efficiency, and distributional equity. In practice, some of these criteria may not be relevant for particular rules and, hence, analysis of those criteria is not a worthwhile expenditure of effort and resources. More generally, a key task in the review process is to balance the decision costs of doing retrospective analysis against the value of information for policy improvement, and determine which aspects should be examined. One could imagine a screening or scoping analysis looking at all the criteria, with a process for selecting criteria for more detailed analysis based on the results of this screening or scoping. A further scoping task concerns the determination of the counterfactual—what would have happened in the absence of

the rule. This may also include decisions about what the relevant set of policy alternatives could have been.

Once the scope of the analysis is designated, the next task is acquiring the data required for analysis. Ideally, the need for these data would have been anticipated during the initial rulemaking and the data would already be collected. However, this is not always the case, and data acquisition and cleaning often consume large amounts of time and resources during a review.

The task we focus on the most is the task of actually performing the retrospective analysis, although the discussion above now illustrates the number of discrete but related tasks and choices that must be made prior to the analysis. The task of conducting the retrospective review could be undertaken by the agency that issued the rule, as has been typical. But it could also conducted by others, such as an interagency group, a one-time commission of inquiry (such as after a crisis), a standing expert commission (such as the NTSB), another governmental body such as GAO or ACUS, a National Academies panel, or an academic or think tank research unit. The choice depends in part on the goal: for example, if the goal is regulatory learning from multiple rules or RIAs, then it may make sense to have the retrospective analysis conducted by a group outside the agency that issued each individual rule, that is, by a group that can look at multiple observations beyond any one agency.

But the review does not end with the analysis. Ideally the analysis, including all the decisions about scope, are reviewed by a body other than the one conducting the review. For analysis that happens at the regulatory agency, this oversight is often done by OIRA. But one can imagine numerous other possibilities for this oversight role, such as courts, a commission, or others noted above.

Based on the review, there may be changes deemed needed to revise the past regulation. Actually revising the rule is a task that probably has to be done by the regulatory agency with the statutory authority (hence the agency that promulgated the initial rule), or by Congress. But the tasks of making recommendations for revisions, and following up to ensure these recommendations have been adopted could be handled by a different institution. For example, the National Trasnportation Safety Board (NTSB) does not have the ability to implement its recommendations directly, but it does have the responsibility to propose recommended revisions and to follow-up on its recommendations and report on which have been implemented and which have not (Balleisen et al. 2017).

Finally, there needs to be publication and archiving of the retrospective reviews for the purposes of transparency and learning. Prior analysis of retrospective reviews in the US found that of the retrospective reviews that have been conducted, much of that analysis is not published, recorded or archived in ways that the public and scholars can find (Wiener and Ribeiro 2016b).

The next section examines historical efforts at retrospective review since the 1970s in light of the goals and tasks framework we just established.

3. Retrospective review in retrospect—Slow progress and limited insitutional framework

Efforts to require retrospective analysis are not new – they are bipartisan and longstanding—and have occurred at the Presidential level, in Congress, at Federal and State levels. Several US Presidents have sought to mobilize retrospective review of existing regulations by issuing Executive Orders (EOs). These include: sections 2 and 4 of President Jimmy Carter's EO 12,044 (1978); section 3(i) of President Ronald Reagan's EO 12,291 (1981); section 5 of President Bill Clinton's EO 12,866 (1993); section 6 of President Barack Obama's EO 13,563 (2011); President Obama's EO 13,579 (2015) calling on independent agencies to conduct similar reviews; and President Obama's EO 13,610 (2012) giving further details on the review process. President Donald Trump issued EO 13,771 (2017), calling for the costs of new regulations to be offset by revisions or repeals of past regulations, which implies that retrospective reviews would be needed to assess the cost savings (but may neglect changes in the benefits) that may ensue from revising the past regulations.

3.1 Examples

Here we note examples of retrospective review efforts in several US presidential administrations, Congress, US states, and Europe and other countries. Following these examples, we offer a brief assessment of these efforts so far, focusing on their institutional choices.

- **Ford Administration:** While addressing Congress in 1974, President Ford asked Congress to "undertake a long-overdue total re-examination of the independent regulatory agencies" as part of a joint effort to "identify and eliminate existing federal rules and regulations that increase costs to the consumer without any good reason in today's economic climate" (Ford 1974). But soon after, when he issued EO 11,821, Ford's Inflation Impact Statement (IIS) focused only on proposals for legislation or promulgation of new regulations and rules by executive agencies (*Executive Order 11821* 1974).[4]

- **Carter Administration:** In 1978, President Carter's EO 12,044 expanded the ex ante RIA requirement to address all economic impacts, and also innovated significantly by introducing ex post RIA. Carter's EO had a specific section on "Review of Existing Regulations," requiring agencies to "periodically review their existing regulations to determine whether they are achieving the policy goals of this Order" (*Executive Order 12044* 1978, § 1). In addition to this central mandate, EO 12,044 also stipulated procedural/methodological rules, as well as selection criteria, communication and participation requirements of such regulatory reviews (*Executive Order 12044* 1978, § 4). Methodologically, regulatory reviews should "follow the same procedural steps outlined for the development of new regulations," i.e., ex ante regulatory analysis.[5] The criteria

[4] The Inflation Impact Statement (IIS) was renamed "Economic Impact Statement" under Exec. Order No. 11,949 (1976). The Council on Wage and Price Stability, created in 1974 by Congress, to which EO 11,821 allowed OMB to delegate its oversight functions related to the IIS, employed broad language to describe its role, which could potentially include reviewing the performance of existing programs and activities (*Council on Wage and Price Stability Act* 1974).

[5] Including, in the case of significant regulations with major consequences, "a careful examination of alternative approaches" and a "succinct statement of the problem; a description of the major alternative ways of dealing with

developed by each agency for selecting rules for review—based on the general criteria stipulated by the EO—and the list of regulations selected for review were to be published and included in the semiannual agency agendas (*Executive Order 12044* 1978, § 2(a)). EO 12,044 also required that new regulations include "a plan for evaluating the regulation after its issuance has been developed" (*Executive Order 12044* 1978, § 2(d)(8)) —a prospective provision for retrospective review.

- **Reagan Administration:** Section 3 of EO 12,291, issued by President Reagan in 1981, included a subsection requiring agencies to "initiate reviews of currently effective rules in accordance with the purposes of this Order, and perform Regulatory Impact Analyses of currently effective major rules" (*Executive Order 12291* 1981). The provision requiring agencies to include in ex ante RIA a plan for future review was omitted, as were selection criteria for review. On the other hand, OMB was given express authority to designate currently effective rules for review and establish schedules for reviews and analyses under the EO.[6]

- **Clinton Administration:** In 1993 in his EO 12,866, President Clinton included section 5 on ex post evaluation of existing regulations, requiring publication of regulations selected for review in each agency's annual plan and regulatory agenda, empowering the Vice President to identify rules for review, and instructing agencies to conduct reviews to make existing rules "more effective in achieving the regulatory objectives, less burdensome, or in greater alignment with the President's priorities" (*Executive Order 12866* 1993, § 5(a)).[7] EO 12,866 has been maintained in force by all subsequent presidents of both parties, including George W. Bush, Barack Obama and Donald Trump. Yet the call for retrospective reviews in section 5 of EO 12,866 has not been widely implemented.

- **Obama Administration:** President Obama maintained and supplemented EO 12,866 with three additional EOs, all with rules for retrospective review of existing regulations (*Executive Order 13563* 2011; *Executive Order 13579* 2015; *Executive Order 13610* 2012). Like Clinton's EO 12,866, Obama's EO 13,563 dedicates one section to "Retrospective Analysis of Existing Rules." President Obama called on agencies to

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the problem that were considered by the agency; an analysis of the economic consequences of each of these alternatives and a detailed explanation of the reasons for choosing one alternative over the others" (*Executive Order 12044* 1978, § 3(b)(1)).

[6] In 1985, President Reagan issued EO 12,498, once again addressing the need to reduce the burdens of "existing and future regulations." It created a requirement that agencies should annually state their regulatory policies, goals, and objectives for the coming years, including "information concerning all significant regulatory actions underway or planned" (*Executive Order 12498* 1985). In 1992, President George H.W. Bush announced in his State of the Union Address a 90-day moratorium on new regulation, and a review of federal regulations, which was then directed to agencies via a memorandum on the same day. The memorandum defines the standards for review, mirroring much of the process applicable to ex ante RIA under EO 12,291 (Eisner and Kaleta 1996). President Clinton also mandated a one-time review effort of existing regulations via memorandum issued to federal agencies in 1995 (Hahn 2000).

[7] The goal of such review is defined in the same provision as "to determine whether any such regulations should be modified or eliminated so as to make the agency's regulatory program more effective in achieving the regulatory objectives, less burdensome, or in greater alignment with the President's priorities and the principles set forth in this Executive Order."

submit to OIRA "a preliminary plan . . . under which the agency will periodically review its existing regulations . . . ." (*Executive Order 13563* 2011, § 6(b)).[8] In the following year, President Obama issued EO 13,610, on "Identifying and Reducing Regulatory Burdens"(*Executive Order 13610* 2012). This new EO added to the ex post RIA system a provision on public participation, and created a complementary duty requiring agencies to report semiannually to OIRA "on the status of their retrospective review efforts," (*Executive Order 13610* 2012, §§ 3-4) describing "progress, anticipated accomplishments, and proposed timelines for relevant actions . . . ." (*Executive Order 13610* 2012, §§ 2, 4). EO 13,610 also stipulated in section 3 a set of factors that agencies should consider when setting priorities and selecting rules for review.[9] OIRA then issued a series of memoranda pressing the agencies to identify existing rules and conduct reviews (Coglianese 2012).

- **Trump Administration:** EOs 13771 and 13777, issued by President Trump in 2017, require review of existing regulations with a stated aim of offsetting the cost of new regulations by revising or rescinding past rules (*Executive Order 13771* 2017; *Executive Order 13777* 2017).[10] This approach focuses on cost (not benefits, ancillary impacts, distribution, or net benefits), and seeks to motivate agencies to conduct retrospective reviews to cut costs from past rules if they seek to issue new rules (see e.g. Renda 2017; Belton and Graham 2019).

- **ACUS:** The Administrative Conference of the United States (ACUS) endorsed the call for retrospective review as early as 1995 (just after the Clinton EO) (Administrative Conference of the U.S. 1995). ACUS commissioned an expert appraisal in 2014 by Joseph Aldy of retrospective review efforts to date (soon after the Obama EO) (Aldy 2014), and adopted a set of recommendations in 2014 calling for strengthening retrospective review and further recommendations in 2017 on learning from regulatory experience (Administrative Conference of the U.S. 2014; 2017).[11]

- **Congress:** In addition, Congress has sometimes called for retrospective review. For example, the Regulatory Flexibility Act (RFA) of 1980 requires agencies to review those

[8] The provision announces the same goal of the review "to determine whether any such regulations should be modified, streamlined, expanded, or repealed so as to make the agency's regulatory program more effective or less burdensome in achieving the regulatory objectives" (*Executive Order 13563* 2011). The other operational provision in section 6—this one original—directs agencies to release "[s]uch retrospective analyses, including supporting data, . . . online whenever possible" (*Executive Order 13563* 2011, § 6(a)).

[9] The factors are: (a) reviews that will "produce significant quantifiable monetary savings or significant quantifiable reductions in paperwork burdens while protecting public health, welfare, safety, and our environment;" (b) reviews that will "reduce unjustified regulatory burdens or simplify or harmonize regulatory requirements imposed on small business;" (c) reforms that would make "significant progress in reducing those burdens while protecting public health, welfare, safety, and our environment;" and (d) "consideration to the cumulative effects of agency regulations, including cumulative burdens" (*Executive Order 13610* 2012, § 3).

[10] A straightforward reading of section 2 of EO 13771 is that it requires agencies to offset the cost of each new regulation by an equal amount of cost reduced from existing regulations, i.e. a 1:1 cost offset (potentially from multiple rules) rather than a 2:1 rule rescission.

[11] ACUS Recommendation 5(c) in 2014 notes that one factor in selecting rules for retrospective analysis is "[u]ncertainty about the accuracy of initial estimates of regulatory costs and benefits." Retrospective review was also advocated by the American Bar Association (American Bar Association 2016).

regulations that have "a significant economic impact upon a substantial number of small entities" within ten years of the regulation having been issued (*Regulatory Flexibility Act* 2012). The Paperwork Reduction Act (PRA) allowed any interested party to request that OMB review an existing information collection requirement, which could lead to a "remedial" action by OMB and the agency (*Paperwork Reduction Act* 2000). Also, the PRA called for new regulations to have their information collection requirements reviewed every three years after initial approval; based on the review report, OMB can approve or disapprove the extension.

The Clean Air Act Amendments of 1990 included the so-called "Section 812" study of the retrospective as well as prospective benefits and costs of the statute (*Clean Air Act Amendments of 1990*). The Unfunded Mandates Act (UMRA) also has a provision regarding review of existing regulations, although with a provisional nature (*Unfunded Mandates Act of 1995*).[12] Several specific laws also require periodic reviews of past policies: examples include the five year reviews of national ambient air quality standards in the *Clean Air Act Amendments of 1990,* § 7409(d)), the six year reviews of drinking water quality standards in the *Safe Drinking Water Act* (1974, § 300g-1(b)(9)), the five year reviews of policies for toxic chemicals under TSCA as amended in 2016 (*Frank R. Lautenberg Chemical Safety for the 21st Century Act of 2016, Amending the Toxic Substances Control Act (TSCA)* 2016), and the two year reviews of FCC policies (*Telecommunications Act of 1996* 1996).

In 1993, Congress passed, and President Clinton signed, the Government Performance Results Act (GPRA) (*Government Performance and Results Act* 1993). While much of GPRA was focused on overall executive agency management, as part of GPRA, each agency was required to develop an Annual Performance Plan and Report which required, among other things that agencies "provide a basis for comparing actual program results with the established performance goals." Congress passed the GPRA Modernization Act in 2010 which extended the requirements for Federal Agencies to develop performance plans and demonstrate effectiveness of their activities (*GPRA Modernization Act of 2010* 2010). For regulatory agencies, demonstrating effectiveness implies retrospective analysis of rulemaking activities to show that these rules have helped the agency achieve their priorities.

At least since 1996, Congress began to include in appropriations legislation a requirement directing OMB to annually submit reports containing "estimates of the total annual costs and benefits of Federal Regulatory programs, including quantitative and non-quantitative measures of regulatory costs and benefits" (Office of Information and Regulatory Affairs 2017). Initially, the requirement also stipulated that OMB should include in its report "recommendations from the Director . . . to reform or eliminate any Federal regulatory

[12] Title III of the Unfunded Mandates Act of 1995 (UMRA) addresses "Review of Federal Mandates," granting the Advisory Commission on Intergovernmental Relations powers to investigate and review the role and impact of existing Federal mandates. As a result of such review—which appears in the Act to be a one-time analysis—the Commission may make a recommendation for "suspending, on a temporary basis, Federal mandates which are not vital to public health and safety and which compound the fiscal difficulties of State, local, and tribal governments, including recommendations for triggering such suspension."

program or program element that is inefficient, ineffective, or is not a sound use of the Nations' resources" (*Treasury, Postal Services and General Government Appropriations Act of 1997* 1997). The provisions were annually renewed in appropriations legislation until, in 2001, it became a permanent feature of what is now known as the Regulatory Right-to-Know Act (*Treasury, Postal Services and General Government Appropriations Act of 1997* 1997; *Treasury and General Government Appropriations Act of 2001* 2001).[13] In 2012, Congress passed the Consolidated Appropriations Act, which also requires OMB to include in its annual report to Congress information on agency implementation of EO 13,563; in particular, it requires OMB to identify "existing regulations that have been reviewed and determined to be outmoded, ineffective, and excessively burdensome" (*Consolidated Appropriations Act of 2012*).

In 2018, Congress passed the Foundations for Evidence-Based Policy Act, which requires, among other things, that each agency develop a systematic plan for evidence-based policy that includes a list of policy questions and the evidence required to answer those questions. Each agency must name an Evaluation Officer and a Statistical Officer. OMB must establish an advisory committee consisting of members from the agencies including, potentially, the Evaluation Officers, among others (*Foundation for Evidence-Based Policymaking Act* 2019).

- **US States:** Some US states have also adopted requirements for periodic ex post reviews of existing regulations (Schwartz 2010; Hahn 2000). The 1981 edition of the Model State Administrative Procedure Act (MSAPA) suggests a provision requiring periodic review of all agency regulations in no longer than seven years.[14] In 2000, Robert Hahn reported that nearly one-third of the states had adopted comprehensive review requirements of all existing regulations (Hahn 2000, 874 and 876). In 2010, Jason Schwartz of the Institute for Policy Integrity found thirty states in which agencies were either encouraged or required to reevaluate their existing regulations periodically (Schwartz 2010, 86-87). The criterion for review in these states is typically the passage of time from the date an agency issued a regulation (Schwartz 2010, 115-123). Shapiro, Borie-Holtz, and Markey (2016) found twenty-five states that enacted requirements to review existing regulations from 2006 through 2013.

- **Europe and around the world:** The EU Regulatory Fitness or "REFIT" program conducts numerous follow up evaluations.[15] These ex post impact assessments can be suggested by EU member states, stakeholders, and others, and are carried out by a special committee called the "REFIT Platform" made of expert representatives from all the member states and chaired by a high-level European Commission official. Other countries around the world have been also adopting versions of retrospective analysis (whether called ex post IA, follow up policy evaluation, post-implementation review,

[13] Starting in 1999, the language used in the two provisions changed: regarding the recommendations for reform, the new statute directed OMB to only include in its report "recommendations for reform" (*Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999*)

[14] Interestingly, the 2010 edition does not have the same provision. The 1981 version was substituted for an earlier version calling for periodic review of agency regulations by a legislative committee (Schwartz 2010 at 34, 37, 115).

[15] See https://ec.europa.eu/info/law/law-making-process/evaluating-and-improving-existing-laws/refit-making-eu-law-simpler-and-less-costly_en .

retrospective review, or otherwise) (OECD 2015; Wiener 2013; Wiener and Ribeiro 2016a; Ladegaard, Lundkvist, and Kamkhaji 2018). The Organization for Economic Co-operation and Development (OECD) called on countries to conduct ex post impact assessment of existing policies, in its recommendation number 5 on regulatory policy and governance (OECD 2012). Along with recommending adoption of ex ante RIA, it called for member countries to "[c]onduct systematic programme reviews of the stock of significant regulation against clear defined policy goals, including consideration of costs and benefits, to ensure that regulations remain up to date, cost justified, cost effective and consistent, and deliver the intended policy objectives" (OECD 2012, 4). It directed countries to do this by "[m]aintain[ing] a regulatory management system, including both ex ante assessment and ex post evaluation as key parts of evidence-based decision making" (OECD 2012, 6). OECD reported that by 2015, twenty of its member countries plus the EU had mandatory periodic evaluation requirements of existing regulations (OECD 2015). Several countries have also adopted "1-in 1-out" or similar policies to require cost offsets from past regulations in order to issue new regulations, akin to the Trump EO 13,771 (Trnka and Thuerer 2019; Renda 2017).

3.2 Assessment

This history exhibits widespread executive and legislative efforts to promote retrospective review. Table 1 summarizes the past executive branch efforts at retrospective review. Each executive action was categorized based up on which goal(s) were targeted and within goals which specific criteria were required to be analyzed. Each action was further categorized based on what institution was required to conduct the retrospective review. "Within Agency" means that the agency that had promulgated the initial rule was required to conduct the review. "Across Agencies" means the executive order assigned or established a institution that spans regulatory agencies that was tasked with (at least part) of the regulatory review.

<See Table 1 at end of document>

Table 1 highlights several shortcomings of prior executive action on retrospective review:

- Actions have largely focused on the regulatory relevance and rule improvement goals. No executive order has specifically required that reviews address the regulatory learning goal. (EO 12291, section 6(a)(5), addressed "duplicative, overlapping and conflicting rules." EO 12866, section 5(c), authorized the Vice President to call for review of "groups of regulations of more than one agency." EO 13563, section 3, called for "coordination across agencies" to address "redundant, inconsistent, or overlapping" rules. But none of these called for retrospective review of multiple rules or RIAs in order to learn to improve policy design or accuracy in forecasting methods.)
- Within the rule improvement goal, past efforts have mainly focused on the criterion of reducing the costs of each regulation, with less attention to the other criteria noted above, such as benefits, ancillary impacts, net benefits, and distribution.
- Past efforts have focused on the agency that issued the rule, asking that agency to undertake the retrospective analysis, rather than exploring other institutional options.

In addition, prior efforts have been mostly ad hoc lookbacks, with few instances of advance planning in initial rules themselves to collect data over time and then conduct a planned retrospective analysis at a future date.[16]

Nonetheless, despite the broad and longstanding support for retrospective review, government measures to require retrospective review have yielded only limited results, with only occasional episodes of effort to analyze past policies (Aldy 2014; Coglianese 2013; Lutter 2013; Dudley 2013; Wiener and Ribeiro 2016b). After his term at the helm of OIRA, Cass Sunstein wrote that "[i]t is an astonishing fact that until very recently, there has been no sustained effort to gather, let alone act on, that information [about what regulatory policies actually do]—and that existing efforts remain highly preliminary and partial" (Sunstein 2014, 588). In his report for ACUS, Joe Aldy found that the Obama administration's measures generated retrospective reviews of several hundred specific rules, and helped build a culture of retrospective review; however, the track record remained "mixed" and very few of the administration's newly issued rules were revisions based on a retrospective review or required a future retrospective review (Aldy 2014, 4-6). Cary Coglianese has observed that "retrospective review is today where prospective analysis was in the 1970s: ad hoc and largely unmanaged" (Coglianese 2012, 59). The OECD remarked: "ex post evaluation by [U.S.] federal agencies remains patchy and unsystematic" (OECD 2015, 123). A review of the retrospective reviews that EPA conducted under EO 13563 found that few were published and few conducted a thorough analysis of both benefits and costs (Wiener and Ribeiro 2016b).

To be sure, on their own, agencies may revise their existing rules – perhaps often and without fanfare – but may also do so in ways that lack transparency, cater to special interests, fail to assess important outcome criteria, and fail to revise other rules that might warrant updating (Wagner et al. 2017). And these agency revisions attend to one rule at a time, rather than to learning from comparison of multiple rules and RIA methods. Thus there are good reasons for a more systematic, transparent process of reviewing past rules that serves important criteria for improving outcomes and learning over time. Even a precautionary approach to regulation also suggests the value of revisiting earlier estimates in light of data on actual experience, because precaution is meant to be undertaken provisionally in the face of uncertainty, to be revised as knowledge improves (Wiener 2018).

There are several potential explantions for why retrospective review has not achieved greater uptake and there are almost certainly multiple factors at play. As noted above, the agency that issued the original rule may have the data, expertise, and legal authority to revise the rule, but may face time and resource constraints in conducting retrospective reviews, and inhibitions in critiquing its own past work. Moreover, in contrast to ex ante analyses of proposed new regulations, there may be less pressure on the agency to conduct retrospective analyses of past

[16] Scholars have advocated such prospective plans for retrospective analysis. See, Cropper, Fraas, and Morgenstern (2017, 1376) calling for planned data collection to facilitate retrospective analyses. But this appears to be rare: one study of twenty-two rules promulgated in 2014 found that very few included plans for future retrospective review (Miller 2015). A bill titled the Setting Manageable Analysis Requirements in Text (SMART) Act (S. 1420, May 2019), co-sponsored by Senators Kyrsten Sinema (D-AZ) and James Lankford (R-OK), would require agencies to set metrics for how a rule will be measured for success in the future, to collect relevant data, and to use those metrics to review the rule within 10 years. Two former OIRA administrators have endorsed this bill (Dudley and Katzen 2019).

regulations, to the extent that ex ante analysis is necessary for the agency to obtain approval for a new rule to go forward, whereas ex post analysis may not be necessary for the agency to advance its mission (and may be perceived as diverting resources from its mission-critical work).[17]

Political leadership of the agency is often interested in getting new things done, consistent with the current administrations goals. Spending time and money on retrospective review of prior rules may distract from that unless, as we see in the current Trump administration, repealing prior rules is, itself, consistent with the current administrations goals. Finally, the paperwork reduction act limits the ability of agencies to collect data from regulated entitities that may be necessary to conduct retrospective review (*Paperwork Reduction Act of 1995*).

The regulated entities themselves may not be particularly interested in revising prior rules as they have already made investments to comply with the existing rule. The current controversy within the automobile manufacturing industry regarding the potential revision of the fuel economy standards is illustrative of this tension (Davenport 2019; Davenport and Tabuchi 2019).

In addition to these reasons why retrospective review has not yet experienced the same level of uptake and success as ex ante regulatory review, we argue that the the institutional framework for retrospective review – who conducts such reviews and oversees them – has hindered uptake. When governments have called for retrospective review or ex post RIA, typically they have instructed the agency that issued the rule to undertake such review, but alternative institutional frameworks may provide a better match to the different goals and tasks of retrospective review (Aldy 2014, 7).

4. Choice among institutional frameworks

The choice of which institutional structure is best matched for retrospective analysis may differ depending on the objectives of the analysis and the specific analytic tasks required to achieve those objectives. This section focuses on analysis of different objectives and their associated tasks and mapping those onto a set of potential institutional options. We begin by articulating the full set of institutional options available. We then turn to how those map the goals and tasks of retrospective review onto the institutional options.

4.1 Institutional options

While prior efforts have largely placed responsibility for retrospective review with the agency that issued the initial regulation, there are actually numerous alternative institutional options for retrospective analyses. Some of these options currently exist and have been previously used, albeit sparingly, while others would be new institutions requiring executive (or legislative) action to create.

[17] Agencies may sometimes attempt to avoid presidential calls for ex ante RIA and centralized oversight of their analyses, but the repeat relationship between the agency and OIRA may over time foster a mutual understanding and monitoring of compliance (Mendelson and Wiener 2014). One tactic that might motivate agencies to do more retrospective ex post RIAs may be to require cost reductions in past rules as a condition for issuing new rules (Trnka and Thuerer 2019; Renda 2017). But such reviews may focus too narrowly on cost (neglecting other impacts).

Of course, the first option to consider is maintaining the current practice of relying on **the agency that promulgated or issued the rule**. This institutional choice is not without its advantages. The promulgating agency arguably has the data and topical expertise to evaluate the regulation. And if any changes to the regulation are implied by the retrospective review, the promulgating agency would have the rulemaking authority to make those changes. But there may be limits to this institutional approach. The promulgating agency may not have staff well-trained in retrospective review, and it may not have the funding to conduct reviews without diverting resources from other activities that are more critical to its mission. Further, the promulgating agency may face inhibitions, notably the awkwardness of critiquing its own prior rules (or analysis of those rules) and potentially revising or undoing its own past policies. Moreover, the promulgating agency is limited in its ability to gauge the cumulative or interactive impacts of multiple rules that span regulatory domains across agencies, or to do comparative analysis across regulatory domains.

To overcome these obstacles, it is often proposed that retrospective regulatory analyses be conducted or at least overseen by a central administrative body. Examples given for this institutional structure include the Office of Information and Regulatory Affairs (OIRA) in the US, and the Regulatory Scrutiny Board (RSB) in the EU (Aldy 2014; Jonathan B. Wiener and Alemanno 2010; 2017). Indeed, in the US, OIRA does have oversight responsibility for retrospective reviews. This responsibility could be extended to include development of detailed methodological guidelines for agency review (Aldy 2014). An advantage of this hybrid institutional approach is that the expertise in review methodology is likely to be stronger at OIRA, but the topical expertise and data are likely to reside at the promulgating agency. So providing detailed methodological guidance centrally, while continuing to rely on agencies to conduct the review, may overcome one of the downsides to the agency-only approach. However, this approach still relies on the promulgating agency to conduct the analysis, and does not overcome the restriction of that approach with respect to comparative analysis or analysis of cumulative impacts. A further extension of responsibility could have OIRA conduct the analyses itself, at least in some cases such as where its ability to compare rules across agencies would be helpful. But OIRA currently does not have the budget and staff to take on this task (indeed OIRA's staff has declined in size over the past several decades), and would require executive and legislative action to increase its staffing and analytic capabilities.

There are several additional institutional options that could try to overcome the major obstacles to the promulgating agency conducting retrospective analyses—such as a lack of resources or expertise in evaluation methods, an inability to compare multiple rules or across agencies, and inhibitions to criticizing the agency's own activities.

- **Other expert government agencies (outside of OIRA)**. There are other public agencies that already conduct regulatory reviews, including the Government Accountability Office (GAO). While this institution currently conducts some retrospective reviews, the GAO does not have the broader authority to select regulations to be reviewed and conduct those reviews. In theory, GAO could be given such authority although the enabling mechanism for such authority but this would likely require Congressional action. While an advantage of these potential institutions is that they can convene necessary expertise

and they can examine rules across multiple agencies, a downside is that if regulatory changes are recommended, these institutions cannot actually adopt those changes. If the promulgating agencies or Congress do not agree, these recommendations may not be implemented.

- **Outside experts from academia, non-profits, or think tanks**. Instead of relying on existing government agencies, retrospective review could be conducted by private entities, presumably under contract with the government. For example, the National Academies of Science (NAS) is a private non-profit organization that is frequently asked to conduct reviews of government regulatory processes by convening panels of experts. Academics and think-tanks frequently engage in regulatory analysis, occasionally under contract and sometimes for other reasons (e.g., intellectual interest). An advantage of this institutional framework is the ability to draw on expertise outside of government. The expertise need not reside solely in one country. Some have called for a transatlantic (US-EU) or global policy laboratory / collaboratory, which could be undertaken by non-governmental experts, perhaps also with support or endorsement by governments (Wiener and Alemanno 2015). However, this institution would encounter the same potential limitation that any recommendations would have to be enacted by the promulgating agency or legislature.
- **One-time commission of inquiry.** This is a slight variant on the outside expert institutional framework in which, rather than relying on non-profit contracts, the government establishes the authority internally to call an expert panel to conduct regulatory review, as needed. The commission of inquiry is widely used to investigate disasters and can be commissioned either by Congress or by the President (Balleisen et al. 2017). A similar framework could be used to establish a panel of experts for particular regulatory reviews.
- **New standing commission or review board.** Another concept borrowed from the institutions for disaster review is the standing review board, modeled after the National Transportation Safety Board (NTSB). The advantage of a permanent review board (as opposed to one-time commission of inquiry) is the ability of the board to develop deep expertise in review methods that span policy domains (Balleisen et al. 2017). This option shares the concern about agency buy-in with the three previous options. Going further, some observers have proposed creation of a new standing commission (a "regulatory improvement commission," RIC) to review the stock of existing regulations and their cumulative impacts, which could be advisory to the promulgating agencies or to Congress, or which could potentially be imbued by Congress with the authority to adopt its own revisions to agencies' past rules, or to propose slates of legislative changes to past rules that Congress would then vote up or down as a slate (Mandel and Carew 2013).[18] A standing commission would be particularly well-suited to identify issues that come up repeatedly in multiple rules across multiple agencies.
- **Interagency Working Group.** An alternative to the completely independent review institutions discussed above would be to establish an interagency working group tasked with conducting regulatory review. The working group could have representatives from each of the major regulatory agencies as well as representatives from government organizations focused on review methodology (e.g., OIRA or RSB). This working group

[18] See also "Regulatory Improvement Act S708" 114 Congress, introduced by Senator Angus King.

would preserve the benefits of having a specialized group focused on evaluations that is at least partially removed from the promulgating agency (and hence can be more critical), but because each agency has representation on the working group there is the possibility that the working group will have more data, expertise and buy-in from the issuing agencies and this may lead to higher uptake of the working group's recommendations. One concern about this approach might be that members of the commission engage in logrolling—exchanging positive reviews of one anothers rules.

- **Courts.** Judicial review is already invoked to oversee ex ante impact assessments, such as environmental impact statements (EISes) under NEPA. Judicial review can also oversee RIAs to the extent the RIA is authorized or required by statute, or is a factor considered by the agency in a rulemaking. Courts could potentially play a role in retrospective ex post analyses, for example if a statute authorized petitioners to challenge agencies to undertake retrospective analyses (Bull 2015). Courts can play a role in ensuring that agencies consider important factors, avoid omitting important aspects, and give sensible reasons for their decisions. Courts can vacate rules or remand for revisions. But courts are typically generalists, lacking the data and expertise to conduct (or even oversee the details of) the analyses themselves.
- **Stakeholders and the public.** In discussing the above institutions, we have focused on the analyses themselves. But there are other institutions that play a role in the broader review process, even if these institutions do not conduct reviews. Any of the institutions for conducting reviews will need to specify a role for stakeholders and petitioners. This may include the ability to nominate rules for review either through a formal comment process or by way of citizen suits (Bull 2015, 96), supply relevant data and expertise for review, and comment on reviews and recommendations. Congress, as representatives of these various stakeholder and public groups, may also play a role by requesting reviews or mandating them, potentially through the use of so-called "sunset provisions" whereby statuatory authority for a rule expires if the rule is not reviewed in a particular amount of time (Ranchordás 2015).

4.2. Mapping objectives and tasks to institutional options

We argue that a one-size-fits-all institutional approach to retrospective analysis is unlikely to work because the optimal institutional choice varies with both the objectives of retrospective analysis and the various tasks required to meet those objectives. At least part of the explanation for why historical efforts at retrospective analysis have led to limited success is because these efforts have relied, almost exclusively, on the promulgating agency to conduct the review. In this section we map objectives and tasks onto the broader set of institutional options discussed in Section 4.1.

The objectives of retrospective analysis may influence the choice of institutional approach. Government retrospective review has often aimed at individual regulatory policies, with a view to revising those specific policies, often to reduce their costs (Aldy 2014). Broader retrospective analysis would assess the full scope of important impacts of each regulation (not only costs, but also benefits and ancillary impacts, with a view not only to reducing costs, but to increasing net benefits). But this may take too much time for any one agency's staff and/or require expertise

from multiple agencies. Similarly, a learning focus may require input from multiple agencies as well as deep expertise in analytic methods that may be better found outside the original rule-promulgating agency. In both of these cases, the reliance on the promulgating agency to conduct the rule is likely to limit the ability of the analysis to meet the objectives.

Further, the different tasks for retrospective review need not all be done by the same institution. Some tasks may be best performed by the promulgating agency, at least for rules with certain objectives, while others may be better performed by an alternative institution. Just as one example, the US has focused on asking the agency that issued the rule to select rules for review and to conduct the retrospective analysis. That agency may have the most data and expertise, and the authority to revise the rule. But it may also face high opportunity costs in staff time diverted from other priorities. Whereas agencies may be motivated to submit ex ante RIAs in order to have their new rules pass OMB/OIRA review and be promulgated, there may not be as strong a motivation for agencies to conduct ex post RIAs when the retrospective review does not have practical rewards or only threatens to change the agency's past work. And the issuing agency may face inhibitions from publishing a candid retrospective analysis that criticizes its own past rule or analysis (Wiener and Ribeiro 2016b).

Table 2 shows the range of tasks and objectives in the rows and the set of institutional options in the columns, and offers some examples of the mapping from objectives and tasks to institutional options. Institutional relationships between objectives and tasks that currently exist are shown in blue, while those that we are suggesting may be better in the future are shown in green.

<See Table 2 at end of document>

Under past EOs, OMB/OIRA has asked each agency to select the rules to be reviewed. The main selection criterion seems to have been cost – the opportunity to reduce the costs of each rule. A suggested complement is to invite stakeholders to nominate rules to be selected for review, such as through public comments in response to an OMB/OIRA or agency call for nominations (as occurred in several administrations), or through a petition process to each agency (Bull 2015), or through a public input process to a commission (Mandel and Carew 2013, 14-19). That may draw on the practical experience of stakeholders, but may also tend to focus on the parochial interests of those stakeholders. The agency could still have the final choice of whether to select the nominated rules. Another approach would be to have a broader selection process examine many candidates and select which rules deserve review – such as by an interagency working group, an expert board, or a commission established for this purpose (Mandel and Carew 2013). This broader selection exercise could be better able to identify the rules most in need of review, especially if the agency faces inhibitions, or if the criteria include broader impacts (beyond cost and target benefits, to include ancillary impacts).

The analysis itself could be undertaken by the agency and historically this is what happens in most cases. Presumably it has the best data and expertise on the topic and understands the complex operation of the rule. But it may be that agencies have not been collecting data on their rules – hence the interest in requiring a plan for such data collection from the time the rule is

proposed and adopted (Cropper, Fraas, and Morgenstern 2017; Miller 2015; Dudley and Katzen 2019).[19] Further, the agency may face opportunity costs and inhibitions. Thus it may also be useful in some contexts to have the retrospective analysis undertaken by another institution, such as an interagency working group, an expert board, or a commission. Researchers at universities and think tanks often are the ones who undertake such retrospective analyses, either on their own or as contractors to agencies.

Whether the agency or another institution undertakes the analysis, it is most likely only the agency that has the legal authority to promulgate revisions to the rule, through the steps of proposed rule, notice and comment, and final rule, as provided under the Administrative Procedure Act. OMB/OIRA would ordinarily exercise oversight of such revisions.

A commission could be established to assess multiple rules, including the combined and interacting effects of accumulated multiple rules (Mandel and Carew 2013). It could be created as a one-time exercise (perhaps lasting several years) to take stock of the accumulated body of regulation and recommend revisions. This could reflect the experience of the Defense Base Closure Commission, which identified military bases for closing or repurposing, somewhat insulated from the politics of Congress (Mandel and Carew 2013). And it would be analogous to the one-time commissions of inquiry created after major disasters such as the 9/11 terrorist attacks in 2001 and the BP Deepwater Horizon oil spill in 2010.

But rather than a one-time exercise, there are also advantages to establishing such a commission as a standing body, similar to the National Transportation Safety Board (NTSB), which would have a greater depth of experience and expert staff to inform its ongoing analyses (Balleisen et al. 2017). Establishing a standing board allows for the collection of expertise in evaluation methods that can be applied to multiple rules (or collections of rules) over time. It also separates the review activity from the direct regulatory responsibility. This level of independence enables more candid reviews of potential errors or missteps in the regulatory process. One concern about the use of a non-regulatory body to conduct reviews is that the reviews may lead to recommendations that then another agency must take seriously and implement and the implementing agency may not have much incentive to do so. While this is a possibility, analysis of the recommendations made by the NTSB (which has no authority to implement recommendations made to regulatory agencies and Congress) suggests that the vast majority of these recommendations are eventually adopted (Balleisen et al. 2017, 507; National Transportation Safety Board 2017). The respect for the quality of the analysis and the objectivity of the NTSB has proven to be effective at persuading the regulatory agencies and Congress to take recommendations seriously.

The objectives and tasks of learning from multiple rules – to test the actual performance of policy designs (in light of predictions), and to test and improve the accuracy of ex ante forecasting methods – seems to go beyond what one agency could undertake, unless the agency were analyzing multiple rules within its own portfolio (as it might to test performance of

[19] See also the Setting Manageable Analysis Requirements in Text (SMART) Act (May 2019), co-sponsored by Senators Kyrsten Sinema (D-AZ) and James Lankford (R-OK), which would require agencies to set metrics for how a rule will be measured for success in the future, to collect relevant data, and to use those metrics to review the rule within 10 years).

differing policy designs in one sector). The broader learning objectives, especially to test and improve on variation in ex ante forecasting methods, might be best served by an interagency working group, or an expert board, or a commission, with the breadth and staff expertise to compare across multiple rules.

The influence of retrospective reviews on regulatory rules could be advisory, or could have more legal authority. The outputs of analyses of individual rules, or of broader multi-rule and multi-methods analyses, could be presented to the relevant agencies as recommendations for agency action, and to OMB/OIRA as recommendations for new guidance such as on methods of ex ante and ex post impact assessment. Or they could be presented to Congress as recommendations for legislative enactment. Greater authority could be conferred if Congress were to enact legislation creating a commission and delegating to that commission some authority to adopt rules changes itself, but such an approach could sacrifice the value of agency expertise and could potentially be in conflict with principles of administrative law. One proposal is to have Congress create a regulatory review commission which would then propose a set of numerous changes to Congress which Congress would vote up or down as a package without amendments (Mandel and Carew 2013, 14).

In the past, retrospective review has often been seen as a one-time follow-up evaluation -- a second look back (after ex ante RIA). Achieving more regular and effective application of retrospective analysis would be an important advance. Going further, some rules or agency programs may warrant not just one look back, but ongoing multiple periodic reviews (e.g. every 2, 5 or 10 years), toward a continuous process of adaptive updating (Bennear and Wiener 2019b; McCray, Oye, and Petersen 2010; Ribeiro 2018). Some current laws call for such periodic reviews, such as the reviews every 5 years of the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act, and of policies under the Lautenberg Chemical Safety for the 21st Century Act.

5. Conclusions and Recommendations

Despite extensive use of prospective regulatory impact assessment, and a long history of calls for retrospective regulatory review from Presidents, Congress, and others, there has been limited implementation of systematic retrospective reviews of regulation. There are many factors that collectively contribute to this pattern; this paper highlights the role of institutions. Prior efforts have primarily called for retrospective reviews to be conducted by the promulgating agency, one rule at a time. We argue that retrospective review has at least three different goals—rule relevance, rule improvement, and regulatory learning – and several different tasks. We show that most retrospective reviews to date have focused on the rule relevance goal and to some extent on the rule improvement goal, but with a narrow focus on costs. And we argue that the regulatory learning goal could be better advanced by assessing a broader set of impacts, and by employing broader institutonal options to examine multiple rules and RIAs across multiple agencies.

Efforts at retrospective analysis of regulation could be strengthened by matching the different goals and tasks of retrospective review to different policy institutions. Not all retrospective

analysis needs to take place at the promulgating agency. Our specific recommendations for how to improve this institutional match include:

Recommendation 1: Consistent guidance on retrospective reviews should be issued by the Office of Management and Budget/Office for Information and Regulatory Affairs.

To assist agencies and to ensure comparability across their analyses, consistent criteria for retrospective reviews applicable to all federal agencies should be developed by OMB/OIRA. OMB/OIRA has issued this type of unifying guidance for prospective RIAs in its "Circular A-4." A counterpart to this Circular should be developed to help agencies, commissions, or other analysts conduct retrospective reviews. Key issues to cover in this unifying guidance include: rule selection, establishing baselines and counterfactuals, scope of impacts to assess, appropriate statistical and other methods of inference, data collection and archival requirements, etc. (Cropper, Fraas, and Morgenstern 2017, 1376).

Recommendation 2: Selection of rules for review should be transparent and focused on potential to improve net benefits. Additional funding should be provided for conducting such reviews.

Several prior efforts have required agencies to develop multi-year plans for retrospective review. Most recently, pursuant to the Foundations for Evidence-Based Policy Making Act of 2018, agencies must develop plans for evidence collection to help answer their identified policy questions. These efforts are laudable, but better guidelines are needed for developing these plans. In developing plans for retrospective analyses of their own rules, agencies should be directed to: (i) select rules not only for their high costs, but for their expected opportunity to improve net benefits; (ii) establish invitations for public input on the selection and analysis of rules, with the determination by the agency of which rules to review (Bull 2015);[20] and (iii) evenhandedly assess not only costs but also the full portfolio of relevant impacts including benefits, ancillary impacts (co-benefits and countervailing risks), net benefits, and distributional equity. A preliminary screening or scoping stage could initially take a broad view of impacts and thereby identify which specific impacts are of most importance for the analysis and improvement of each rule.

Furthermore, most past efforts have required agencies to engage in this activity without any additional funding. This creates a disincentives for agencies to conduct retrospective reviews, facing the opportunity cost of shifting resources from other priorities. It is unrealistic to expect high quality reviews that lead to significant regulatory improvements without allocating additional funds to facilitate retrospective analyses.

Recommendation 3: Agencies' prospective plans for retrospective review should include details for data collection and monitoring and include plans for periodic reviews at specified time intervals.

[20] See also https://ec.europa.eu/info/law/law-making-process/evaluating-and-improving-existing-laws/refit-making-eu-law-simpler-and-less-costly_en.

Agencies should include in each major new rule a plan for prospective data collection (monitoring) of relevant impacts and scheduled retrospective analysis at a future time (Cropper, Fraas, and Morgenstern 2017; Miller 2015; Dudley and Katzen 2019). Planning for these data in advance can overcome some of the challenges presented by the Paperwork Reduction Act in limiting agencies from collecting additional data after the regulation is promulgated. In order to plan ahead for retrospective review of policy designs and their performance, in appropriate cases (which may not be possible in all rules), agency rules could include control groups or alternative treatment groups, such as stages of early and later implementation over time, or variation in policy parameters across states or regions or actors (Cropper, Fraas, and Morgenstern 2017, 1376).[21]

Where appropriate, agencies should develop Planned Adaptive Regulation (PAR) with regular data collection and ongoing periodic reviews, at time intervals (e.g. 2 years, 5 years, 10 years) that balance the expected gains from learning (value of new information for improved policy) with the expected costs of review (monitoring, analysis, adjustment) (Bennear and Wiener 2019b; McCray, Oye, and Petersen 2010).

Recommendation 4: An interagency working group or commission should be formed and tasked with identifying areas of regulatory learning that would improve outcomes across agencies and conducting cross-agency reviews.

An interagency working group, commission or board – e.g. GAO, ACUS, an NAS panel, an NTSB-like board, or a new regulatory improvement commission (RIC) (Mandel and Carew 2013) – should select and assess sets of multiple rules (from multiple agencies), in order to (i) compare and learn from variation in policy designs, (ii) learn from cumulative and interactive impacts, and (iii) test and improve the accuracy of ex ante RIA methods. Such a body would likely need data from the relevant agencies. It would need expert staff and funding. It would offer its findings and recommendations, at least as advisory inputs to subsequent agency actions, but it may not have the legal authority to implement changes to regulatory policies. (Nonetheless, an independent standing expert analysis body may be influential in such an advisory role, assisting agencies and oversight bodies with timely analyses and recommendations, and overcoming some of the inhibitions faced by agencies regarding staffing, time, and self-criticism (Balleisen et al. 2017).) The required advisory committee under the Foundations for Evidence-Based Policymaking Act of 2018 is a good start toward developing such a working group. To succeed, such a body must have expert membership, meaningful authority to identify cross-cutting issues, access to key data, and the capacity to evaluate regulatory performance across rules and agencies, to evaluate forecasting accuracy across methodologies, to make recommendations, and to follow-up on recommendation implementation.

[21] In some cases, such planned policy variation could involve randomized trials.

Table 1: Past Executive Branch Efforts at Retrospective Review

CALL FOR RETROSPECTIVE REVIEW	WITHIN AGENCY	ACROSS AGENCIES
Rule Relevance Goal	Carter 12044, 4(d), (e), (f)[i] Reagan 12498[ii] Clinton 12866, 5(a),[iii] (b)[iv] Obama 13563, 6(a)[v] Obama 13579, 2(a)[vi] Obama 13610, 1[vii] RFA s. 610(b)(1)–(3), (5);[viii] TSCA, 15 U.S.C. 2625(l)(2)(B);[ix] Telecomm Act, 47 U.S.C. 161(a)(2);[x] Consolidated Appropriations Act of 2012, s. 202(c)[xi]	Clinton 12866, 5(c)[xii]
Rule Improvement Goal		
Cost Criterion *(has the rule imposed high costs or burdens, and could they be eased)*	Carter 12044, 4(c)[xiii] Reagan 12498[xiv] Clinton 12866, 1(a),[xv] 5(a),[xvi] (b)[xvii] Obama 13563, 1(a)[xviii] & (b)[xix], 6(a)[xx] Obama 13579, 2(a)[xxi] Obama 13610, 3[xxii] Trump 13771, 1[xxiii] RFA, 5 U.S.C. 610(a)[xxiv] PRA, 44 U.S.C. 3507 (g), (h)(1)[xxv]	Clinton 12866, 5(c)[xxvi]
Benefits and Effectiveness Criterion *(has the regulation accomplished its intended goals or achieved its intended benefits)*	Carter 12044, 4(a)[xxvii] Obama 13563, 1(a),[xxviii] 6[xxix] SDWA, 42 U.S.C. 300g-1(b)(9); TSCA, 15 U.S.C. 2625(l)(2)(A); Telecomm Act, 47 U.S.C. 161(a)(2);	Clinton 12866, 5(c)[xxx]
Cost-effectiveness Criterion *(has the regulation accomplished its intended benefits at least cost)*	Clinton 12866, 5(a)[xxxi] Obama 13563, 1(a)[xxxii]	Clinton 12866, 5(c)[xxxiii]
Ancillary Impacts Criterion *(has the regulation yielded unintended consequences or side effects, such as ancillary*	Reagan 12291, 2(a)[xxxiv] Obama 13610, 2[xxxv] Trump 13771[xxxvi] RFA s. 610(a)[xxxvii]	

benefits (co-benefits) or ancillary harms (countervailing risks))	CAA, s. 812	
Efficiency Criterion *(has the regulation maximized net benefits (benefits minus costs, including ancillary impacts) or could they be increased)*	Reagan 12291, 2(b)–(d)[xxxviii] Clinton 12866, 1(a)[xxxix] Obama 13563, 1(b)[xl]	Reagan 12291, 6(a)(5)[xli] Clinton 12866, 5(c)[xlii]
Distributional Equity Criterion *(has the regulation achieved the goals for which it was designed in a manner that provided (in)equitable distribution of net benefits or could the same level of net benefits be provided with improved distribution of those net gains)*	Clinton 12866, 1(a),[xliii] 5 Obama 13563, 1(c)[xliv]	
Regulatory Learning Goal		
Interactive & Cumulative Effects Criterion (improving the understanding of the interaction effects of multiple regulations and in the aggregate)	Clinton 12866, 5[xlv] Obama 13610, 3[xlvi] RFA s. 610(b)(4)[xlvii]	Clinton 12866, 5(c)[xlviii]
Policy Design Criterion (improving understanding of policy alternatives to evaluate how they actually work in practice compared to predictions in theory)	GPRA, 31 U.S.C. 1115(b)(7)	
Methods Accuracy Criterion (improving the forecasting methods used to conduct ex ante RIAs)		

Notes and Sources for Table 1:

[i] Section 4 of EO 12044 mandates that agencies periodically review their existing regulations according to criteria including "(d) the need to simplify or clarify language; (e) the need to eliminate overlapping and duplicative regulations; and (f) the length of time since the regulation has been evaluated or the degree to which technology, economic conditions or other factors have changed in the area affected by the regulation."

[ii] One of the policy objectives specified in the preamble is to "minimize duplication and conflict of regulations."

[iii] "The agency shall also identify any legislative mandates that require the agency to promulgate or continue to impose regulations that the agency believes are unnecessary or outdated by reason of changed circumstances."

[iv] Section 5(b) of EO 12866 mandates "the identification of regulations that impose significant or unique burdens

on those governmental entities *and that appear to have outlived their justification or be otherwise inconsistent with the public interest*" (emphasis added).

[v] "[A]gencies shall consider how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned."

[vi] "[I]ndependent regulatory agencies should consider how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned."

[vii] "[I]t is particularly important for agencies to conduct retrospective analyses of existing rules to examine whether they remain justified and whether they should be modified or streamlined in light of changed circumstances, including the rise of new technologies."

[viii] The Regulatory Flexibility Act requires that agencies consider the following factors in reviewing rules "to minimize any significant economic impact of the rule on a substantial number of small entities": "(1) the continued need for the rule; (2) the nature of complaints or comments received concerning the rule from the public; (3) the complexity of the rule . . . (5) the length of time since the rule has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the rule."

[ix] The Lautenberg Amendment to TSCA in 2016 requires that the EPA "revise . . . policies . . . to reflect new scientific developments or understandings" every five years.

[x] "[The FCC] shall determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service."

[xi] The Act requires that OMB's EO 13563 report to "identify[] existing regulations that have been reviewed and determined to be outmoded, ineffective, or excessively burdensome."

[xii] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy principles in section 5 is whether the regulations "have become unjustified or unnecessary as a result of changed circumstances."

[xiii] Section 4(c) of EO 12044 requires that agencies consider "the burdens imposed on those directly or indirectly affected by the regulation" when conducting periodic reviews.

[xiv] One of the policy objectives identified in the preamble is to "reduce the burdens of existing and future regulations."

[xv] "In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating."

[xvi] Section 5(a) of EO 12866 requires that agencies periodically review their regulations, in part, "to make the agency's regulatory program . . . less burdensome."

[xvii] Section 5(b) of EO 12866 mandates "the identification of regulations that *impose significant or unique burdens on those governmental entities* and that appear to have outlived their justification or be otherwise inconsistent with the public interest" (emphasis added).

[xviii] The preamble says that regulations "must take into account benefits and costs, both quantitative and qualitative."

[xix] Mandates that each agency "tailor its regulation to impose the least burden on society . . . taking into account . . . the costs of cumulative regulations"

[xx] "[A]gencies shall consider how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned."

[xxi] Requires that regulatory periodic review identify rules that may be, among others, "excessively burdensome."

[xxii] "In implementing and improving their retrospective review plans, and in considering retrospective review suggestions from the public, agencies shall give priority, consistent with law, to those initiatives that will produce significant quantifiable monetary savings or significant quantifiable reductions in paperwork burdens while protecting public health, welfare, safety, and our environment."

[xxiii] The policy of EO is to cut costs, and section 1 specifies that "for every one new regulation issued, at least two prior regulations be identified for elimination, and that the cost of planned regulations be prudently managed and controlled through a budgeting process."

[xxiv] The Regulatory Flexibility Act requires that agencies conduct periodic reviews "to minimize any significant economic impact of the rules upon a substantial number of such small entities."

[xxv] The PRA prohibits that OMB approve information collection that takes place for longer than three years (section (g)), and it requires that agencies seeking an extension of the three-year limit to conduct a review and consider the "burden imposed by he collection of information" (section (h)(1)).
[xxvi] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy principles in section 5 is "to reduce the regulatory burden," and one of the criteria is whether the regulations "are inappropriately burdensome in the aggregate."
[xxvii] Section 4(a) of EO 12044 requires that agencies consider "the continued need for the regulation" when conducting periodic reviews.
[xxviii] Section 1(b) of EO 13563, which sets out general principles of regulation, says that regulations "must take into account benefits and costs, both quantitative and qualitative."
[xxix] Requires that agencies consider rules that may be "outmoded, ineffective, insufficient, or excessively burdensome."
[xxx] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy principles in section 5 is whether the regulations "have become unjustified or unnecessary as a result of changed circumstances," which can include the regulations having achieved their intended goals.
[xxxi] Section 5(a) of EO 12866 requires that agencies periodically review their regulations, in part, "to make the agency's regulatory program more effective in achieving the regulatory objectives."
[xxxii] The preamble says that regulation "must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends."
[xxxiii] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy principles in section 5 is "to improve the effectiveness of existing regulations."
[xxxiv] The subsection on regulatory philosophy says "[a]dministrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action."
[xxxv] Invites public and local governments to participate in the rule review process because they "have important information about the actual effects of existing regulations."
[xxxvi] Considers "the costs associated with governmental imposition of private expenditures required to comply with Federal regulations."
[xxxvii] "to minimize any significant economic impact of the rules upon a substantial number of such small entities"
[xxxviii] Section 2 of EO 12291 sets out the general requirements, and it requires: "(b) Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society; (c) Regulatory objectives shall be chosen to maximize the net benefits to society; (d) Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and (e) Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future."
[xxxix] Section 1(a) of 12866 sets out the policy objectives of EO 12866, which includes requiring that agencies select approaches that "maximize net benefits."
[xl] Section 1(b) of EO 13563, which sets out general principles of regulation, requires that agencies "select . . . those approaches that maximize net benefits."
[xli] Allows OMB director to identify rules that are inconsistent with the policy objectives of this EO, which includes maximization of net benefits (see cell to the left).
[xlii] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy principles in section 5 is whether the regulations "have become unjustified or unnecessary as a result of changed circumstances."
[xliii] Section 1(a) of 12866 sets out the policy objectives of EO 12866, which includes requiring that agencies select approaches that "maximize net benefits," which includes considering the "distributive impacts" of the regulation.

[xliv] "Where appropriate and permitted by law, each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts."
[xlv] Section 5 of EO 12866 includes as one of its policy objectives "to confirm that regulations are both compatible with each other and not duplicative or inappropriately burdensome in the aggregate."
[xlvi] "[A]gencies shall give consideration to the cumulative effects of their own regulations, including cumulative burdens, and shall to the extent practicable and consistent with law give priority to reforms that would make significant progress in reducing those burdens while protecting public health, welfare, safety, and our environment."
[xlvii] Mandates that reviews include "the extent to which the rule overlaps, duplicates or conflicts with other federal rules."
[xlviii] Section 5(c) of EO 12866 permits the identification for review, according to the policy principles set out in this section, "existing regulations of an agency or *groups of regulations of more than one agency that affect a particular group, industry, or sector of the economy*" (emphasis added). One of the policy in EO 12866 is whether the regulations "are both compatible with each other and not duplicative or inappropriately burdensome in the aggregate."

Table 2. Mapping Objectives and Tasks to Institutions

	Agency that promulgated or issued the rule	Multi-agency Working Group	Center of gov't – e.g. US OMB/OIRA, EU RSB	Commission or expert board – which could be post-crisis (e.g. 9/11 or BP Inquiry), or a standing body (e.g. NTSB, GAO, ACUS, or a new Regulatory Improvement Commission)	Courts	Researchers – universities, think tanks (including via NAS panels)	Stakeholders – NGOs, industry
Selection of which rules to analyze	Ex ante EIA (NEPA) Ex ante RIA Ex post RIA		Can flag rules for ex ante or ex post RIA	Could select sets of rules and RIAs for comparative evaluation		Can select rules for academic research	Litigation challenging ex ante EIA (NEPA) Suggestions (or petitions) for ex post RIA
Impact Assessment: -Costs -Benefits -Ancillary impacts -Net benefits -Distribution	Ex ante EIA, RIA Ex post RIA (US agencies) (has focused on cost)	Ex post RIA (EU REFIT Platform) (has focused on cost)	Guidance on methods (e.g. OMB Circular A-4; CEQ regs); could add for ex post	Could issue guidance on methods for ex post		Can conduct ex ante and ex post analyses -- under contract to agencies, or as academic research	

Assess multiple rules to test policy designs, and cumulative impacts	If multiple rules within same agency.	Could do so	Could oversee	Could do so – perhaps best equipped		Could do so	
Assess multiple rules to test accuracy of ex ante RIA methods	If multiple rules within same agency.	Could do so	Could oversee	Could do so – perhaps best equipped		Could do so	
Oversight and review of analysis			Ex ante RIA Ex post RIA	Could do so	EIA (NEPA) RIA (as part of judicial review of rule)	Can review agency EIAs, RIAs	

Bibliography

Administrative Conference of the U.S. 1995. *Recommendation 95-3, Review of Existing Agency Regulations*. *60 Fed. Reg. 43,108, 43,109*.

———. 2014. *Recommendation 2014-5, Retrospective Review of Agency Rules*. *79 Fed. Reg. 75,114, 75,114-117*.

———. 2017. *Recommendation 2017–6, "Learning From Regulatory Experience." 82 Fed. Reg. 61,738 – 61,742*.

Aldy, Joseph Edgar. 2014. "Learning from Experience: An Assessment of the Retrospective Reviews of Agency Rules and the Evidence for Improving the Design and Implementation of Regulatory Policy." In . Administrative Conference of the United States.

American Bar Association. 2016. "Improving the Administrative Process: A Report to the President Elect." http://www.americanbar.org/content/dam/aba/administrative/administrative_law/Final%20POTUS%20Report%2010-26-16.authcheckdam.pdf.

Balleisen, Edward J, Lori S. Bennear, David Cheang, Jonathon Free, Megan Hayes, Emily Pechar, and A. Catherine Preston. 2017. "Institutional Mechanism for Investigating the Regulatory Impolications of a Major Crisis: The Commission of Inquirty and the Safety Board." In *Policy Shock: Recalibrating Risk and Regulation after Oil Spills, Nuclear Accidents, and Financial Crises*, edited by Edward J Balleisen, Lori S. Bennear, Kimberly D. Krawiec, and Wiener, Jonathan B. Cambridge, U.K.: Cambridge University Press.

Belton, Keith B., and John D. Graham. 2019. "Trump's Deregulatory Record: An Assessment at the Two-Year Mark." http://accf.org/2019/03/13/new-report-trumps-deregulatory-record/.

Bennear, Lori S., and Jonathan B. Wiener. 2019a. "Adaptive Regulation: A Framework for Policy Learning Over Time." Draft.

Bennear, Lori S, and Jonathan B. Wiener. 2019b. "Built to Learn." In *Better Planet*, edited by Daniel C. Esty. New Haven, CT: Yale University Press.

Breyer, Stephen G. 1982. *Regulation and Its Reform*. Harvard University Press.

Bull, Reeve T. 2015. "Building a Framework for Governance: Retrospective Review and Rulemaking Petitions." *Admin. L. Rev.* 67: 265.

Clean Air Act Amendments of 1990. 1990. *Public Law 101-549*. https://www.govtrack.us/congress/bills/101/s1630/text.

Coglianese, Cary. 2002. "Empirical Analysis and Administrative Law." *U. Ill. L. Rev.*, 1111.

———. 2012. "Moving Forward with Regulatory Lookback." *Yale J. Reg. Online* 30: 57.

———. 2013. "Thinking Ahead, Looking Back: Assessing the Value of Regulatory Impact Analysis and Procedures for Its Use." *Korean Journal of Law and Legislation* 3: 5.

Consolidated Appropriations Act of 2012. 2012. *Pub. L. 112-74, 125 Stat. 786*.

Council on Wage and Price Stability Act. 1974. *Pub. L. No. 93-387, § 3(A)(7), 88 Stat. 750*.

Craik, Neil. 2008. *The International Law of Environmental Impact Assessment: Process, Substance and Integration*. Vol. 58. Cambridge University Press.

Cropper, Maureen, Arthur Fraas, and Richard Morgenstern. 2017. "Looking Backward to Move Regulations Forward." *Science* 355 (6332): 1375–1376.

Davenport, Coral. 2019. “Automakers Plan for Their Worst Nightmare: Regulatory Chaos After Trump’s Emissions Rollback.” *New York Times*, Ap[ril 2019. https://www.nytimes.com/2019/04/10/climate/auto-emissions-cafe-rollback-trump.html.

Davenport, Coral, and Hiroko Tabuchi. 2019. “Automakers, Rejecting Trump Pollution Rule, Strike a Deal With California.” *New York Times*, July 25, 2019. https://www.nytimes.com/2019/07/25/climate/automakers-rejecting-trump-pollution-rule-strike-a-deal-with-california.html.

Dudley, Susan. 2013. “A Retrospective Review of Retrospective Review.” Regulatory Studies Center, The George Washington University. https://regulatorystudies.columbian.gwu.edu/sites/g/files/zaxdzs1866/f/downloads/20130507-a-retrospective-review-of-retrospective-review.pdf.

Dudley, Susan, and Sally Katzen. 2019. “Crossing the Aisle to Streamline Regulation.” *Wall Street Journal*, May 13, 2019. https://www.wsj.com/articles/crossing-the-aisle-to-streamline-regulation-11557788679.

Eisner, Neil R., and Judith S. Kaleta. 1996. “Federal Agency Reviews of Existing Regulations.” *Administrative Law Review* 48: 139.

Executive Order 11821. 1974. *39 Fed. Reg. 41,501*.

Executive Order 11949. 1976. *41 Fed. Reg. 23,663*.

Executive Order 12044. 1978. *43 Fed. Reg. 12,661*.

Executive Order 12291. 1981. *3 CFR, 1981 Comp.*

Executive Order 12498. 1985. *50 FR 1036, 3 CFR, 1985 Comp.*

Executive Order 12866. 1993. *58 FR 51735*.

Executive Order 13563. 2011. *76 Fed. Reg. 3821*.

Executive Order 13579. 2015. *76 Fed. Reg. 41,587*.

Executive Order 13610. 2012. *Fed. Reg. 28,469*.

Executive Order 13771. 2017. *82 FR 9339*.

Executive Order 13777. 2017. *82 FR 12285*.

Executive Order 16563. 2011. *76 Fed. Reg. 3821*.

Farber, Daniel A. 1993. “Environmental Protection as a Learning Experience.” *Loy. LAL Rev.* 27: 791.

Ford, Gerald. 1974. “‘Whip Inflation Now’ Speech (October 8, 1974).” Miller Center - University of Virginia. October 8, 1974. http://millercenter.org/president/ford/speeches/speech-3283.

Foundation for Evidence-Based Policymaking Act. 2019. *Public Law 115-435*.

Frank R. Lautenberg Chemical Safety for the 21st Century Act of 2016, Amending the Toxic Substances Control Act (TSCA). 2016. *15 U.S.C. § 2601 et Seq.*

Government Performance and Results Act. 1993. *Pub. L. 103-62*.

GPRA Modernization Act of 2010. 2010. *Pub. L. 111-352*.

Graham, John D. 2008. “Saving Lives through Administrative Law and Economics.” *U. Pa. L. Rev.* 157: 395.

Greenstone, Michael. 2009. “Toward a Culture of Persistent Regulatory Experimentation and Evaluation.” In *New Perspectives on Regulation*, edited by David Moss and John Cisternino. Cambridge, MA: The Tobin Project.

Gubler, Zachary J. 2017. “Regulatory Experimentation.” Administrative Conference of the United States.

https://www.acus.gov/sites/default/files/documents/ZGubler%20ACUS%20Final%20Report%2811-17%29.pdf.
Hahn, Robert W. 2000. "State and Federal Regulatory Reform: A Comparative Analysis." *Journal of Legal Studies* 29: 873.
Harrington, Winston. 2006. "Grading Estimates of the Benefits and Costs of Federal Regulation."
Harrington, Winston, Richard D Morgenstern, and Peter Nelson. 2000. "On the Accuracy of Regulatory Cost Estimates." *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management* 19 (2): 297–322.
Ladegaard, Peter Farup, Petter Lundkvist, and Jonathan Camillo Kamkhaji. 2018. "Giving Sisyphus a Helping Hand: Pathways for Sustainable RIA Systems in Developing Countries." SSRN Scholarly Paper ID 3144089. Rochester, NY: Social Science Research Network. https://papers.ssrn.com/abstract=3144089.
Lutter, Randall. 2013. "Regulatory Policy: What Role for Retrospective Analysis and Review?" *Journal of Benefit-Cost Analysis* 4 (1): 17–38.
Mandel, Michael, and Diana G Carew. 2013. "Regulatory Improvement Commission: A Politically-Viable Approach to US Regulatory Reform." *Progressive Policy Institute*, 3.
McCray, Lawrence E, Kenneth A Oye, and Arthur C Petersen. 2010. "Planned Adaptation in Risk Regulation: An Initial Survey of US Environmental, Health, and Safety Regulation." *Technological Forecasting and Social Change* 77 (6): 951–959.
Mendelson, Nina A, and Jonathan B Wiener. 2014. "Responding to Agency Avoidance of OIRA." *Harv. JL & Pub. Pol'y* 37: 447.
Miller, Sofie E. 2015. "Learning from Experience: Retrospective Review of Regulations in 2014." The George Washington University Regulatory Studies Center. https://pdfs.semanticscholar.org/e959/6d4d6315c8d286bde43e9766e940d905c817.pdf.
Morgenstern, Richard D. 2015. "The RFF Regulatory Performance Initiative: What Have We Learned?" *Resources for the Future Discussion Paper*, 15–47.
National Environmental Policy Act (NEPA). 1970. *42 U.S.C.*
National Transportation Safety Board. 2017. "National Transportation Safety Board Marks 50 Years of Saving Lives." https://www.ntsb.gov/news/press-releases/Pages/PR20170403.aspx.
Obama, Barack. 2009. "First Inaugural Address." Washington, D.C.
OECD. 2012. "2012 OECD Recommendation of the Council on Regulatory Policy Governance." OECD Publishing.
———. 2015. "Regulatory Policy Outlook."
———. 2018. *OECD Regulatory Policy Outlook 2018*. https://www.oecd-ilibrary.org/content/publication/9789264303072-en.
Office of Information and Regulatory Affairs. 2005. "Validating Regulatory Analysis: 2005 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities." https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/omb/inforeg/2005_cb/final_2005_cb_report.pdf.
———. 2017. "2017 Draft Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act," 101.
Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999. 1999. *Pub. L. No. 105-227, §§ 683(a)(1)-(3), 112 Stat. 2681*.

Paperwork Reduction Act. 2000. *44 U.S.C. §§ 3507(g)-(h)(1)*.
Paperwork Reduction Act of 1995. n.d. *Title 44*. Vol. Chapter 35. https://www.govinfo.gov/content/pkg/PLAW-104publ13/html/PLAW-104publ13.htm.
Pidot, Justin R. 2015. "Governance and Uncertainty." *Cardozo L. Rev.* 37: 113.
Ranchordás, Sofia. 2015. "Sunset Clauses and Experimental Regulations: Blessing or Curse for Legal Certainty?" *Statute Law Review* 36 (1): 28–45.
Regulatory Flexibility Act. 2012. *5 U.S.C. § 602(a)(1)*.
Renda, Andrea. 2017. "One Step Forward, Two Steps Back? The New US Regulatory Budgeting Rules in Light of the International Experience." *Journal of Benefit-Cost Analysis* 8 (3): 291–304.
Revesz, Richard L, and Michael A Livermore. 2008. *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health*. Oxford University Press.
Ribeiro, Daniel L. 2018. "Adaptive RIA." SJD Dissertation, Durham, NC: Duke Law School.
Safe Drinking Water Act. 1974. *42 U.S.C. §300f et Seq.*
Schwartz, Jason. 2010. "52 Experiments with Regulatory Review." 6. Institute for Policy Integrity.
Shapiro, Stuart, Debra Borie-Holtz, and Ian Markey. 2016. "Retrospective Review in Four States." *Regulation* 39: 32.
Sunstein, Cass R. 2014. "The Regulatory Lookback." *BUL Rev.* 94: 579.
Telecommunications Act of 1996. 1996. *47 U.S.C.: Telegraphy*.
Tetlock, Philip E., and Dan Gardner. 2015. *Superforecasting: The Art and Science of Prediction*. Signal.
Treasury and General Government Appropriations Act of 2001. 2001. *2681 (1998); Treasury and General Government Appropriations Act of 2001, §*.
Treasury, Postal Services and General Government Appropriations Act of 1997. 1997. *§ 645, Pub. L. No. 104-208, 110 Stat. 3009*.
Trnka, Daniel, and Yola Thuerer. 2019. "One-In, X-Out: Regulatory Offsetting in Selected OECD Countries." https://www.oecd-ilibrary.org/content/paper/67d71764-en.
Unfunded Mandates Act of 1995. 1995. *2 U.S.C. § 1552(a)(3)(d)*.
Wagner, Wendy, William West, Thomas McGarity, and Lisa Peters. 2017. "Dynamic Rulemaking." *NYUL Rev.* 92: 183.
White, Adam J. 2016. "Retrospective Review, for Tomorrow's Sake." *Yale Journal on Regulation: Notice and Comment Blog* (blog). November 28, 2016. http://yalejreg.com/nc/retrospective-review-for-tomorrows-sake-by-adam-j-white/.
Wiener, Jonathan B. 1998. "Managing the Iatrogenic Risks of Risk Management." *Risk* 9: 39.
———. 2013. "The Diffusion of Regulatory Oversight." In *The Globalization of Cost-Benefit Analysis in Environmental Policy*, edited by Michael A. Livermore and Richard L. Revesz. Oxford, U.K.: Oxford University Press.
———. 2018. "Precautionary Principle." In *Elgar Encyclopedia of Environmental Law*, edited by Michael Faure. Vol. VI: Principles of Environmental Law. Cheltenham, U.K. and Northampton, MA: Edward Elgar. https://www.elgaronline.com/view/nlm-book/9781786436986/b-9781785365669-VI_13.xml.
Wiener, Jonathan B., and Alberto Alemanno. 2010. "19 Comparing Regulatory Oversight Bodies across the Atlantic: The Office of Information and Regulatory Affairs in the US and the Impact Assessment Board in the EU." Edited by Susan Rose-Ackerman and Peter Lindseth. *Comparative Administrative Law*, 309.

———. 2015. “The Future of International Regulatory Cooperation: TTIP as a Learning Process toward a Global Policy Laboratory.” *Law & Contemp. Probs.* 78: 103.
———. 2017. “Comparing Regulatory Oversight Bodies: US OIRA and the EU RSB.” In *Comparative Administrative Law*, edited by Susan Rose-Ackerman and Peter Lindseth, 2nd ed. Edward Elgar.
Wiener, Jonathan B., and Daniel L. Ribeiro. 2016b. “Environmental Regulation Going Retro.” *Journal of Land Use & Environmental Law* 32 (1): 1–74.
———. 2016a. “Impact Assessment: Diffusion and Integration.” In *Comparative Law and Regulation*, edited by Francesca Bignami and David Zaring. Edward Elgar.