

Evaluating Central Regulatory Institutions with an Application to the U.S. Office of Information and Regulatory Affairs

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Abstract

Alternative governmental models and evaluation designs are used to analyze central regulatory institutions. Such institutions are increasingly used world wide to coordinate or advise decision making on regulatory actions that extend across multiple agencies. Bureaucratic, economic, and political framings are used to inform data collection and analysis. These framings and designs are illustrated using analyses of the process and outcome of regulatory review at the U.S. Office of Information and Regulatory Affairs. Several data sets are analyzed, including a quantile regression of data from Morrall (2003).

Key words: central oversight, evaluation, OIRA, regulation

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Central regulatory oversight organizations are an institutional response to the complexity and multiple interests involved in regulations emanating from numerous governmental agencies. While some analytical effort has been focused on analyzing the outcome of regulations, relatively little attention has been paid to evaluating the coordinating, advising, or oversight institution such as the central government unit responsible for promoting regulatory quality. Such units may be independent or a part of the executive or legislative bodies. Examples include the Dutch Advisory Board on Administrative Burdens (ACTAL), the Better Regulation Executive (BRE) in the United Kingdom, and the Office of Information and Regulatory Affairs (OIRA) in the United States.

As regulatory development increasingly involves multiple professions and complex stakeholders, some governments are interested in how a central regulatory institution can be used to improve political and analytic consistency. In this paper some institutional purposes of these institutions are first discussed along with three different frameworks for the evaluation of these institutions. Implementation of the frameworks is illustrated with procedural and quasi-experimental analyses of the U.S. OIRA.

I. Institutional Purposes and Frameworks for Organizational Evaluation

Central regulatory institutions may have clearly stated as well as implicit purposes. Among such purposes can be achieving the agenda of the Government in power and improving the “quality” of regulation along dimensions such as efficacy, cost-effectiveness, distributional impact, transparency, timeliness, ease of administration, participation, scientific soundness, and so on. Each country and each oversight institution likely involves a different combination of purposes, powers and impacts on regulation (Gilardi, 2005).

Numerous dimensions on which to evaluate central regulatory institutions exist or could be conceived. The Organization for Economic Cooperation and Development (2003) identified the following:

- Providing advice and support throughout the administration in regulatory issues
- Reviewing agency proposals during the policy development process
- Advocacy of regulatory reform
- Performing a cost-benefit analyses of the operations of the agency.

What alternative approaches exist for evaluating such institutions? Consider three classic frameworks for an organization’s decision making, those of: 1) bureaucratic process, 2) rational economic actors, and 3) political. Each framework models the product of a governmental organization to result from different activities and different information. The models are not mutually exclusive and variations exist in each broad category although core elements are summarized below.

Bureaucratic processes-- Views the output of a governmental organization as the result of standard bureaucratic processes based on statute or internal procedures. The organization may seek to meet procedural goals related to transparency, record keeping, public comment, and so on.

Rational economic actor-- Views the output of a governmental organization as the result of decisions to identify and select actions that maximize economic values. The organization may seek to analyze, modify, or support regulatory choices consistent with economic criteria such as cost-effectiveness or net benefits.

Political-- Views the output of a governmental organization as the push and pull of conflicting internal and external political forces based on the actions, information, and power of political actors. Most obviously, regulatory institutions would be seen as responding to the political agenda of officials in an internal hierarchy, but also to the agenda of various sources of external political power, such as financial supporters or groups with large voting power.

Analytical Framework and Data Challenges

Whether the bureaucratic process, economically rational actor, or political framework is used, common issues exist regarding the basis of comparison. Each of the frameworks suggests

different variables for quantitative or qualitative evaluation but the analysis techniques do not depend on the framework. For instance, multivariate regressions could be used to evaluate an organization from the perspective of any of the three frameworks. Qualitative approaches could also be used in any of these frameworks, and may be particularly applicable in assessing the organization's performance in the political arena. Some types of evaluation that could be conducted are summarized below.

Defining Y as the outcome of interest (ignoring signs) and \mathbf{X} as a set of explanatory variables, some common metrics for comparison are:

1. Meeting exogenous criteria: $Y \leq Y^*$ where Y^* is exogenously set by statute, bureaucratic procedure, or a professional standard. Examples include whether specific activities are carried out, such as recording meetings with interested parties, developing a strategic plan, or whether a value, such as a discount rate, is used correctly in an analysis.

Individual criteria can be combined into scorecards that may represent formal multi-attribute utility measurements or a more informal weight of outcomes.

2. A comparison of outcomes before and after creation of the regulatory institution or some other break such as a change in administration. This analysis looks for a break point due to the intervention such as: $\Delta Y \neq 0$; or $\Delta Y | \mathbf{X} \neq 0$. Examples include examining the cost-effectiveness of regulations before and after the creation of a central review group, or a change in policy due to changes in the political administration. While typical regression analysis tests for the impact of conditioning factors on the mean value, quantile regression analysis can be used to test for impacts on various components of the entire distribution. Note also that multiple regression approaches have the potential to control

or test for integrated aspects of several of the models, such as the rational actor and the political economy model.

3. Accurate predictions: determining whether ex-ante (prospective) estimates are consistent with the ex-post (retrospective) outcome: A typical test is whether the statistically expected value equals the actual value: $EV(Y_{\text{forecast}}) = Y_{\text{actual}}$. This is a sub-set of the first item where the treatment over time is the actual behavior of, for instance, the economy or the implementing agency.
4. Consistency of treatment or outcome across groups, A or B, perhaps including conditioning factors: $(Y_A | \mathbf{X}) = (Y_B | \mathbf{X})$. Examples include similar treatment for different agencies (such as environmental or non-environmental agencies), business groups, or other parts of the public. The converse test is to find inconsistency across two groups that are not expected to be treated equally; perhaps such as between categories defined as major or minor regulations.

These types of comparisons can often be made using descriptive statistics, regression analysis, or other statistical approaches. Qualitative data can sometimes be quantified in the form of binary outcomes, ordered outcomes, or discrete outcomes. While the data could potentially be created through a randomized study, much of the data for regulatory institutions are created as a result of the non-random actions of the agency. Consequently “quasi-experimental” approaches are more likely to be used. However, in the evaluation of compliance or specific programs, there may be opportunities for a randomized experimental approach.

Regulatory decisions involve bureaucratic budgets, private incomes, and political power.

Reliable data, or even the availability of data, are not guaranteed in such situations. Incentives to avoid recording data involve the possible interest of a government to “speak with one voice” or to avoid a written record, objectives may conflict, there can be interests in obscuring the political trade-offs that occur, and some data can be relatively non-standard such as tracking text changes in documents or the nature of meetings that occur.

Importantly, regulatory processes have multiple players such that the simultaneous activity of the parties may make identification of individual impacts difficult. For instance, an implementing agency may interact with the central regulatory authority in many ways so that it can be difficult to separate the product of the originating agency and the review agency. In such circumstances, only the combined final product may be observable.

II. A case study of central regulatory review: The U.S. Office of Information and Regulatory Affairs

In the United States, the primary central regulatory review office is the Office of Information and Regulatory Affairs (OIRA). The agency has been viewed as a leader in the development and use of Regulatory Impact Assessments since their inception, in one form or another, in the mid 1970s. Institutionally, OIRA resides within the Office of Management and Budget in the executive office of the U.S. President. There is a continuity of operation through the professional staff that continues regardless of political administration. The Legislative and

Judicial branches also have a role in regulatory oversight, either in an ultimate stage of review or after final publication although the focus here will remain on OIRA.

The official objectives for OIRA review of regulations are set out by an Executive Order (currently 12866, and sometimes modified in different administrations) which states that oversight is necessary to ensure that rules, the actionable item, are consistent with: 1) the President's priorities, 2) applicable law, and 3) principles laid out in the Executive Order that involve the presentation of economic performance and distributional information. The applicable laws are typically of two types: 1) authorizing statutes that provide the authority to agencies to regulate (such as the Clean Air Act or the Occupational Safety and Health Act), and 2) procedural rulemaking statutes or guidance such as the Administrative Procedures Act and the Regulatory Flexibility Act and Executive Orders). OIRA has also issued guidance on the economic performance information it expects, typically in the form of a benefit-cost analysis or a cost-effectiveness analysis.

Evaluating OIRA in light of its bureaucratic process is illustrated below primarily using the results of a recent GAO (2003) study of the impact of OIRA review on regulations. The rational actor framework is then assessed using a statistical approach and a sample of historical data related to the outcome of regulations that reviewed by OIRA. Both approaches also provide information from a political perspective.

Bureaucratic and Political Actor Models

There is increased transparency of OIRA activities as more material regarding agency actions is available to the public via the internet¹. GAO (2003) reviewed whether there were substantial changes in the OIRA regulatory review process in recent years, and whether a set of recent rules were affected by OIRA's review². In effect, both these reviews were procedural with no conclusions drawn as to whether, for instance, regulatory changes moved regulations closer to a rational actor outcome or to a politically influenced outcome.

In their review of process, GAO implicitly used both the "exogenous criteria" and the "before and after a change in administration" approach. For instance, there is a 90 day time period for the reviews based on Executive Order, with the possibility of an extension which represents criteria against which the process may be evaluated. GAO determined that there was a substantial decrease in the number of reviews lasting longer than 90 days, dropping from 149 reviews over 90 days in the year 2001 to 9 in 2002. At the same time, the change was attributed to a change in the Administration, providing a "before and after" causal explanation. GAO also noted a number of procedural changes more directly tied to changes in Administration such as the initiation of a new policy, "prompt letters" that encourage agencies to consider an action in some areas. Changes involving a degree of emphasis may be more difficult to assess qualitatively, such as the conception of the review office as "gatekeeper" or as "collaborator" with the federal agencies.

¹ See <http://www.whitehouse.gov/omb/inforeg/regpol.html> as of July 11, 2006.

Evidence of effectiveness may also be described in a procedural manner that does not indicate whether economic or political objectives are being achieved. For instance, GAO reviewed in detail 85 out of 642 regulations submitted for review in U.S. fiscal year 2002. The 85 regulations were chosen to be likely to have been influenced by OIRA (they were coded as returned to the agency, withdrawn, or approved as consistent with changes suggested by OIRA). Information on the 85 rules was obtained from case files (dockets) maintained at the originating agency or at OIRA. Procedurally, agencies are required to publicly document substantive changes made between the draft submitted to OIRA and the resulting public version of the regulation although implementation of this requirement is less than complete. Coding procedures were developed to identify various kinds of interventions made at OIRA's request. GAO concluded that OIRA significantly affected 25 of the 85 rules and that costs or benefits were affected in almost all the 25 affected rules. Further, they concluded that outside parties, an element of the political actor model, contacted OIRA regarding 11 of the 25 rules and that in 7 of the 11 cases, OIRA's suggestions were similar to those made by outside parties. No conclusions were drawn about whether the cost and benefit changes or the suggestions consistent with outside party suggestions moved the rules closer to an economically rational actor, toward specific political ends, or other purposes. As such, this type of analysis is a detailed procedural review that describes how a document changes before and after OIRA review.

The impact of OIRA meetings and subsequent rule changes has also been investigated for the 1993 to 2000 period by Croley (2003). One analysis by Croley focused on whether meetings with interest groups, categorized as narrow (industry), broad-based (environmental, consumer,

² A primary author of the GAO report summarized the findings in Copeland (2006).

public interest), pluralistic (both narrow and broad), inter-governmental, or other groups significantly affected whether a rule was changed or approved without change in the OIRA review. Croley found that “the types of interests present at an OIRA meeting are not associated with greater or lesser likelihood that OIRA will require a change in the rule” (Croley, 2003). More recent work by Balla, Deets, and Maltzman (2006) for the period 2002 to 2004 used more advanced statistical techniques but resulted in substantially similar findings. Balla et al. concluded that external meetings as part of regulatory review extended the process but that there was no difference caused by different types of organizations. In terms of evaluation, it appears that different interest groups are treated equally. In contrast and holding other factors constant, Balla et al. found that rules from three agencies: the EPA, The Department of Health and Human Services, and the Department of Homeland Security; appear “more likely to experience changes prior to approval” and hence to have been treated differently from other agencies. The authors hypothesize that these agency differences may be due more to the non-standard nature of some rulemakings than due to external influences. A cautionary note to these conclusions was obtained from interviews by Bressman and Vandenberg (2006) who found a somewhat larger influence through the White House of business and trade associations compared to environmental groups on EPA regulations.

Economically Rational and Political Actor Model

The economically rational and political actor approaches in this section stem from a different literature in which statistical analysis of similar decisions is used to identify correlates of bureaucratic or political action (Stickers, 2004; Congleton, 1996; Magat, et al., 1986). These

models are frequently based on a “before and after” or “conditional” analysis as described in section I. The issue is what characteristics of the rule, perhaps including the existence of a central oversight group, are associated with observable regulatory outcomes. A statistical approach to the impact of Executive Office review of regulation seems to have surfaced in preliminary results mentioned by Farrow and Toman (1999) and in an initial analysis by Hahn (1999). Those results indicated that the existence of OIRA did not significantly affect the cost effectiveness of final regulations. This section extends those results with additional evidence regarding rules that are rejected, changes from proposed to final rules and the robustness of the prior findings that OIRA has not had an effect on the cost-effectiveness of regulation. In some of the cases, such as the changes between the proposed and final rule, OIRA is only one of several influences on any potential change.

One key question is the choice of the dependent variable, Y, to assess performance. Several alternatives are presented. The first model hypothesizes that OIRA review alters the probability of rejection of a rule. A rule is deemed “rejected” if it is proposed but is withdrawn or never implemented by the agency³. Such rejection might be considered a success for regulatory reformers if cost effectiveness data were important in their rejection and accurately measured. This hypothesis refines the simple visual clues provided to a reader when final, proposed, and rejected rules have been lumped together in one table, as has been the standard practice (Morrall, 1986, 2003).

³ The case of rejection by the courts, as with *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991), takes place after Executive Office Review.

The analysis uses an ad-hoc specification of the economically rational and political elements that may have influenced rejection. Briefly, define R as whether a rule is rejected or not. Define X as a set of variables (described in more detail below) including: the estimated cost effectiveness of the rule, various political Administrations, the type of regulation, the year of the regulation, and the budgets of groups of trade associations likely to oppose the rule. A Probit analysis is then used to evaluate the rejection hypothesis of the form:

$$R=1 \text{ (rejected) if } Y^* \geq f(\beta X) + e$$

where Y^* is an unobservable index of preference, e is a standard error term and β are parameters. The zero outcome occurs if the rule is not rejected.

The second hypothesis is whether any Administration or the presence of OIRA reduced the cost-per-life-saved compared to what it would otherwise have been. This is the extension of the preliminary results in Farrow and Toman, and in Hahn. The structure of that model, where only data for final rules are included, is:

$$C=f(\beta X)+e \text{ where } e \text{ is a standard error term, } \beta \text{ are parameters}$$

If an Administration or OIRA had an effect in reducing the cost-per-life-saved, then we would expect to see a negative relationship between those variables and cost-per-life-saved.

Finally, we can ask if the cost-per-life-saved changed between the proposed and final rule ($C_p - C_f$) as a function of the Administration or presence of OIRA.

Data

The data used to illustrate this type of analysis have been published in several forms, all with Morrall as a participant (Morrall 1986; OMB 1992; Viscusi 1996; Lutter and Morrall 1994, Morrall, 2003). The initial data were the subject of an intensive critique by Heinzerling (1995) and a response by Morrall (2003). Given the interest in that debate and that little new information has been developed that is consistent with these data, the basic Morrall data set is analyzed first with data up to 1992 followed by a shorter analysis of the data reported in Morrall (2003).

The starting data set for this study is a composite of four presentations of the data (comprising 73 regulations from 1967 to 1991)⁴. In the absence of debate it may have been appropriate to use the data as published. However, Heinzerling's critique raises five questions for users (and interpreters) of the data. Those questions are: 1) overinclusion due to rules rejected, 2) overinclusion due to rules that do not exist, 3) underinclusion due excluded rules and the failure to regulate, 4) discounting, and 5) estimating risks. Her careful review of various regulations led to some modification of the data for use in this study as discussed in Farrow (2000) but is not elaborated upon here. Subsequently, Morrall (2003) has provided a reply to some of Heinzerlings concerns although the debate continues (Parker, 2004). As a result of the above

⁴ The four presentations are: Morrall (1986); OMB (1992); Viscusi (1996); and Lutter and Morrall (1994). Related data sets exist, such as those by: Tengs, et al. (1996) which, as published, do not contain the additional information necessary for this analysis; Hahn (1999) who cites results from extending the Morrall data (discussed in more detail later); and the Office of Management and Budget (1997-1999) who have changed their reporting methods so that the data are not readily comparable to those of Morrall. As the Heinzerling critique is aimed at the Morrall data, and Hahn reports little statistical difference between his data and Morrall's, the analysis is based on the Morrall data while anticipating that OMB or other researchers can and should carry out extensions of the analysis.

review, the analysis carried out in the following section recodes the Morrall outcome for 9 observations and deletes 4 of the potential 73 observations based on Heinzerling's critique. Values are adjusted to 1992 dollars⁵.

Results of economically rational and political actor analysis: Original data

Rejection Hypothesis

Using only data on final and rejected regulations (56 cases), the first observation is that the presence of OIRA is perfectly correlated with rules being rejected (or withdrawn), as all rejected rules in the sample occurred after 1981. While perhaps an artifact of the sample in which about 23 percent of the rules are pre-1981, the finding is consistent with regulatory rejection as an economically rational outcome of a central regulatory review institution as the rejected rules were among those deemed likely to be inefficient.

However, it is also meaningful to ask if higher cost-per-life saved or other factors affect the probability of rejection, a question of relative economic performance. Define the cost per life saved of the regulation as C; "Reagan" and "Bush I" as variables indicating the respective Administration; "EPA" as an agency identifier; "Year" as the year of promulgation; and "Budget" as the budgets of relevant trade associations that were likely to oppose the rule. The use of "EPA" as a regressor may be interpreted as either a test of political influence, or of treating groups equally, the third evaluation structure mentioned in section I. The results for a

⁵ Heinzerling identified some inconsistencies with the inflation adjustments made by the Office of Management and Budget in its 1992 version of the Morrall table. Where possible I have avoided using the 1992 version of the table and based the data on the other sources.

Probit analysis are presented in Table 1. The dependent variable records whether the rule was final (0) or rejected (1).

In a minimalist approach, columns 2 and 3 report the results of trying to predict rejection by the cost-per-life-saved, either in its level or its logarithm. The statistical significance of the logarithm of cost-per-life-saved in column 3 indicates that higher cost-per-life saved does increase the probability of rejection in contrast to the level of cost-per-life-saved in column 2. However, no rule actually rejected is correctly predicted by the equation (using the threshold for rejection as a predicted probability greater than .5). Also, the impact of a higher cost-per-life-saved on the probability of rejection is non-linear. When evaluated at the mean of the sample (cost-per-life-saved of 20 million dollars), an increase in cost-per-life-saved up to 54 million dollars increases the probability of rejection by about 2.4 percent⁶. Thus, while (the logarithm of) cost-per-life-saved is a statistically significant determinant of rejection, it may not be policy significant as cost-per-life-saved must increase by very large amounts in order to change the probability of rejection by a few percent.

[Insert Table 1 about here]

An evaluator may ask if variables other than cost affect the probability of rejection. Columns 4 and 5 present results with the interaction of EPA and health (as opposed to safety) based rules, and the budget of likely trade-groups opposing the regulation⁷. The first variable is suggested by the work of Hahn (1999), the second by Magat, et al. (1986). Adding these terms increases the prediction capability for the equation using the level of cost (column 4) and decreases the

⁶ The “marginal impact” for a Probit model is $\Phi(\mathbf{XB})\mathbf{B}_I$ where Φ is the normal density function.

⁷ The link between the rule and the budget data is subjective and based on the author’s perception of involved parties, and budget estimates from the Yellow Book of Associations.

significance of the logarithm of cost. The best equation for predicting rejection is column 4 that includes the interaction of EPA and health-related rules, combined with rules opposed by well-funded trade associations. As with cost, however, changes in budgets of trade associations must be very large to change the probability of rejection by a few percent.

Thus results regarding rejection are mixed. The rejected rules appear to be economically inefficient and occurred during the existence of central regulatory oversight. However, the particular rules rejected are better predicted by whether or not they were EPA health rules, combined with the budgetary resources to oppose that agency instead of being predicted by continuously decreasing economic performance. This suggests that the political model is an element of the statistical story.

Differences between proposed and final regulations

An evaluator may consider the question of whether OIRA, as a case of a central oversight organization, affects the estimated economic performance of regulations from the time of its public proposal to its finalization, noting that OIRA also reviews regulations prior to their first public appearance. In the data set there are 8 matches of proposed and final regulations during OIRA's tenure. In six cases there is no change in prospective economic performance. In only two cases do the cost-per-life saved estimates change between the proposed and the final rule. In fact, the-cost-per-life saved increases between the proposed and the final rule for these two cases. While there are too few observations for a statistical analysis, the changes that exist are in the wrong direction for economic efficiency. The suggested effect of OIRA (and all other potential impacts including public comment between the proposed and final stage) is either no impact (6 cases) or to increase (2 cases) the estimated cost-per-life-saved between the proposed

and final rule. This finding suggests that if OIRA has an impact, it is likely in the development stage or the initial Executive Office review prior to the release of the proposed rule.

Cost effectiveness

Finally, earlier results of the lack of impact of OIRA on the cost effectiveness of regulations are confirmed and extended in Table 2 where the level or the logarithm of the cost-per-life-saved is the dependent variable.

[Inset Table 2 about here]

The full models, which now include an indicator variable for the existence of OIRA, the impact of different administrations, type of regulation, and trade association budgets on either cost-per-life-saved or the logarithm of cost-per-life-saved are shown in columns 2 and 3. No measure of the effectiveness of OIRA, either separately by Administration or combined, is statistically significant. If OIRA were having a statistical effect anytime prior to the public release of the final rule, one expects a significantly negative coefficient. When the level of cost-per-life-saved is the dependent variable (column 2), only the budgets of the trade-associations are statistically significant and seem to increase the cost-per-life-saved by a large amount, possibly through the budget's association with the industries that are large and the subject of health regulation and a possible indication of joint endogeneity. When the logarithm of cost-per-life-saved is used as the dependent variable (column 3), health-focused regulations become the sole statistically significant determinant of cost per life-saved. Overall, the explanatory power of each regression is relatively low as measured by R-squared.

The occasional significance of the budgets of trade associations suggests more complex political economic factors at work. Budgets were seen as significant predictors of the probability of

rejection, and here they help predict high cost-per-life saved regulations. This provides a hint, perhaps unsurprising, of the simultaneous determination of trade-association budget and high cost regulation when looking at the two sets of results⁸.

Updated Data and Minor Regulations

OIRA has provided annual accounting information on the costs and benefits of regulation for several years and these data were summarized for their trend impact in Graham, Noe, and Branch (2006). Graham, et al. report that the aggregate benefit-cost ratio has changed with Administrations including significant recent improvement in the G.W. Bush Administration while noting the difficulties with such aggregate measures. Figure 1 from OMB (2005) was cited as the basis for their conclusions. However, these data are not constructed in a way that is compatible with the Morall data that focuses on regulations that are primarily human risk based and expressed in a cost-effectiveness measure⁹.

[Insert Figure 1 about here]

The updated information in Morrall (2003) expands the available data for final regulations to the year 2001. Morrall notes that his more recent data do not include adjustments to agency estimates and so may not be entirely compatible with previous estimates. However, a Chow test

⁸ There is only moderate correlation between Budgets and the two cost variables. The highest correlation is .27.

⁹ Issues about the completeness of benefit-cost reports remain. A recent example is the proposed rule (Federal Register, 2006) on sprinklers in long term care facilities in which

for pooling data from the pre-1992 and the post 1992 data in a basic regression failed to reject the hypothesis of equivalency of coefficients across the two periods, indicating the data could be combined. A regression of the logarithm of cost on administration variables and an indicator for EPA regulations continued to show the insignificance of any one or all Administrations on the mean value, and that EPA regulations have a statistically higher cost consistent with the earlier results.

Figure 2 plots the new data on cost-effectiveness over time in which it is evident that there is not simple time trend. Recent advances in econometrics allow the investigation of the impact of conditioning factors on the distribution of the dependent variable (other than the conditional mean) through the use of quantile regression (Wooldridge, 2002; SAS, 2006). For instance, even though the mean may not significantly shift, it is possible that the upper portion of the cost of regulations expanded or contracted by OIRA review or Administrations. Figure 3 plots the regression results for possible shifts in the identified quantile of the distribution where the quantiles are to be read as including the data from the identified percentage in the cost distribution up to the highest values reported. The statistical tests are consistent with the visual sense from Figure 2; there was a significant upward shift in cost in the Bush I Administration, while other Administrations (with enough data for estimation) do not indicate a significant shift. The statistical story thus seems to be substantially more complex than a simple shift due to the presence of absence of OIRA.

[Insert Figure 3 about here]

expected lives and life years saved are reported along with costs, but the agency does not

In a related analysis but using a new data set of 212 transportation fuel regulations, Stickers (2004) evaluated changes made during the rulemaking process for regulations that were both reviewed by OIRA and some that were more minor and were not reviewed. This comparison provides a different kind of control on the impact of OIRA. Stickers using an ordered logit approach to evaluate changes in stringency of regulations and found that a higher benefit-cost ratio increased regulatory stringency while uncertainty in the benefits decreases stringency. However, these impacts were separate from a direct impact of OIRA review which was an insignificant predictor of stringency.

III. Conclusions

Reviewing the actions of a central regulatory institution poses analytical and data challenges. Several conceptual frameworks and evaluation approaches were surveyed and illustrated with evidence related to the U.S. Office of Information and Regulatory Affairs. All three frameworks, procedural, economically efficient, and political provide some insight into OIRA. Beyond illustrating several ways of evaluating a central regulatory institution, a variety of information was presented on the evaluation of the U.S. OIRA. Although it is difficult to integrate the several types of analysis and to separate out the impact of OIRA from confounding influences, in the author's view the evidence is weak that OIRA review itself has a systematic effect that significantly improves the economic performance of regulations. The relatively weak economic

monetize the value, or a distribution of the value, of the benefits.

performance record seems consistent with the procedural descriptions of the process in which numerous influences exist in an evolving context.

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Table 1: Probability of Rejection

Column 1 Variable	Column 2:	Column 3	Column 4	Column 5
Constant	-1.13* (-5.13)	-1.72* (-4.71)	-2.7* (-3.76)	-2.70* (-3.65)
Cost-per-life- saved	-.21e-05 (-.17)	X	-.21e-05 (-.15)	X
Log. of cost-per- life-saved	X	.139* (2.36)	X	.072 (.98)
EPA *Health	X	X	1.52* (2.59)	1.24* (2.02)
Budget	X	X	.62e-02** (1.95)	.02 (1.06)
Log. Likelihood	-20.9	-18.2	-15.5	-15.6
Number correctly predicted of 7	0	0	3	0

coeff/std.err in parentheses, * if significant at the 5% level, ** if significant at the 10% level.

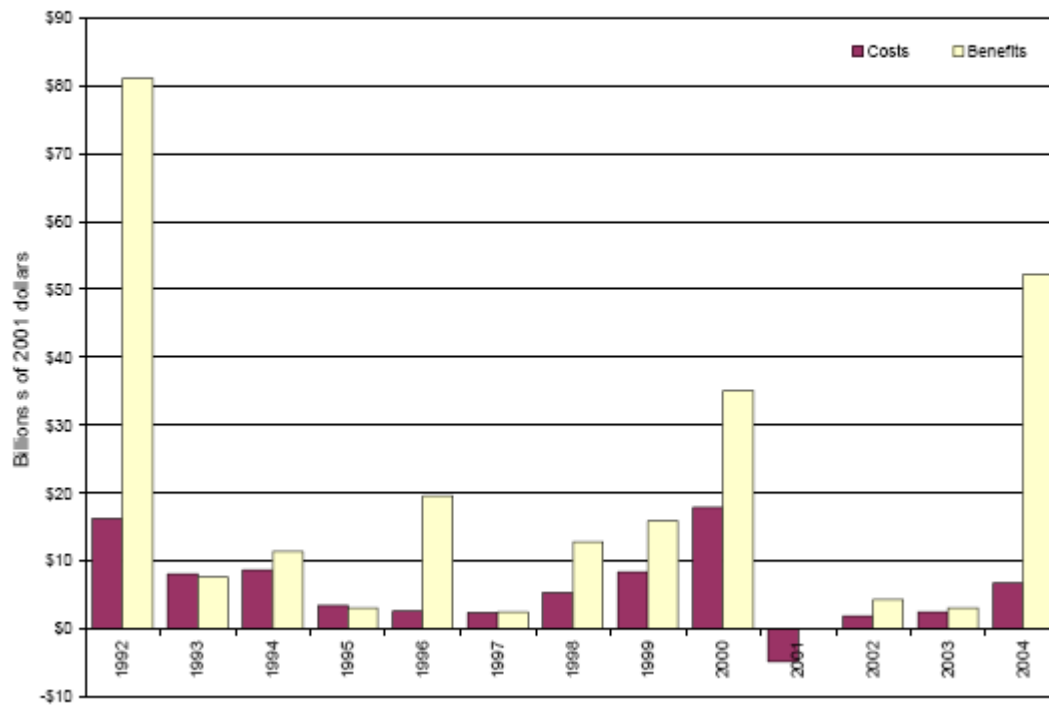
Table 2: Cost-per-life-saved for Final Rules

Column 1 Variable	Column 2 Level	Column 3 Log	Column 4 Level	Column 5 Log
Constant	71,369 (.03)	-6.00 (-.84)	-1,201,303 (-.38)	-12.23 (-1.15)
Year	-7,565 (-.28)	.07 (.80)	9,524 (.22)	.15 (1.04)
Health	-204,118 (-.54)	4.01* (3.22)	-277,953 (-.77)	3.38* (2.78)
EPA*Health	514,584 (1.20)	.05 (.04)	602,432 (1.53)	.80 (.60)
Reagan	63,292 (.19)	-.71 (-.64)	X	X
Bush I	264,609 (.58)	1.05 (.70)	X	X
OIRA	X	X	-131,831 (-.22)	-.96 (-.47)
Budgets	22,730** (1.78)	.01 (.32)	24,490* (2.03)	.03 (.77)
R Squared	.14	.45	.14	.43

T statistics in parentheses; * significant at 5% level; ** significant at 10% level

Figure 1: Aggregate Reported Benefits and Costs

Figure 2-2: Costs and Benefits of Major Rules (1992-2004)



Source: OMB (2005)

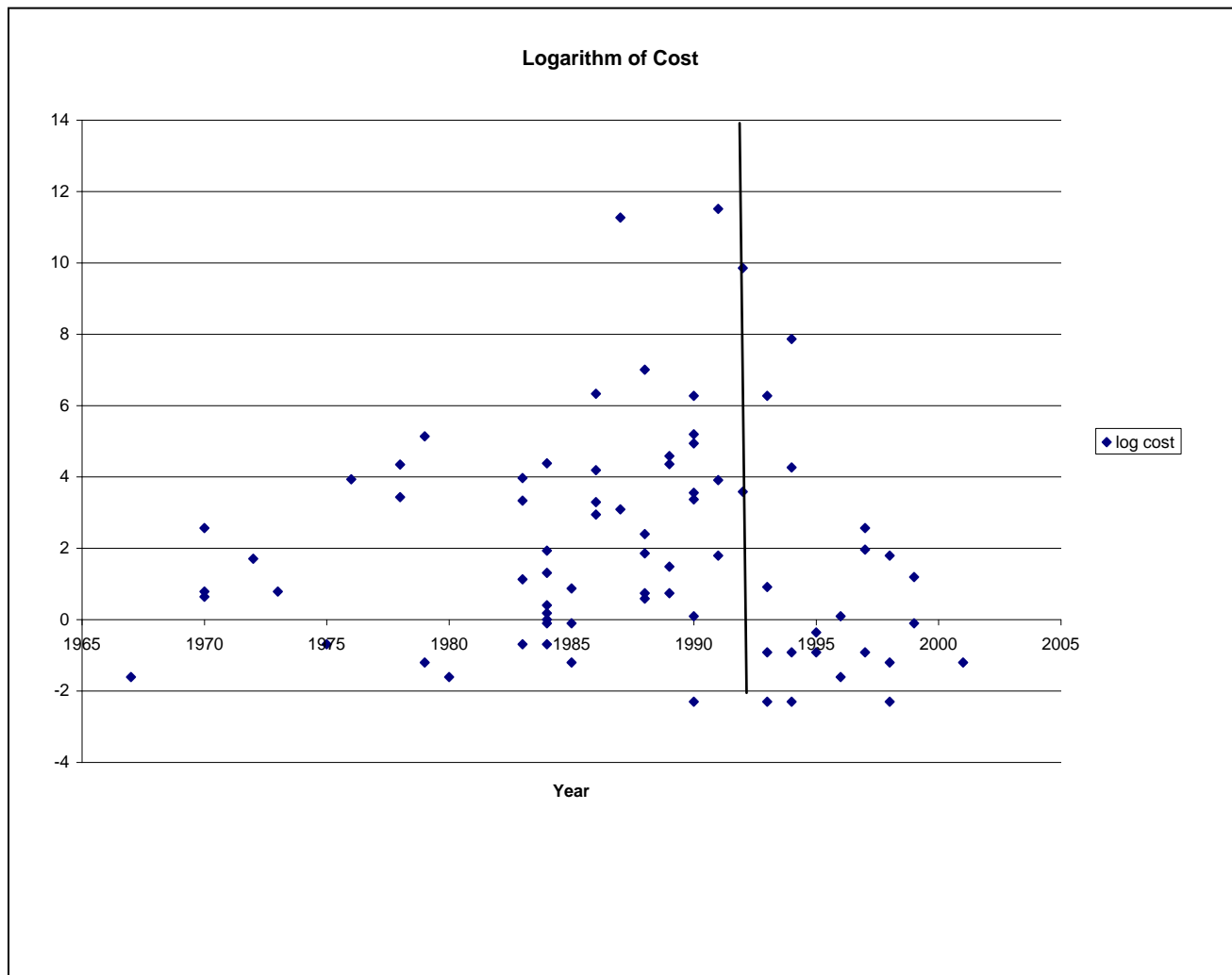
Figure 2: Logarithm of cost per life saved over time, Morrall (2003) data

Figure 3: Results of Quantile Estimation

