A Political Clearinghouse?
Organizational and Presidential Effects in OIRA Review

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Abstract

A critical feature of the U.S. regulatory environment is the veto over proposed regulations exercised by the Office of Information and Regulatory Affairs (OIRA). Since Reagan's Executive Order 12,291 in 1981, OIRA has served as an agency tasked with conducting and checking benefit-cost analyses attached to proposed rules, a role that places it as a gatekeeper in the rulemaking process. Why do some rules receive swift enactment while others languish in long reviews? This paper presents a formal model of regulatory review as well as an empirical analysis of all reviews completed by OIRA from 1981 to 2012. Our initial analysis supports both political and organizational explanations. The dominant factor shaping review duration is the agency issuing the rule reviewed. Across agencies, estimated ideology is significantly correlated with review duration, such that more "conservative" agencies receive faster than expected reviews. Moreover, this ideological trend persists across Democratic and Republican presidential administrations. Importantly, increases in OIRA's workload and reductions in capacity also play a role in explaining increasing review durations.

We investigate the possibility of additional presidential effects and find that rules issued under presidential priority statutes in the Obama Administration – namely the Affordable Care and Dodd-Frank Acts of 2010 – receive systematically faster reviews, despite the fact that these policies are new, cross agency jurisdictions, and are inherently complex. Our analysis highlights the importance of accounting for both bureaucratic and political factors in understanding OIRA's oversight of regulation.

The "regulation of regulation" has become a growth industry in government and in academia. Various nation states have established procedures for benefit-cost analysis (BCA) or regulatory impact analysis (RIA) in which quantitative and qualitative examinations of regulatory rules and policies are carried out before they are implemented, as they are

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implemented, or after their implementation. A common feature of these institutions is the requirement imposed upon rule-issuing agencies to first conduct a BCA or RIA before the rule is proposed or finalized, and some governments add an extra stage of decision making in which an agency separate from the rule-issuing agency evaluates the quality of the issuing agency's BCA/RIA and can demand changes to the rule with the aim of rendering the rule more beneficial from a utilitarian social welfare perspective. The academic literature on these practices and institutions is fast-growing. One strand of the literature focuses upon methodology (Harrington 2006), some of it focuses upon normative principles of whether and how BCA/RIA should be applied (Ackerman and Heinzerling 2004; Graham 2008; Harrington, Heinzerling and Morgenstern 2009), and some of it is empirical and examines the practice of BCA/RIA (McLaughlin and Ellig 2011; Shapiro and Morrall III 2012; Ellig, McLaughlin and Morrall III 2013).

A critical feature of the U.S. arrangement is the veto power exercised by the Office of Information and Regulatory Affairs (OIRA), and it is this power and its exercise that compose the focus of our study. Since the original Executive Order 12,291 (1981) and its cementation in later presidential executive orders (Clinton's EO 12,866 (1993) and Obama's EO 13,563 (2011)), OIRA has served as an agency conducting and checking benefit-cost analyses, but its real institutional power rests in its effective veto power over proposed rules. Faced with a rule that it opposes, OIRA can request changes that must be satisfied in order for the rule to be finalized. Put differently, *the assent of OIRA is a necessary condition for a rule to achieve final publication and hence to carry the force of law.* As a corollary observation, the veto power of OIRA over proposed rules functions as the incentive mechanism that induces agencies to undertake the BCA/RIA in the first place. In the absence of this veto power, it is quite plausible that BCA/RIA would not take place or that it would be substantially less common and less thorough. Indeed, progressive arguments for the relaxation of regulatory review through implementation of "pragmatic regulatory impact analysis" (Steinzor, Sinden, Shapiro and Goodwin 2009) have suggested that it is not the practice of BCA that should be abandoned, but the veto power of OIRA that should

be reduced.

Why do some rules receive swift enactment while others languish in long reviews? We address this question with a formal model of regulatory review as well as an empirical analysis of all reviews completed by OIRA from 1981 to 2012. To preview our findings, we find that the dominant factor shaping review duration is the agency issuing the rule reviewed. Across agencies, estimated ideology is significantly correlated with review duration, such that more "conservative" agencies receive faster expected reviews, though we are not in a position to claim that this association reflects causality. As concerns the recent experience of regulatory review under OIRA, we find that review time has been systematically increasing across presidential administrations, with a noticeable increase in review time under President Obama. We also find that rules issued under presidential priority statutes in the Obama Administration – namely the Affordable Care Act of 2010 and the Dodd-Frank Act of 2010 – receive systematically faster reviews. Our analysis suggests that rules issuing from certain agencies and certain statutes receive systematically faster treatment from OIRA than others. We are not yet able to tie this to aspects of the agency such as quality of BCA, a tight estimate of the costs or benefits entailed in the rule, or other structural features of the agency. As perhaps one surprising feature of our analysis, we find little systematic difference in review times for economically significant rules relative to others.

Before commencing, we offer a critical caveat. We do not aim in this paper to provide causal estimates of a parameter; indeed, it is our intention to avoid any causal inference or statement whatsoever. All partial correlations we report are intended to be read as predictive associations, albeit associations which may be useful for hypothesis formation and for the development of quasi-experimental strategies for partial causal inference.

1   OIRA Review as Approval Regulation

We propose to examine OIRA decisions as examples of a larger class of actions in which veto power and evidentiary review takes place. Among the simpler and best known of these

institutions is the modern presidential veto, in which legislative proposals (bills) are submitted directly to the veto player (President). The resulting back-and-forth between legislature and executive, called "veto bargaining" (Cameron 2000), includes a significant amount of power observed as anticipation of the president's veto by legislative behavior in Congress. A more developed analogy upon which we rely here concerns a set of institutions termed "approval regulation" (Carpenter 2004; Carpenter and Ting 2007; Carpenter, Grimmer and Lomazoff 2010), which requires those actors who wish to change the status quo (e.g., a firm wishing to introduce a new drug, a rule-issuing agency) to produce a series of studies supporting their claims. Upon realization of the study results (which are publicly observable), the Proposer decides whether or not to proceed with the proposal. If the Proposer proceeds to submit the rule to the ultimate regulator (FDA, OIRA), then the regulator can decide to accept or reject the proposal. Negation of the proposal can happen in three ways – abandonment by the Proposer before submission to the Regulator, explicit rejection by the Regulator, and delay of rule approval by the Regulator (which in the limit as the delay gets longer and longer, is functionally equivalent to explicit rejection).

In both drug approval and regulatory review, the veto is implicit and explicit. The regulator can explicitly reject a rule or a new product application and/or ask for changes. But since the status quo is that no rule is issued and since the assent of OIRA is necessary, the delay of a rule also amounts to a partial or full veto by depreciation. (In the world where various political players attached expected utilities to the rule, one can imagine that the delay with which the rule appears results in its expected benefits being discounted by an appropriate amount.) Hence it is not merely the formal "veto" of rejecting a rule that is of interest, but the delaying of approval. Indeed, a cursory look at some of political debate over OIRA regulatory review suggests that it is OIRA delay that seems to compose a principal target.[1]

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[1] Whether these criticisms are on the mark is outside the scope of this analysis; we are simply drawing attention to these criticisms to note that clearly some organized interests in the American political system value the duration of OIRA review and, by extension, the speed with which proposed rules are finalized.

2   A Generalized Dynamic Model of Regulatory Review under Uncertainty

We rely on the previous literature to construct a portrait of regulatory review. We begin with an agent, located in an agency such as OIRA, who reviews proposed rules and who can be termed the Analyst. For purposes of the present model, we collapse all hierarchies and principal-agent relationships and regard the Analyst as a single decision maker. These relationships – between the agency and the Analyst or OIRA, or within OIRA, or between IRA and the President, to name several of many possibilities – could be added later to a richer model, and we suggest this as an appropriate extension to our efforts here.

There is a more general modeling agenda in examining regulatory review, one that has been launched by Bueno de Mesquita and Stephenson (2007). Their model examines regulatory review as a means of political control, but it does not make predictions about review times and does not consider the possibility of a queue of rules. Acs and Cameron (2013) consider OIRA behavior in the area of rules reviewed and scare-off of new rules, but do not examine timing. Our empirical and theoretical aims are quite different. Our aim is construct a model of regulatory review under uncertainty, a model that begets a simplified portrait of the OIRA review process and which generates some comparative statics.

The model we advance here is thus decision-theoretic and is intended not as a stand-alone theoretical effort but as a way of structuring the empirical investigation. The model and the empirical analysis make several simplifying assumptions, which we list and then explain in order.

- Average regulatory review time is monotonically increasing in the time required for consideration of evidence.

- Each rule is technologically independent of every other, though there may be learning across rules.

- Rule approval is irreversible for OIRA.

Review Time Driven by Learning. There are many factors that can explain duration of review. A delay in the review of a rule could be due to backlog, to staff turnover or some system failure (say, unexpected downtime in information systems or mail networks), or to another factor. The model rests upon the assumption that what drives review time is the process of learning about costs and benefits associated with application of the rule conditional upon its approval. Other factors are assumed to be random or, if not random, sufficiently negligible that the average review time is increasing in the amount of time spent learning about it.

Independence of Rules. For purposes of the model here, rules are assumed technically independent of one another. This is a problematic assumption in those cases where the effect of one rule depends upon the fact of another, not-yet-approved rule being approved.

Irreversibility of Rule Approval. To claim that rule approval is irreversible is a strong assumption, yet it is essentially true for OIRA as until recently, very few rules had "look-back" provisions whereby the issuing agency had to re-examine the benefits and costs of the rule after it took shape. Nor has OIRA had the ability to require agencies to rewrite their rules after they have been vetted by OMB. (Under the Dodd-Frank law, all rules issued by the new Consumer Financial Protection Bureau (CFPB) must be re-examined within five years of their issuance.) As further plausibility of this assumption, we note that OIRA leaders have recently tried to institute "retrospective regulatory review," in which benefit-cost analysis is considered for a range of rules that were issued before OIRA came into existence and/or that were previously reviewed and approved by OIRA. If OIRA and its leaders prefer the ability to systematically look back, then clearly they feel that some significant part of their initial review decision cannot be revisited.

The uncertainty over the net benefit of the proposed rule is expressed as a dynamic stochastic process, and here we use the canonical version of "Brownian motion." One can

think of a Brownian motion as an all-purpose random process whose independent movements in continuous time occupy a continuous state space. Brownian motion is useful for our purposes (and many others) because it offers a simple, additive and linear expression of uncertainty.

The Analyst observes the unfolding of realized rule value on a space Ω (with elements or experimental realizations ω), which is structured by a set of σ-algebras $\Im$, and a probability measure $\wp$. In addition, $\Im$ can be ordered and expressed as a filtration $(\Im_t)_{0 \leq t \leq \infty}$, which is a family of σ-algebras that is increasing in its index, hence $\Im_s \subset \Im_t$ if $s \leq t$. The filtration sequentially collects and orders all realizations $\omega = \omega_t$ on a time dimension from 0 to t. The collection $(\Omega, \Im, \Im_t, \wp)$ constitutes a filtered probability space. This filtered probability space supports a standard one-dimensional Brownian motion $Z(t)$, and we assume that a set of "usual hypotheses" hold. These hypotheses are standard in the analysis of stochastic differential equations (see Protter (2005: Chapter I, esp. pp. 34-36) for a summary and clear explanation).

Let the rule under consideration be indexed by i (where the issuing agency is indexed by j), and let the consideration time for rule i be given by t_i. We suppose that each rule is characterized by a net *welfare* parameter. In a health example, this will reflect the rule's effectiveness in treating the disease; in a financial example, this will reflect its contribution to the Agent's (the investor's or asset holder's) welfare. A rule's quality is a draw from a normal distribution of rule welfare, $\theta_i \sim \Phi(w, v_w)$ where $\Phi(w, v_w)$ represents the normal distribution with mean w and variance v_w. The actual value of θ_i is unknown to the Analyst, but is learned from the process of review; only one rule can be reviewed at a time.[2]

2.1 Continuous Time Evidence of Quality

The Agent collects continuous-time evidence about a rule's quality according to Brownian motion with drift, where the drift is determined by the (unobserved) quality (θ_i) of the case. Formally, the Analyst observes and experiences the realized value of the rule X_i,

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[2]As long as convex bundles of rules impart some randomness relative to previously reviewed components, the results of this one-rule-at-a-time model will generalize easily.

which evolves according to the following stochastic differential equation.

$$X_{ij}(t_i) = \theta_{ij}t_i + \xi z(t_i); t_i > 0$$

where t_i is the learning or utilization time for the ith rule, z_i is a standard normal distribution with mean zero and variance t_i. As we show below, the parameter ξ encodes the amount of information Equation 2.1 contains for the Analyst: if $\xi = 0$ then the Analyst can immediately infer the quality of the case by examining the slope of Equation 2.1 and as $\xi \to \infty$ the SDE contains no information about a rule's quality.

2.2   Estimating Rule Quality from Evidence

Given that the Analyst only observes $X_{ij}(t)$ we first prove that the learning problem is identified: the Analyst is able to disentangle the contribution of the quality of the case to $X_{ij}(t)$.

Identification of Learning Problem and Sufficient Statistics. We assume fixed coefficients and adopt the technology of Herman Chernoff (1968), who presents closed-form Bayes posteriors of a Brownian motion with drift.[3]   Without loss of generality, then, for any $X_{ij}(t_i)$, the history of $X_{ij}(t)$, $\mathbf{H}_{ij}(t_i)$ can be expressed by its sufficient statistics, namely the dual $(t_i, X_{iJ}(t)^*)$. Then,

$$\text{Posterior Mean} \equiv E_{x,t_i}(\theta_i) = \hat{\theta}_{it} = \frac{x/v_w + x_i/\xi^2}{1/v_w + t_i/\xi^2} \tag{2.1}$$

$$\text{Posterior Variance}(\hat{\theta}_i) \equiv V_{\theta_i}(t_i) = \frac{1}{1/v_w + t_i/\xi^2} = \frac{1}{[v_w(\theta, n)]^{-1} + \xi^{-2}t_i} \tag{2.2}$$

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[3]By scale invariance of the Brownian diffusion (Karatzas and Shreve 1991: 66-71), the usual operators and Lemmata of Ito calculus can be applied straightforwardly to these posterior quantities.

2.3   Filtered Evidence and Value Functions

The Analyst seeks to define an optimal continuation rule for the *filtered evidence process* found by combining Equations 2.1 and 2.2. The Analyst faces a convex payoff function $\hat{\theta}_i(t) \times t \mapsto \Psi(\hat{\theta}(t)_i, t_i)$, that is twice differentiable with respect to both $\hat{\theta}(t)_i$ and t. This function is a map from the current state of the filtered evidence process and time to the value experienced by the Analyst. Letting R represent the fixed cost of approving the rule and letting t_a represent the time at which the Analyst a̲pproves the rule, then for any particular rule, the Analyst wishes to maximize

$$\max Ee^{-\delta t_a} \left\{ \int_0^\infty e^{-\delta(y-t_i)} \theta^*(y,\omega) dy - R \right\} = Ee^{-\delta(t_a)} \left(\delta^{-1} \theta^* [t_a, \omega] - R \right)$$

where δ is a discount factor interior to the unit interval and y is a variable of integration. For the following analysis we will replace x_i with $\hat{\theta}_i$, without loss of generality due to the scale-invariance property of $X_{ij}(t_i)$.

2.4   The Optimal Stopping Rule and Its Properties

Each rule is associated with a prior $\theta_i^0 = \hat{\theta}(t_i = 0) = w$, which is the starting point for observations of $\hat{\theta}_t$. Using the scale-invariance of diffusions, which implies that the filtered evidence processes are also Brownian motions (Karatzas and Shreve 1991: 66-71), the Analyst's optimal policy will be to observe the first passage of the evidence process $\hat{\theta}(t)_i$ through a border that encodes the tradeoff between continuation of review with the incumbent rule and the value of approving it. The Analyst's optimal rule for this problem is known to satisfy the Hamilton-Jacobi-Bellman equation for each rule i:

$$\delta \Psi(\hat{\theta}, t_i) = \left\{ E_{\hat{\theta}, t_i} \Psi \left(\hat{\theta}(t + dt) \right) - \Psi \left(\hat{\theta}(t) \right) \right\} + o(dt)$$

where $o(t_i)$ denotes "vanishing" terms of order greater than t_i, that is, terms that converge to zero faster than t_i does. After applying Ito's Lemma, independence, and the pure martingale property, dividing through by the differential dt_i and taking limits as the

differential vanishes, the infinitesimal generator $\mathscr{L}$ for the incumbent evidence process $\hat{\theta}_i(t_i)$ can then be expressed as:

$$(\mathscr{L}_i^x \Psi)(x_i) = \Psi_{\hat{\theta}_i}(x_i, t_i) + \Psi_t(x_i, t_i) + \frac{1}{2} V_{\hat{\theta}_i}(t_i)^2 \Psi_{\hat{\theta}_i \hat{\theta}_i}(x_i, t_i)$$

Evaluating $\mathscr{L}_i^x \Psi(x_i)$ according to the Shiryaev conditions (smooth pasting and value matching; Shiryaev 1978) results in elimination of the Ψ_t term and a uniquely optimal first-passage time policy. The form of the barrier is described in Proposition 1.

Proposition 1: Optimal Stopping Barrier for Each Proposed Rule

The Analyst approves the rule when and only when, and if and only if, $\hat{\theta}(t)_i$ passes for the first time through the following optimal stopping barrier

$$\gamma^*(t) = \frac{1}{2\xi^2} \Psi_{\hat{\theta},\hat{\theta}}(\hat{\theta}_{it} V_{\hat{\theta}_{it}}(t_i)^2 - \delta R$$

$$(2.3)$$

where $\Psi_{\hat{\theta}\hat{\theta}}(\hat{\theta}(t)_i, t_i)$ is the second partial derivative of the value function Ψ with respect to the filtered state variable $\hat{\theta}$, given a realization of $\hat{\theta}$ at time t.

This border represents the optimal tradeoff between continuing with review of the rule (and delaying the utilization of the next-best rule) and switching instantly. If the Analyst delays utilization of a case, she receives more information, reducing the value of $V_{\theta_i}^{\Pi}(t_i)$, which under the optimal stopping policy declines quadratically with the length of the Analyst's experience.

3 Regulatory review with a queue of rules

An organization such as OIRA will face a stream of problems and is perhaps best understood as a communication and production network. The possibility of more than one rule in a queue requires two additions to the model. The first is that there must be a stream of

arrivals of proposed rules, and the second is that certain assumptions must be made about the processing (optimal stopping) of these arrivals and how the disposition shapes the arrival flow. For generating the simplest possible model to which further research can add refinements, we model the arrival and disposition of a stream of proposed rules as an $M/G/1$ system, meaning that the arrivals are based upon a memoryless Poisson arrival distribution, a generalized processing distribution (the induced distribution of approval times under the optimal stopping model), and an assumed "single server" (one ($\underline{1}$) decision maker who can process just one rule at a time). We state these assumptions as follows:

- Proposed rules arrive according to a Poisson process with rate λ ($0 < \lambda \leq \lambda^{\max} < \infty$).

- The processing distribution is the review time distribution $G^*(t_i)$ implied by Equation (2.3).

- The Analyst can review one and only one rule at a time.

- Analysis is restricted to only those rules that are eventually approved.

The first assumption implies that the expected arrival time across rules is λ^{-1}, while the second implies that the review time is a log-normal distribution with expectation $E[t_a] = (\theta_i - \delta R)^{-1}$ (see, e.g., Carpenter 2004, Proposition 3). The third assumption restricts, and the final assumption focuses on those rules for which review time is finite, excluding those cases that would give infinite expectation to the review time distribution. While a fuller portrait of the process would certainly include the possibility of OIRA rejection, which does happen on occasion, though rarely in our data, we are generating our comparative statics for those reviews that terminate in an approval.

Letting the total $\underline{w}$ait of the ith rule be W_i, we can use basic queueing identities and the Pollaczek-Khintchine formula (Ross 2000: equations (8.30) and (8.33) to describe W_i as the sum of the average $\underline{q}$ueue-induced wait confronted by a new arrival W_Q plus the expected

approval time of that rule, as follows:

$$W_i = W_Q + E\left[t_a\right] = \frac{\lambda\left(\left(\theta_i - \delta R\right)^{-1}\right)^2}{2\left(1 - \lambda\left(\theta_i - \delta R\right)^{-1}\right)} + \left(\theta_i - \delta R\right)^{-1} \qquad (3.1)$$

Given its quotients, and multiple appearance of λ, differentiation and evaluation of the derivatives is difficult. But given the assumption that $\theta > \delta R$, we can state the following

Hypothesis 1: Expected wait time is strictly increasing in R, or $\frac{dE[W_i]}{dR} > 0$.

Hypothesis 2: The effect of R upon expected wait time is increasing in the size of the agency-specific queue (or the arrival rate λ_j), or $\frac{d\frac{dE[W_i]}{dR}}{d\lambda} > 0$.

Hypothesis 2 essentially states that the size of the queue (which for any $M/G/1$ model is strictly increasing in λ) will magnify the effect of any payoff component on expected approval time.

4   Empirical Analysis of OIRA Reviews, 1981-2012

We use this model to structure the empirical investigation that follows.

Our data comprise all 42,014 OIRA regulatory reviews completed from 1981 to 2012. OIRA makes publically available data on all reviews, including the date a proposed rule was received for review and the date the review was completed, from which we calculate the duration of the review, our dependent variable of interest.[4] Every proposed regulatory action deemed "significant" by OIRA must be submitted for review.[5] OIRA generally reviews each rule twice: once as a proposed rule, after which it is published and time is

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[4]XML files containing data on all completed OIRA reviews can be found at `http://www.reginfo.gov/public/do/XMLReportList`

[5]OIRA considers significant rules that have a 100 million dollar annual effect on the economy, "create a serious inconsistency or otherwise interfere with an action taken or planned by another agency", alter entitlements or other similar programs, or raise novel legal or policy issues (EO 12,866). Although the conditions for significance are several and somewhat vague, only a small percentage of all federal regulatory actions pass through the OIRA review process. OIRA estimates about 500 to 700 regulations are determined to be significant each year. For an analysis of this decision to audit agency rulemaking, see Acs and Cameron (2013).

allotted to receive public comments, and once as a final rule, after any changes are made and before being published as law.[6] All 13 Cabinet-level departments and many independent agencies are subject to OIRA review.

Our unit of analysis is the OIRA action—the regulatory review—rather than the rule. We treat each occurrence of an OIRA review as independent, because each occurrence presents an independent opportunity for OIRA to delay a regulation. Although the same regulation is often submitted to OIRA multiple times, the regulation may be substantially changed between submissions. Further, the data show that OIRA can effectively veto a rule by delaying it indefinitely at any stage (e.g., proposed rule or final rule) and need not rely on multiple interactions with the same proposed rule to exercise its veto.[7] As mentioned in the previous section, there is good evidence to support treating OIRA approvals as irreversible actions, which lends support to treating each approval as independent. Examining the OIRA review as the unit of analysis allows for the most fine-grained analysis of decisions and delays.

In particular, we test hypotheses 1 and 2, in addition to describing general trends in the data. Testing these hypotheses requires that we operationalize R, the cost of adopting a rule, the perceived quality of a rule, and the queue. We also control for a variety of political factors.

Several models are presented with variables (in bold, below) to address the following factors:

Costs of Adopting a Rule. The costs of rule adoption could be economic or political. Economic costs clearly account for some of the costs associated with adoption. We operationalize this by including an indicator of whether a rule was deemed **economically significant** (having a price tag over $100 million). We expect economically significant rules

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[6]A graphical illustration of the typical rulemaking process can be found at `http://www.reginfo.gov/public/reginfo/Regmap/index.jsp`

[7]As an example to illustrate this argument, the longest review in our data involves an EPA proposed rule held for 2.6 years and finally withdrawn by the EPA, during the George W. Bush administration. The proposed rule appears nowhere else in the dataset, as it was neither previously examined by OIRA nor resubmitted by the EPA. Over 97 percent of rules appear only 1 to 3 times in our dataset.

to receive longer reviews.

Political costs are more complicated and could be a function of several factors. As the ideological distance between OIRA and the rule increase (or between the issuing agency and the president), rules should take longer to adopt. We therefore include measures of **agency** and **presidential** effects as well as **agency ideology**, in some models. One could hypothesize that more liberal agencies, or those that issue more complicated and costly rules on average, would receive longer reviews. Different presidents view regulation differently and have a large influence on the conduct of OIRA. A goal of President Reagan in establishing the regulatory review system managed by OIRA was to reduce the promulgation of costly rules by adhering to a strict cost benefit analysis. More liberal presidents may view regulation more favorably. Counteracting this, evidence suggests review durations have been increasing steadily over time, so we should also expect more recent presidents to preside over longer reviews. Presidents may also have particular regulatory priorities, which would increase the perceived benefits and decrease the perceived costs of certain rules. We address this with an examination of **priority legislation** in the Obama administration. Finally **divided government** should increase the costs of adopting a rule, as it might increase the incentives of Congress to participate in regulatory oversight and raise the political costs of approving a low-quality rule.

Learning about Rule Quality. The model illustrates a learning process by which rule quality is revealed to OIRA over time. This process is faster for rules that give less noisy signals about their quality. Because rules are issued by a relatively fixed set of departments and agencies, it makes sense that OIRA would rely on the department as an indicator of the quality of a proposed rule. Repeat interactions makes learning about the quality of agency rules from previous interactions possible, such that we might expect systemic differences in review duration among agencies. Learning also motivates controlling for the **stage of the rulemaking process** a review addresses. Previous interactions with similar rules (the same rule in an earlier stage) should predict shorter review times, although we expect each

stage of review to be substantively important and independent, owing to the irreversibility of approvals.

Queues. We operationalize the **agency-specific queue** as the number of incomplete reviews from the same agency at the time rule i is submitted to OIRA. Larger queues should correlate with longer reviews. Following hypothesis 2, we also interact the queue with a variety of elements of the cost of adopting a rule. In thinking about queues and the ability to learn across rules, we also model a **learning effect**, which counts the number of completed reviews for an agency during a given administration. We should expect a larger number of completed reviews to predict shorter reviews.

Controls. Additional controls include rule characteristics, such as whether **statutory or judicial deadlines** are imposed on rulemaking and relevant measures of time, **presidential term**, **year of term**, and **lame duck** status. We also address changes to the OIRA regime, which occurred most markedly with President Clinton's **EO 12,866**. We control for this using an indicator and by analyzing the subset of reviews occurring after its adoption.

4.1   Descriptive Statistics

Tables 1 and 2 display the total number of OIRA actions by presidential administration and by issuing department. Notably, over 45 percent of the OIRA actions contained in our dataset were completed during the Reagan administration. The number of OIRA actions completed annually dropped quickly after the review process was modified by President Clinton's EO 12,866 (September, 1993).[8] Looking within these periods (pre and post 1993), no time trend is apparent at this scale. The term totals for Reagan and George H.W. Bush are roughly equal, as are those for Clinton's second term, George W. Bush's presidency,

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[8]In the analysis that follows, we examine both our whole dataset and the subset following EO 12,866, with substantively similar findings.

and Obama's first term.

Stronger contrasts appear when comparing departments. All 13 Cabinet-level departments and many independent agencies are included in our sample. However, regulatory reviews are most frequent for the Department of Agriculture, Department of Health and Human Services (which includes the FDA), and the Environmental Protection Agency, which together comprise over 40 percent of the sample. Other departments issue relatively few rules, such as the Departments of State, Treasury, Defense, and (perhaps surprisingly) Energy. For this paper we sometimes aggregate into an "other" category agencies such as the General Services Agency, Office of Personnel Management, the Social Security Administration, and NASA, which do not belong to departments, but whose regulations are not exempt from OIRA review. Note that the Department of Homeland Security (DHS) is the newest cabinet department, entering our sample in 2002, (although it comprises many previously existing agencies) so it remains to be seen how productive a rule-making department it is.

Table 1: OIRA Actions by President

	1st Term	2nd Term	Total	Percent
Reagan	10,120	8,929	19,049	45.34
Bush 41	9,216	–	9,216	21.94
Clinton	3,979	2,239	6,218	14.80
Bush 43	2,639	2,485	5,124	12.20
Obama	2,407	–	2,407	5.73
Total	28,361	13,653	42,014	100.00

Figure 1 presents mean review duration by year, with presidential administrations noted. We observe a substantial increase in review duration over time. Average review durations for Presidents Clinton, George W. Bush, and Obama are higher than the mean duration, while those for Reagan and George H.W. Bush are lower, a clustering similar to the clustering in total review output discussed above. There is a notable increase in review duration throughout the Obama administration, although the average review duration across his entire first term (55.5 days) is almost identical to that of President Bush (55.0 days).

Table 2: OIRA Actions by Department

Department	Freq.	Percent
Agriculture	7,079	16.85
Other	6,168	14.68
Health & Human Services	5,137	12.23
EPA	4,765	11.34
Transportation	3,870	9.21
Commerce	2,604	6.20
Interior	2,418	5.76
Housing & Urban Development	1,770	4.21
Education	1,690	4.02
Veterans Affairs	1,460	3.48
Justice	1,417	3.37
Labor	1,173	2.79
Treasury	655	1.56
Homeland Security	581	1.38
Defense	497	1.18
Energy	489	1.16
State	241	0.57
Total	42,014	100.00

Despite the increasing trend, there is significant variation in review duration throughout. Reviews completed immediately (less than one day) exist during all administrations in the data, as do reviews lasting years (the longest being 963 days). Although executive orders mandate a 90 day limit on OIRA reviews, approximately 7.6 percent of reviews last longer than 90 days.[9] The left plot in Figure 2 shows a cluster of review durations around 90 days, but in general we observe a continuous distribution of durations with a long right tail.

We focus in this paper on the implicit veto that a long delay signifies, rather than the actual decisions made by OIRA at the end of review. OIRA ultimately accepts most rules facing review, with over 61 percent accepted without changes, and an additional 31 percent accepted with some changes. The high rate of acceptance plausibly suggests anticipatory bargaining on the part of the issuing agencies. Among those rules that are not accepted, a majority are withdrawn by the issuing agency. Only about 1 percent of reviews are

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[9]The limit can formally be extended by 30 days if agreed to by the agency submitting the rule, but it appears that the 90 day limit is even less strictly enforced.
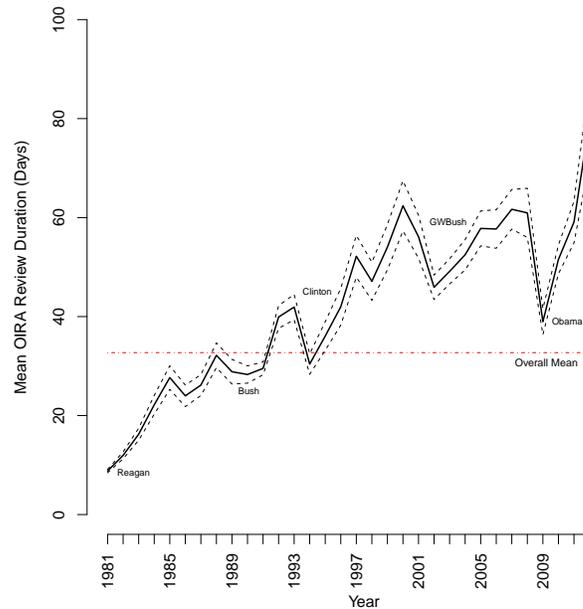
Figure 1: Mean OIRA Review Duration by Year

explicitly returned for reconsideration. Focusing on actual decisions might downplay the implicit veto power held by OIRA, although both review durations and acceptance rates display substantively similar trends: longer reviews are more likely to result in unfavorable outcomes for the issuing agency. Looking at a simple correlation coefficient, there is a 0.198 correlation between review duration and withdrawal by the issuing agency, which is statistically significant at $p < 0.001$. Again, given that the status quo is that no new rule is promulgated, long delays are often an equivalent outcome to explicit rejection.

4.2   Regression Analysis

We first pool all reviews in order to conduct the broadest possible comparisons. In Table 3, we report the results of OLS regressions of review duration upon a wide range of variables following from the factors discussed above. Model 1 includes all reviews conducted from 1981 to 2012. Model 2 includes all reviews conducted after EO 12,866 was issued in 1993. The first battery of variables concerns the issuing federal department or executive
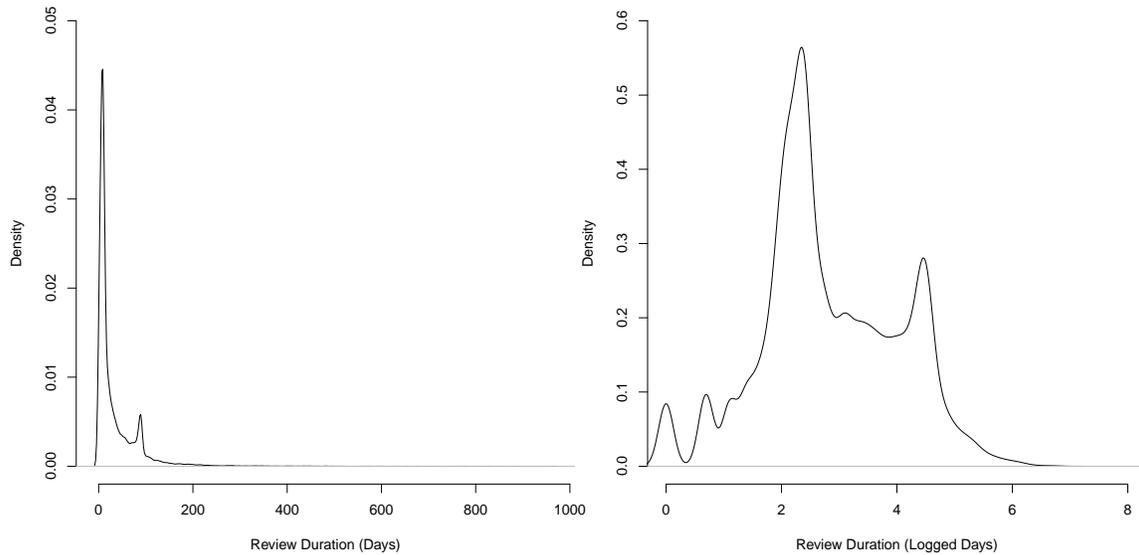
Figure 2: Density of Dependent Variables

agency (such as the EPA, which is an independent executive branch agency). Despite a large literature pointing to the controversy surrounding rules issued by the Environmental Protection Agency (EPA), it would appear, using the whole sample, that in fact rules issued from the Department of Labor experience, on average, the slowest reviews.[10] Relative to rules issued by the omitted Department (Commerce), DOL rules took roughly 28 days longer to review, and they took 7 days longer to review than those issued by the EPA. EPA rules took longer to review than Health and Human Services (HHS) rules, and rules from the Labor Department, EPA, HHS and HUD took weeks longer to review than rules from the Department of Commerce (DOC), Department of Interior (DOI), Department of State, Department of Treasury and Department of Agriculture (USDA). These inter-agency differences are all statistically significant as examined by Wald tests for linear restrictions ($p < 0.0001$ in all cases).[11] Model 2 reports similarly significant differences among agencies, although their ordering is different, with the EPA and Veterans Affairs correlating with the

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[10]This can largely be attributed to observations during the Reagan administration. In more recent administrations, EPA reviews have taken longer than those from the Department of Labor.

[11]Regressions using fixed effects for all 131 agencies, rather than overarching departments return similar results, with statistically significant differences between agencies and no substantive changes to the other coefficients described.

Table 3: OIRA Review Duration

	(1) 1981 − 2012		(2) 1993 − 2012	
	Coef.	*SE*	*Coef.*	*SE*
Department				
Defense	12.91	(2.26)	15.67	(3.17)
Energy	12.53	(2.27)	25.78	(4.35)
Interior	3.00	(1.30)	1.81	(2.75)
Justice	1.17	(1.52)	11.93	(2.84)
Labor	27.98	(1.62)	25.58	(2.78)
Transportation	7.44	(1.18)	15.59	(2.51)
Education	5.19	(1.44)	−2.14	(3.03)
HHS	11.01	(1.23)	17.07	(2.67)
HUD	16.17	(1.42)	21.34	(2.70)
State	6.21	(3.09)	13.02	(4.77)
Treasury	5.50	(2.01)	3.27	(4.67)
Agriculture	7.72	(1.21)	19.84	(2.52)
Veterans	14.64	(1.50)	26.91	(2.84)
Homeland Security	7.79	(2.13)	11.52	(3.30)
EPA	21.01	(1.25)	26.27	(2.49)
Other Agencies	10.86	(1.09)	12.50	(2.21)
President				
Bush 41	15.54	(0.68)		
Clinton	32.65	(1.57)	−7.06	(1.11)
Bush 43	42.63	(1.95)		
Obama	50.89	(2.07)	6.84	(1.28)
Controls				
Divided Government	3.17	(0.91)	5.51	(1.03)
Economically Significant	0.37	(0.92)	−7.92	(1.23)
Agency-specific Queue	0.35	(0.03)	0.95	(0.09)
Agency learning effect	−0.01	(0.00)	−0.04	(0.00)
Judicial Deadline	−31.54	(1.97)	−33.62	(2.34)
Statutory Deadline	−5.36	(0.88)	−8.41	(1.22)
EO 12,866	−4.86	(1.60)		
Constant	−4.42	(1.38)	27.53	(2.41)
Fixed effects included for				
Rulemaking Stage	Yes		Yes	
Year of Term	Yes		Yes	
Term	Yes		Yes	
Lameduck status	Yes		Yes	
Observations	42,014		12,244	
R-squared	0.14		0.12	

Note: OLS regressions estimated, with standard errors in parentheses. The unit of analysis is the OIRA review action. Dependent variable is measured in days. Model 2 omits observations before the issuance of Executive Order 12,866. Department of Commerce is the omitted department. Reagan is the omitted president in (1) and Bush 43 is the omitted president in (2).

longest reviews, followed closely by Energy and Labor, once other variables are controlled for. Regressions using the natural logarithm of review duration match monotonically the results from the non-logged dependent variable, which suggests that the inter-agency and inter-administration results are not being driven by skew in the unadjusted review-time distributions.

It would also appear that among all presidents until 2012, it was a Democratic president, President Barack Obama, whose administration presided over the slowest OIRA reviews, an additional eight days longer on average than those reviewed by his predecessor's administration and fully 18 days longer than his Democratic predecessor administration. More striking is the monotonic increase in review duration by presidential administration over time. The presidential coefficients do not support a partisan story. Indeed, it is the Reagan Administration that averaged both the most reviews and the quickest reviews. In both the logged and non-logged review time regressions and the two time periods, these inter-administration differences are all statistically significant as examined by Wald tests for linear restrictions ($p < 0.0001$ in all cases).

As expected, divided government correlates with increased review durations. Deadlines, not surprisingly, account for shorter reviews. More interesting is whether a rule was economically significant. In the full sample this relationship is never statistically significant. In the post-1993 sample, economically significant rules predict shorter reviews, all else equal, contrary to expectations. The fact that economically significant rules do not take longer in the OIRA review process may reflect the fact that they are already given more scrutiny and more staff resources. It is also possible that the issuing agencies invest more energy and resources in the BCA/RIA that accompany these rules, and hence that OIRA is faced with a less daunting review task when the rules and their concomitant BCAs arrive at the Office of Management and Budget.

Two of the more interesting variables in these models, which follow from our formal model, are the agency-specific queue and learning effect. The queue is calculated as the number of incomplete reviews originating from a specific agency at the time the rule in

question is submitted.[12] We expect that an increase in the queue operates as an increase in the workload for that division or individual in OIRA, leading to longer reviews, on average. This is what we find. A coefficient of the opposite sign is found on the agency-specific learning effect, which we operationalize as the number of already completed reviews of a specific agency during the current presidential administration at the time a rule is submitted. As this number increasing, we should expect OIRA to complete reviews faster, all else equal, owing to its increased experience with the agency. We find a positive and significant coefficient. These two variables are the only continuous variables in the model, so their small coefficients belie the large size of these relationships. Increasing the queue by one standard deviation (about 12) predicts an increase in review duration of 4.2 days. Increasing the number of completed reviews, the learning effect, by a standard deviation (about 732) predicts a decrease in review duration of 7.3 days.

Although not displayed, in order to save space, the battery of rule stage variables suggests that it is proposed rules and final rules that receive longer reviews relative to pre-rules and interim rules. In all specifications, these inter-rule differences are all statistically significant as examined by Wald tests for linear restrictions ($p < 0.0001$ in all cases), save for the difference between notices and interim final rules ($p = 0.50$).

4.3   Agency Ideology

The most striking results from the previous analysis are the agency coefficients. Substantial differences exist among agencies and departments in their expected review times. Although several factors, such as the quality of cost benefit analyses conducted by agencies or typical complexity of agency rulemaking, might explain this variation, one of the most commonly asserted is differences in agency ideology.

For descriptive and hypothesis formation purposes only, we use the Clinton and Lewis (2008) agency ideology scores as a predictor of review duration to examine this assertion. Drawing upon a mix of public administration and political science experts, Clinton and

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[12]Queues are calculated for each of the 131 agencies in the data, not the overarching categories displayed in this table.

Lewis administered a survey that sought to elicit ratings of how left- or right-leaning agencies were. Using item response theory (IRT) scaling – techniques similar to the scaling used in the analysis of roll call voting or the scoring of the GRE – the authors produced a set of scores for a variety of agencies in the federal government. While perhaps useful in some circumstances, we wish to underscore the limits of these scores for the present analysis. First, the scores are not revealed preference estimates, as the agencies in question never vote or express themselves on the same subject or issue. Second, the study was undertaken in the mid-2000s and published in 2008, hence the estimates may lack portability to earlier or later periods.[13] Finally, the estimates are subject to measurement error, and neither we nor other analysts have implemented the proper errors-in-variables technique to account for this fact.

In Table 4, we add this regressor to the mix of explanatory variables. In both the full and post EO 12,866 samples, a change in agency ideology from more liberal (negative) to more conservative (positive) predicts a decrease in expected review duration. A one standard deviation move towards conservatism correlates with a decrease in review duration of 4.8 days, all else equal, in model (1). We might expect presidents of different parties to treat agencies of different ideologies differently, so models (3) and (4) interact agency ideology with president. Doing so produces significant negative interaction coefficients for Bush 41 and Clinton but not Bush 43 or Obama. The results, although mixed, suggest that OIRA approvals are swifter for conservative agencies in all administrations but that the differences by agency ideology are more pronounced, perhaps, during conservative administrations (Bush's) than during liberal administrations (Clinton's), although the differences are quite small and not systematic if we consider Bush 43 and Obama. When considered in terms of the whole model, agency ideology scores contribute only modestly to the overall goodness of fit of our models and have little effect on the size or significance of other coefficients. Significant differences among departments remain even when ideology is controlled for.

We leave these results as is, and can say here only that they raise more questions than

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[13]Clinton and Lewis specifically guard against this in their survey design, but it is hard to assess the extent to which their respondents answered as instructed.

answers. If there were in fact an ideological pattern in OIRA rulemaking, or if OIRA rulemaking review was correlated with ideological patterns of policymaking, one would need to target analysis not at the issuing agency but at the statute that authorized the rules issued (either as substantive or interpretive rules). We are currently working on an alternative estimation strategy in which each rule is associated with one or more enabling statutes, where the ideological disposition associated with the statute is measured by using either the cutpoint of the final passage vote for the statute in question, or by the median ideology score of the majority that passed it (presumably, both for the House and the Senate, or some median between the two). This measure of the "ideology" of the enabling statute would, we believe, provide a superior test of whether there are patterns of review that correlate with the ideological or political stakes involved in the rule. Even a strong correlation at such a stage would not, however, be sufficient to demonstrate "bias," as a more proper causal inference would at minimum be required for this diagnosis. This alternative empirical strategy will have the benefit of being more properly focused, while also permitting reliance upon more reliable ideology estimates derived from roll-call votes.

4.4   Queue Interactions

Motivated by Hypothesis 2, we modify the models in Table 3 to interact agency-specific queues with department fixed effects. This allows flexibility in modeling OIRA's response to an increase in workload, allowing this response to vary by department. Recall that in Table 3, increasing the queue predicted an increase in the expected review duration. Figure 3 presents simulated first differences in expected review duration derived from increasing the queue from one standard deviation below the mean of that department to one standard deviation above the mean of that department, using a model identical to that of Table 3, column 1, with the addition of interactions between queue and department. The figure displays point estimates with 95% confidence intervals. Those first differences that are not statistically distinct from zero are colored red. On the whole, increasing the queue correlates with an increase in review duration, although the size of the increase varies by department.

Table 4: Review Duration and Agency Ideology

	(1)	(2)	(3)	(4)
Bush 41	15.74		14.92	
	(0.702)		(0.709)	
Clinton	33.40	-6.570	33.07	-7.816
	(1.604)	(1.131)	(1.609)	(1.170)
Obama	52.43	7.790	53.37	7.553
	(2.128)	(1.319)	(2.144)	(1.350)
Bush 43	43.01		44.59	
	(1.989)		(2.004)	
Agency Ideology	-5.367	-7.168	-3.423	-5.333
	(1.100)	(1.873)	(1.158)	(1.939)
Bush 41 X Agency Ideology			-6.289	
			(0.704)	
Clinton X Agency Ideology			-4.884	-4.604
			(0.778)	(1.054)
Obama X Agency Ideology			-1.372	-1.119
			(1.022)	(1.165)
Bush 43 X Agency Ideology			1.129	
			(0.824)	
Divided Government	3.411	5.894	3.285	5.828
	(0.928)	(1.048)	(0.927)	(1.047)
Economically Significant	0.346	-8.311	0.190	-8.242
	(0.941)	(1.253)	(0.942)	(1.253)
Agency-Specific Queue	0.345	0.960	0.283	0.932
	(0.0297)	(0.0950)	(0.0304)	(0.0951)
Judicial Deadline	-31.77	-33.54	-32.79	-33.78
	(1.986)	(2.345)	(1.988)	(2.344)
Statutory Deadline	-5.192	-7.815	-4.986	-7.535
	(0.894)	(1.241)	(0.893)	(1.242)
Agency Learning Effect	-0.00614	-0.0366	-0.00600	-0.0388
	(0.000535)	(0.00417)	(0.000535)	(0.00424)
EO 12866	-5.102		-6.450	
	(1.633)		(1.637)	
Constant	1.721	35.55	3.583	36.31
	(1.941)	(3.347)	(1.948)	(3.352)
Fixed effects included for				
Department	Yes	Yes	Yes	Yes
Agency	No	No	No	No
Rule Type	Yes	Yes	Yes	Yes
Year of Term	Yes	Yes	Yes	Yes
Term	Yes	Yes	Yes	Yes
Lameduck status	Yes	Yes	Yes	Yes
Observations	40,444	11,870	40,444	11,870
R-squared	0.138	0.126	0.140	0.128

Standard errors in parentheses

Reviews from the Department of Labor, for example, appear to be most sensitive to changes in the size of the queue. Given that the Department of Labor already received the longest reviews, there is some tentative support for size of the queue magnifying the effect of a payoff component on expected approval time (Hyp. 2). Most of the estimates, however, are not statistically distinct from one another. One department, Agriculture, has a negative first difference, meaning that increasing the queue for the agency correlates with a decrease in review durations. Although this result is unexpected, the overall trend comports with expectations.

First Differences: Agency Queue
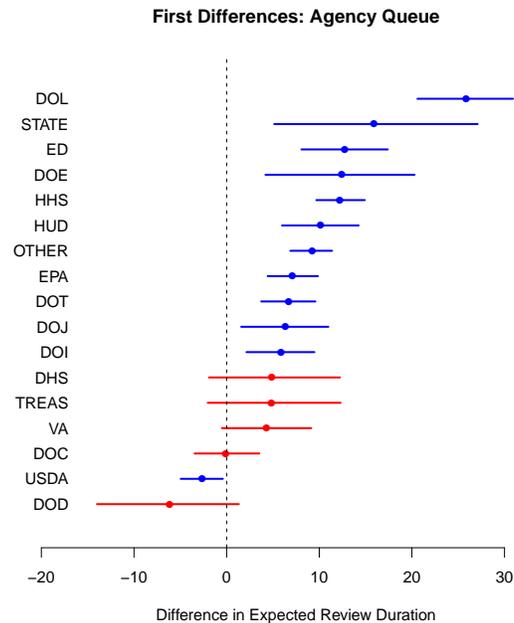
Figure 3: First Differences in Review Duration when increasing Agency-specific Queue from 1 SD below Mean to 1 SD above Mean

4.5   Political Control? Examining Obama Administration Priorities

A final section of empirical analysis examines the relationship between presidential priorities and review duration. An overarching question in the study of regulatory oversight is the question of political control. Do the systematic differences identified above reflect differences in objective rule quality and technocratic features, like workload, or do they indicate political

control of the regulatory review process, where rules are approved (or delayed) in accordance with presidential priorities?

We offer tentative evidence in support of the political control hypothesis by examining rules promulgated under presidential priority statues in the Obama administration – namely the Affordable Care Act of 2010 and the Dodd-Frank Act of 2010 – which we find receive systematically faster reviews. These two statutes are significant in that they prompted a significant amount of regulatory action in new issue areas. Both laws were complicated and lengthy. It follows that regulations issued in response to their passage would be similarly complex and, therefore, receive increased scrutiny in order to determine their quality and their place in the existing regulatory regime, if we believe OIRA serves a bureaucratic role of neutral competence.[14]

22 OIRA actions in our data relate to rules drawing statutory authority from the Dodd Frank Act. 178 relate to rules deriving authority from the Affordable Care Act. An additional 1,124 actions were taken on rules not related to either statute in period since both were signed into law. Table 5 examines the differences in review duration among Health Care, Dodd Frank, and other Obama regulations issued since March 23, 2010 by including indicators for the two laws in our standard regression framework. The results are striking. Health Care rules were reviewed in over 20 fewer days than non-health care rules, while Dodd Frank rules received expected review times over 50 days shorter than non-Dodd Frank rules.

We might be concerned that these relationships are confounded by these rules being subject to statutory or judicial deadlines or because of economic significance. All three of these factors are included in the regressions in Table 5. Table 6 displays the cross tabs among the rules and these variables.

About 50% of health care regulations are subject to statutory deadlines. However, when we subset to only Health Care regulations, statutory deadlines and economic significance do not predict significant changes in review time. When we subset to only Dodd Frank

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[14]This has been the assertion of recent OIRA administrators like Cass Sunstein.

regulations, statutory deadlines and economic significance also do not predict significant changes in review time. None of the health care reviews subject to deadlines actually concluded because a deadline was reached.

When we subset to all rules that have potential statutory deadlines, received after the Affordable Care was enacted, Health Care and Dodd Frank have negative but not significant coefficients. If we subset to reviews that do not have deadlines, where OIRA should have more discretion, health care and Dodd Frank regulations receive significantly faster reviews. There is evidence that these laws predict, independently, faster reviews, despite significant covariance. We present these results as initial evidence of political control. Rules related to President Obama's primary legislative achievements receive significantly faster than average approval by OIRA, despite the potential for complexity. In contrast, other potentially liberal policies – such as those proposed by the EPA – that are not part of the president's primary agenda, receive significantly slower enactment.

5   Conclusion

Our exploratory analysis of OIRA review duration suggests some puzzles that cry out for explanation. Why is there such a vast difference across issuing agencies and departments in the speed with which their rules are reviewed by OIRA? Why is there no seeming difference between review time for economically significant rules and others? What explains the shift in recent years whereby longer and longer reviews are being witnessed at OIRA, accentuated under the Obama Administration? Why, in other words, was there such short review time in the Reagan Administration, when OIRA was in fact reviewing more rules and reviewing them more quickly?

We find that the dominant factor shaping review duration is the agency issuing the rule reviewed. Across agencies, estimated ideology is significantly correlated with review duration, such that more "conservative" agencies receive faster expected reviews, though we are not in a position to claim that this association reflects causality. As concerns the

Table 5: Obama's Legislative Priorities

	(1)	(2)
Health Care Act	-20.39	-19.80
	(6.825)	(6.806)
Dodd Frank Act	-50.46	-36.67
	(12.76)	(15.13)
Divided Government	-0.678	0.496
	(6.369)	(6.361)
Economically Significant	-4.472	-4.766
	(4.552)	(4.518)
Agency-Specific Queue	-1.552	-2.015
	(0.440)	(0.457)
Judicial Deadline	-39.42	-38.10
	(8.054)	(7.992)
Statutory Deadline	-3.850	-2.050
	(4.593)	(4.672)
Agency Learning Effect	-0.752	-0.847
	(0.0529)	(0.0587)
Constant	-38.23	-169.0
	(11.11)	(56.54)
Fixed effects included for		
Department	Yes	No
Agency	No	Yes
Rule Type	Yes	Yes
Year of Term	Yes	Yes
Observations	1,324	1,324
R-squared	0.275	0.298

Standard errors in parentheses

recent experience of regulatory review under OIRA, we find that review time has been systematically increasing across presidential administrations, with a noticeable increase in review time under President Obama. We also find that rules issued under presidential priority statutes in the Obama Administration – namely the Affordable Care Act of 2010 and the Dodd-Frank Act of 2010 – receive systematically faster reviews. Our analysis suggests that rules issuing from certain agencies and certain statutes receive systematically faster treatment from OIRA than others.

This work represents several important first steps, both in formalizing the OIRA approval process and in exploring the rich empirical data available from the agency. The patterns of OIRA review present many puzzles that can be usefully examined in political science, policy studies, law, economics, and related fields.

Table 6: Cross Tabs: Dodd Frank and Health Care Acts

Program	Economically Significant		Statutory Deadline		Judicial Deadline	
	Yes	No	Yes	No	Yes	No
Dodd Frank	5	17	1	21	0	22
	(23%)	(77%)	(5%)	(95%)	(0)	(100%)
Health Care	95	83	118	60	0	178
	(53%)	(47%)	(66%)	(34%)	(0)	(100%)

Note: Review counts are presented with percentages in parentheses below.

Table 7: Agency Counts: Dodd Frank and Health Care Acts

Agency	Dodd Frank	Health Care
Architectural and Transportation Barriers Compliance Board	0	1
Consumer Financial Protection Bureau	1	0
Financial Stability Oversight Council	5	0
Department of Health & Human Services	0	161
Department of Housing and Urban Development	5	0
Department of Labor	1	7
Department of State	1	0
Department of the Treasury	9	2
Office of Personnel Management	0	3
Social Security Administration	0	4
Total	22	178

REFERENCES

Billingsley, P. 1999. *Convergence of Probability Measures*, Second Edition. New York: Wiley.

Boardman, A. E., D. H. Greenberg, A. R. Vining, D. L. Weimer. 1996. *Cost-Benefit Analysis: Concepts and Practice.* Upper Saddle River, New Jersey: Prentice Hall.

Calvert, R. 1987. "Reputation and Legislative Leadership." *Public Choice* 55: 81-119.

Carpenter, D. P. 2004. "Protection without Capture: Dynamic rule Approval by a Politically Responsive, Learning Analyst." *American Political Science Review* 98(4): 613-631.

Carpenter, D. P., and J. Grimmer. 2009. "The Downside of Deadlines," Robert Wood Johnson Scholars in Health Policy Working Paper #35, February 2009.

Carpenter, D. P. and M. M. Ting. 2007. "Analysty Errors with Endogenous Agendas," *American Journal of Political Science* 51 (4) (October) 835-853.

Chernoff, H. 1968. Optimal Stochastic Control. *Sankhya The Indian Journal of Statistics* Series A 30 (3): 221-252.

Dixit, A., and R. Pindyck. 1994. *Investment Under Uncertainty.* Princeton: Princeton University Press.

Evans, M., N. Hastings, and B. Peacock. 1993. *Statistical Distributions*, Second Edition. New York: Wiley.

Feller, W. 1971. *An Introduction to Probability Theory and Its Applications*, Volume II. New York: Wiley.

Jackson, H. E., and E. L. Simons, Jr. 1999. *Regulation of Financial Institutions* St. Paul: Thomson-West.

Protter, P. E. 2005. *Stochastic Integration and Differential Equations.* New York: Springer.

Shiryaev, A. N. 1978. *Optimal Stopping Rules.* New York: Springer-Verlag.

Simon, H. A. 1968. *Administrative Behavior.* New York: Free Press.

Ting, M. M. 2003. "A Strategic Theory of Bureaucratic Redundancy." *American Journal of Political Science* 47(2): 274-292.