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# Continuity, change, and priorities: The quality and use of regulatory analysis across US administrations

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**Abstract**
This paper compares the quality and use of regulatory analysis accompanying economically significant regulations proposed by US executive branch agencies in 2008, 2009, and 2010. We find that the quality of regulatory analysis is generally low, but varies widely. Budget regulations, which define how the federal government will spend money or collect revenues, have much lower-quality analysis than other regulations. The Bush administration's "midnight" regulations finalized between Election Day and Inauguration Day, along with other regulations left for the Obama administration to finalize, tended to have lower-quality analysis. Most differences between the Bush and Obama administrations depend on agencies' policy preferences. More conservative agencies tended to produce better analysis in the Obama administration, and more liberal agencies tended to do so in the Bush administration. This suggests that agencies more central to an administration's policy priorities do not have to produce as good an analysis to get their regulations promulgated.

**Keywords:** benefit–cost analysis, cost–benefit, regulation, regulatory impact analysis, regulatory review.

## 1. Introduction

For nearly four decades, US presidents have required executive branch agencies to conduct regulatory impact analysis (RIA) when they issue major regulations. During the last decade, European governments and the European Commission have also experimented with RIA requirements. Since 1993, Executive Order 12866 has outlined the fundamental analytical steps. Agencies must identify the problem they are trying to address, assess its significance, examine a wide range of alternative solutions, assess the costs and benefits of the alternatives, and regulate only when the benefits justify the costs.[1]

Analytical requirements are especially rigorous for "economically significant" regulations that "have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local or tribal government or communities" (EO 12866, Sec. 2(f)(1)) (Clinton 1993). The Office of Management and Budget (OMB) Circular A-4, issued in September 2003, offers more detailed guidance on

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"best practices" in regulatory analysis (OMB 2003). Despite executive orders and detailed guidance, the quality of agencies' regulatory analysis has been inconsistent at best and not necessarily influential:

- Agencies' *ex ante* estimates have tended to overestimate both benefits and costs (Harrington *et al.* 2000; OMB 2005; Harrington 2006).
- Robert Hahn developed and applied a yes/no checklist to evaluate whether health, safety, and environmental RIAs included major elements expected by the OMB. Surveying the evidence, Hahn and Tetlock (2008, pp. 82–83) concluded that economic analysis has not had much impact, and the general quality of regulatory analysis is low.
- Case studies find that even extensive regulatory analyses often have substantial weaknesses. Regulatory analysis rarely, if ever, dictates the agency's decision, occasionally affects important aspects of decisions, and more often has smaller effects on some aspects of decisions (McGarity 1991; Morgenstern 1997; Graham 2008; Harrington *et al.* 2009; Shapiro & Morrall 2012).
- Renda (2006) and Cecot *et al.* (2008), in this journal, applied the OMB quantitative scoring approach to European Commission impact assessments, finding them trailing the US in quality.
- Belcore and Ellig (2008) employed qualitative scoring to assess regulatory analysis at the US Department of Homeland Security during its first five years, concluding those analyses were seriously incomplete but improved over time.
- Fraas and Lutter (2011) assessed whether final RIAs for environmental regulations comply with key elements of Circular A-4 and Executive Order 12866. They found that RIAs usually comply with requirements that are easy to adhere to, but are less likely to comply with requirements that involve substantial resources or effort.
- Shapiro and Morrall (2012) in this journal used a yes/no checklist to evaluate RIAs for the 109 final regulations issued between 2000 and 2009 that estimated both benefits and costs, using six criteria suggested by the OMB. They found that the quality of the analysis is unrelated to the size of the rule's net benefits, but regulations that receive few public comments and are not issued at the end of an administration have the highest net benefits.

Our study employs a structured, qualitative scoring system to assess the quality and use of regulatory analysis for proposed, economically significant regulations in 2008, 2009, and 2010. This time period is of interest for several reasons. First, it lets us assess whether a change in presidential administrations led to a noticeable change in the quality or use of regulatory analysis. Second, the time frame includes some temporary factors that might affect the quality or use of regulatory analysis: the adoption of "midnight regulations" at the end of the Bush administration, and the transition period at the beginning of the Obama administration when an acting administrator headed the Office of Information and Regulatory Affairs (OIRA), which reviews federal agencies' regulations and analysis. Third, the change in political parties makes it possible to identify whether different administrations favor some agencies over others based on policy priorities.

 

The scoring system uses 12 criteria derived from executive orders and OMB guidance. The detailed nature of the scoring permits testing of whether the variables of interest differentially affect various aspects of a regulatory analysis, such as the definition of the systemic problem the regulation seeks to solve or the analysis of alternative solutions. Because we score regulations on both quality and use of analysis, we can also examine whether the change of administrations has separate effects on quality and use.

Beyond the particular effects of presidential administrations, this paper makes a wider contribution to the literature on the quality of regulatory analysis. The quality of analysis remains far short of the ideal enunciated in executive orders and OMB guidance. We hope that the data set we employ will become a starting point for future empirical investigations aimed at identifying factors that could improve the quality and use of regulatory analysis.

## 2. Continuity versus change in regulatory impact analysis

### 2.1. Continuity

There are several institutional reasons to expect that the quality and use of regulatory analysis would remain unchanged across administrations. First, the principles and practices in Executive Order 12866 (1993) and OMB Circular A-4 (2003) have been in place for a number of years across multiple administrations. The Obama administration did not change them during our period of study, and in fact reaffirmed them with an OMB Regulatory Analysis Checklist in November 2010 (OMB 2010) and an executive order in January 2011 (Obama 2011). Second, RIAs are usually conducted by career staff, who do not change from one administration to the next. Third, the OIRA staff who review regulations are also career civil servants. Fourth, it often takes more than a year to develop a regulatory proposal. Many regulations proposed in the first year of the Obama administration may have had some analytical work done during the Bush administration.

This does not mean that politics never influences regulatory analysis or its use in decisions. Indeed, the potential for politicization of regulatory analysis occurs in all administrations (Arbuckle 2011). The claim that analysts are expected to produce RIAs that support decisions already made for other reasons is a recurring theme (Williams 2008). Though this may be unfortunate, it suggests possible continuity in the quality and use of regulatory analysis because, as articles in this journal have shown, politics is always a factor in regulatory analysis and decisions on both sides of the Atlantic (Dunlop *et al.* 2012; Shapiro & Morrall 2012).

### 2.2. Change

Conversely, there are several valid reasons to expect the change of administrations would alter the quality or use of regulatory analysis. Some differences are temporary results of a presidential transition; others may reflect more permanent differences between administrations.

#### *2.2.1. Temporary differences*

Administrations usually experience a surge of "midnight regulations" during the period between Election Day and Inauguration Day, as the outgoing administration rushes to put its priorities into place (Cochran 2001; de Rugy & Davies 2009). The trend is especially pronounced when control of the presidency switches parties. Political pressure

 

to enact these regulations, combined with the tight deadlines, may reduce the quality or use of regulatory analysis in agencies. Politics may also short-circuit OIRA's normal "watchdog" function, preventing the administrator from returning regulations not justified by analysis. Even if politics weren't a factor, the sheer increase in volume of regulations may swamp the OIRA's review capacity (Brito & de Rugy 2009, pp. 184–189; McLaughlin 2011).

During the Bush administration's final year, the OIRA was headed by Susan Dudley, a staunch opponent of midnight regulations (Dudley 2009). The administration sought to limit midnight regulations, imposing a deadline of 1 June for proposed regulations and 1 November for final regulations. Some midnight regulations nevertheless got through after these deadlines, and they had lower-quality analysis than the Bush administration's non-midnight regulations (McLaughlin & Ellig 2011). Other regulations proposed near the end of the Bush administration were left for the Obama administration to finalize. These "midnight leftovers" might have lower-quality analysis either because Bush officials intended them to be midnight regulations or because they were lower-priority rules.

There also exists an institutional reason one might expect a diminution in the quality or use of regulatory analysis at the outset of the Obama administration. From Inauguration Day until Cass Sunstein's confirmation on 10 September 2009, the OIRA had an acting administrator who was a career civil servant, rather than a presidential appointee. In a dispute with an agency over the quality or use of regulatory analysis, an acting administrator may have less clout than a presidential appointee. Thus, the OIRA may have played a less aggressive role during this interregnum period, with the quality or use of regulatory analysis diminishing as a result.

*2.2.2. Permanent differences*

More generally, the Bush administration came under criticism for politicizing analysis, particularly related to scientific topics (Union of Concerned Scientists 2004). In March 2009, the Obama administration issued a memorandum on scientific integrity instructing the director of the Office of Science and Technology Policy to develop recommendations to "guarantee scientific integrity throughout the executive branch." (Obama 2009).

The Obama administration sent other strong signals that it expected regulatory agencies to make decisions based on evidence and analysis. The president ordered the director of OMB to solicit public comment on revising Executive Order 12866. He appointed Cass Sunstein, a well-known proponent of benefit–cost analysis, as OIRA administrator. Prior to his appointment, Sunstein had coauthored a law review article calling for a new executive order to promote "deeper and wider cost-benefit analysis" (Hahn & Sunstein 2002). Annual OMB reports to Congress touted the spread between estimated benefits and costs of regulation as an indication that the administration took regulatory analysis seriously and used it to promote cost-effective regulation (OMB 2011, pp. 55–57). Sunstein stated publicly that evidence-based analysis had improved regulations in the Obama administration (House Judiciary Committee 2010, p. 18; Sunstein 2011a, p. 12).

However, not every signal from the Obama administration suggested improvements in the quality or use of regulatory analysis. Traditionally, the most vocal criticisms of regulatory impact analysis have come from progressive Democrats. The progressive vision was laid out by the Center for Progressive Reform. The document called for an end to centralized OIRA review of regulations and for replacement of the current RIA

 

requirements with "pragmatic regulatory analysis," a multidisciplinary dialog within agencies that would reach decisions while usually dispensing with monetization of benefits and costs (Steinzor *et al*. 2009). Perhaps the call for a new executive order would lead to deeper and wider cost–benefit analysis – or perhaps it would become a vehicle for reducing the emphasis on economic analysis. The president's memo instructing the OMB to revise the executive order was worded neutrally enough to permit either interpretation.

The OIRA also seemed to be less aggressive early in the Obama administration. The average length of OIRA review of non-budget regulations dipped from 66 days in 2008 to 39 in 2009, before rebounding to 74 days in 2010. By mid-2010, the OIRA had reviewed 900 significant federal rules but returned none (House Judiciary Committee 2010, p. 19). Cass Sunstein did not publicly return a regulation to an agency until 2 September 2011 (Sunstein 2011b). Further obscuring the administration's intentions, the president appointed Lisa Heinzerling, a vocal critic of benefit–cost analysis, to head the policy office at the Environmental Protection Agency (see e.g. Ackerman & Heinzerling 2004). Whether proponents of benefit–cost analysis or the progressives had the upper hand in the administration – at least in the two years preceding the 2010 elections – was anyone's guess. If the former, we would expect the quality of analysis measured by the traditional EO 12866 criteria to improve; if the latter, we would expect a decline.

The debate about the direction a new executive order would take presumably ended when President Obama issued Executive Order 13563, "Improving Regulation and Regulatory Review," on 18 January 2011, explicitly reaffirming the "principles, structures, and definitions" in Executive Order 12866 (Obama 2011). Thus, our sample of regulations covers the period during the Obama administration when the role of regulatory impact analysis may have been less clear.

Another, more subtle form of change would reflect a shift in policy priorities from a Republican to a Democratic administration. Even if the quality or use of regulatory analysis remained unchanged across administrations, different administrations may assign a different priority to regulatory analysis for regulations reflecting their particular policy priorities. For example, prior research has found that the Bush administration's early homeland security regulations and the Obama administration's early health care regulations were accompanied by very incomplete economic analysis (Belcore & Ellig 2008; Ellig & Conover 2012). We predict that administrations would require less thorough analysis from agencies whose policy preferences comport with those of the administration.

## 3. Data and evaluation method

### 3.1. Evaluation method and data formation

Following Ellig and McLaughlin (2012), we use a scoring system that evaluates the quality and apparent use of regulatory analysis for economically significant regulations proposed in 2008, 2009, and 2010. This approach allows us to evaluate a wide variety of regulations – economic, environmental, safety, civil rights, security, and budget – over multiple years and two administrations. All economically significant regulations (regulations anticipated to have an impact on the economy of $100 million or more) from executive branch agencies are accompanied by an RIA. The scoring system assesses how well each RIA follows the guidance and best practices established in Executive Order 12866 and OMB Circular A-4. Additionally, the scoring system contains questions designed to ascertain

 

**Table 1** Evaluation criteria

**Openness**

1. **Accessibility:** How easily were the regulatory impact analysis, the proposed rule, and any supplementary materials found online?
2. **Data Documentation:** How verifiable are the data used in the analysis?
3. **Model Documentation:** How verifiable are the models and assumptions used in the analysis?
4. **Clarity:** Was the analysis comprehensible to an informed layperson?

**Analysis**

5. **Outcomes:** How well does the analysis identify the desired benefits or other outcomes and demonstrate that the regulation will achieve them?
6. **Systemic Problem:** How well does the analysis identify and demonstrate the existence of a market failure or other systemic problem the regulation is supposed to solve?
7. **Alternatives:** How well does the analysis assess the effectiveness of alternative approaches?
8. **Benefit-Cost Analysis:** How well does the analysis assess costs and benefits?

**Use**

9. **Use of Analysis:** Does the proposed rule or the Regulatory Impact Analysis (RIA) present evidence that the agency used the RIA?
10. **Net Benefits:** Did the agency maximize net benefits or explain why it chose another option?
11. **Measures and Goals:** Does the proposed rule establish measures and goals that can be used to track the regulation's results in the future?
12. **Retrospective Data:** Did the agency indicate what data it will use to assess the regulation's performance in the future and establish provisions for doing so?

whether an agency used the results of an RIA to inform the creation of the proposed regulation it accompanies, as well as whether the agency documents any commitment to conducting retrospective analysis to assess the actual outcomes of the rule in the future.

Our data set includes evaluations of the RIAs for 111 proposed, economically significant regulations. A team of economists and graduate students trained in regulatory analysis read the RIAs accompanying the proposed rules, as well as the proposed rules' preambles and Regulatory Flexibility Analyses, to the extent that these had any content relevant to the evaluation criteria. When relevant, additional documents, such as risk assessments or technical support documents, were also considered. This approach was necessary because of the inconsistent manner in which agencies' analysis of regulations is conveyed to the public. Sometimes an RIA is a separate document, with a summary or reference in the *Federal Register* preamble. Other times, the *Federal Register* notice contains the entire RIA. Some analysis, such as environmental impact analysis or risk assessment, may be in other sections of the preamble. Our inclusive approach permits us to give the agency credit when due, regardless of where the analysis appears.

Table 1 lists the 12 evaluation criteria. For each question, an RIA could receive a minimum score of zero (worst) and a maximum score of five (best).

The first eight criteria in Table 1 are the Openness and Analysis criteria. These measure the degree to which an RIA follows the provisions in Executive Order 12866 and Circular A-4, and thus they measure the quality of analysis. The Use criteria – numbered 9–12 – assess whether and to what degree the analysis was used to inform the crafting of

 

the regulation. Also, the Use criteria ask whether the RIA or preamble proposes any retrospective evaluation methods or metrics for the proposed regulation – that is, are there any provisions to measure whether the regulation achieves the desired outcomes? In several cases, a criterion actually consists of a series of questions, all of which are scored from zero to five and then averaged to produce a score for the criterion. All of these scoring criteria and their component questions are explained in further detail in Ellig and McLaughlin (2012).

Any qualitative evaluation system will always be subject to critiques of subjectivity, lack of transparency, and difficulty in replication. Several measures were taken to minimize these drawbacks. First, all members of the research team underwent extensive training in which several of the same proposed regulations and accompanying RIAs were evaluated. The scores from those training evaluations were compared and major differences were discussed until we achieved a consensus on scoring standards. Second, we implemented written guidelines that describe practices and examples that would justify various scores in most cases. Third, each analysis was scored by one of the authors of this article and another researcher, with discussion to achieve consensus when scores differed significantly. For each question and sub-question, all evaluators took notes justifying each score. Each evaluator reviewed the other's scores and notes, and then discussed and resolved differences to ensure that all documents were evaluated as consistently as possible on all questions.[2]

### 3.2. Inter-rater reliability tests

*Ex post*, we performed extensive statistical analyses to test whether the evaluation system yields consistent agreement among trained evaluators. Primary among these is inter-rater reliability testing on the evaluation data. Inter-rater reliability is the degree to which raters agree with each other about their subjective evaluations of a given object. Our inter-rater reliability analysis produces objective measures of the likelihood that the evaluation system would reliably produce similar results if a different set of trained evaluators rated the same set of RIAs. The Cohen kappa index is the most commonly used statistical measure of inter-rater reliability in social sciences (Siegel & Castellan 1988; Perreault & Leigh 1989). Prior to reconciliation between raters, Cohen's kappa for the entire sample equaled 0.4506, which indicates moderate agreement among the raters according the rules of thumb established by Landis and Koch (1977). However, raters discussed any disagreements until they reached consensus on the appropriate score, meaning that after reconciliation, Cohen's kappa indicated the maximum possible agreement between raters.

We also examine agreement matrices for all questions together and for each individual question. The goal of examining agreement matrices is to ensure that the evaluation system leads to substantial agreement between raters, regardless of who was doing the evaluation or which regulation was evaluated. Each agreement matrix plots all scoring pairs' ratings, with one scorer's ratings on a vertical scale and the other scorer's on a horizontal scale. Perfect agreement between raters (regardless of which regulation was being rated) would be indicated by a concentration of all observations along the diagonal of each matrix, and agreement in general is indicated by density along and near the diagonals. As shown in Table 2, 92.9 percent of all pairs of ratings scored within two of each other, with about 39 percent exhibiting perfect agreement, another 39 percent of the ratings pairs falling within one point of each other, and 15 percent falling two points from

 

**Table 2** Agreement matrix, all criteria

| Score 1 | Score 2 | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | Total |
| 0 | 90 | 55 | 29 | 11 | 8 | 2 | 195 |
| 1 | 46 | 114 | 51 | 20 | 15 | 2 | 248 |
| 2 | 27 | 76 | 82 | 61 | 34 | 8 | 288 |
| 3 | 10 | 33 | 55 | 114 | 53 | 20 | 285 |
| 4 | 6 | 15 | 25 | 62 | 90 | 20 | 218 |
| 5 | 2 | 5 | 11 | 12 | 37 | 31 | 98 |
| Total | 181 | 298 | 253 | 280 | 237 | 83 | 1,332 |

| Distance from diagonal | Observations | Percentage |
|---|---|---|
| 0 | 521 | 0.391 |
| 1 | 516 | 0.387 |
| 2 | 200 | 0.150 |
| > 2 | 95 | 0.071 |

each other. The separate agreement matrices for criteria 1–12 are in an inter-rater reliability analysis available online.[3] Only on criteria 1, 9, and 10 did more than 10 percent of pairs fall more than two points from each other, and even in those cases the percentage of pairs that disagree by more than two points is relatively small (11.7 percent for criterion 1, and 12.6 percent for criteria 9 and 10). All other criteria show remarkable agreement.

## 4. Descriptive statistics

### 4.1. Evaluation data

Table 3 shows summary statistics of the evaluation results in each year and for the entire sample. There are 111 different RIAs – 47 from year 2008, 42 from year 2009, and 22 from year 2010.[4] There are a smaller number of regulations in the sample in 2010 because budget regulations were not included in the evaluation process in 2010, for reasons explained below. Of these 111 observations, 49 were created under the Bush administration and 62 under the Obama administration. As the 12 questions comprising the evaluations are separable into Openness, Analysis, and Use categories, we report the mean scores for each of these categories as well. These category scores and the overall scores simply consist of the sum of the relevant questions' scores.

In addition to giving overall summary statistics, Table 3 separates budget and prescriptive regulations promulgated under each administration, for a couple of reasons. First, budget regulations are apparently treated differently by the OIRA, the government agency charged with reviewing regulations prior to their promulgation (McLaughlin & Ellig 2011). Second, promulgating agencies themselves apparently also treat budget regulations differently than prescriptive regulations. Regulatory analyses accompanying budget regulations tend to focus more on budgetary impacts than on the traditional components of regulatory impact analysis, such as costs and benefits (Posner 2003), and this is reflected in the overall lower scores that budget regulations receive compared with prescriptive regulations. Once this became clear after the 2008 and 2009 regulations were evaluated, budget regulations were not evaluated in 2010 due to resource constraints. To

 

**Table 3** Summary statistics of evaluation data

| Variable | Entire sample (2008–2010) | | | | | Bush Prescriptive | | | Bush Budget | | | Obama Prescriptive | | | Obama Budget | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Obs | Mean | SD | Min | Max | Obs | Mean | SD | Obs | Mean | SD | Obs | Mean | SD | Obs | Mean | SD |
| Total | 111 | 27.8 | 9.0 | 5 | 48 | 30 | 32.5 | 6.2 | 19 | 18.2 | 6.3 | 42 | 32.2 | 7.0 | 20 | 20.9 | 6.6 |
| Openness | 111 | 11.8 | 3.0 | 3 | 18 | 30 | 12.2 | 2.8 | 19 | 9.3 | 2.8 | 42 | 13.3 | 2.2 | 20 | 10.5 | 2.9 |
| Analysis | 111 | 8.9 | 4.3 | 0 | 18 | 30 | 11.0 | 3.1 | 19 | 4.1 | 2.3 | 42 | 11.3 | 3.4 | 20 | 5.0 | 2.2 |
| Use | 111 | 7.2 | 3.4 | 0 | 15 | 30 | 9.3 | 2.8 | 19 | 4.8 | 2.6 | 42 | 7.6 | 3.3 | 20 | 5.5 | 2.9 |
| 1. Accessibility | 111 | 3.8 | 1.2 | 0 | 5 | 30 | 3.3 | 1.6 | 19 | 3.8 | 0.9 | 42 | 4.1 | 0.9 | 20 | 4.2 | 0.8 |
| 2. Data documentation | 111 | 2.5 | 1.3 | 0 | 5 | 30 | 2.7 | 1.1 | 19 | 1.7 | 1.2 | 42 | 3.0 | 1.2 | 20 | 1.9 | 1.6 |
| 3. Model documentation | 111 | 2.6 | 1.2 | 0 | 5 | 30 | 2.8 | 1.1 | 19 | 1.7 | 1.2 | 42 | 3.1 | 1.0 | 20 | 2.0 | 1.2 |
| 4. Readability | 111 | 2.9 | 1.0 | 0 | 5 | 30 | 3.4 | 0.9 | 19 | 2.2 | 1.1 | 42 | 3.1 | 0.8 | 20 | 2.4 | 0.8 |
| 5. Outcomes | 111 | 2.6 | 1.4 | 0 | 5 | 30 | 3.1 | 0.9 | 19 | 1.2 | 1.1 | 42 | 3.4 | 1.0 | 20 | 1.3 | 0.9 |
| 6. Systemic problem | 111 | 1.7 | 1.3 | 0 | 5 | 30 | 2.4 | 1.4 | 19 | 0.6 | 0.6 | 42 | 2.1 | 1.2 | 20 | 1.1 | 0.7 |
| 7. Alternatives | 111 | 2.4 | 1.4 | 0 | 5 | 30 | 2.9 | 1.1 | 19 | 1.1 | 0.9 | 42 | 3.0 | 1.1 | 20 | 1.3 | 0.9 |
| 8. Costs and benefits | 111 | 2.2 | 1.0 | 0 | 5 | 30 | 2.6 | 0.7 | 19 | 1.1 | 0.6 | 42 | 2.7 | 1.0 | 20 | 1.4 | 0.6 |
| 9. Some use of analysis | 111 | 2.3 | 1.3 | 0 | 5 | 30 | 2.7 | 1.4 | 19 | 1.9 | 1.1 | 42 | 2.2 | 1.3 | 20 | 2.5 | 1.2 |
| 10. Cognizance of net benefits | 111 | 2.1 | 1.5 | 0 | 5 | 30 | 3.0 | 1.2 | 19 | 0.8 | 0.6 | 42 | 2.6 | 1.4 | 20 | 0.7 | 0.7 |
| 11. Goals and measures | 111 | 1.3 | 0.9 | 0 | 5 | 30 | 1.5 | 1.1 | 19 | 0.9 | 0.8 | 42 | 1.3 | 0.9 | 20 | 1.1 | 1.0 |
| 12. Retrospective data | 111 | 1.6 | 1.0 | 0 | 5 | 30 | 2.0 | 1.1 | 19 | 1.2 | 0.8 | 42 | 1.6 | 1.0 | 20 | 1.2 | 1.0 |

Obs, number of observations; SD, standard deviation.

ensure that the budget regulations do not bias our results, some of the econometric analysis below shows separate analyses using the entire sample of 111 regulations and the smaller sample of 72 prescriptive regulations.

Several patterns are noteworthy in the summary statistics of the prescriptive regulations in Table 3. First, the mean of the total evaluation scores is virtually identical across the two administrations, equaling about 32 in each period. The maximum possible score equals 60, so there was ample room for improvement under each administration.

Second, an examination of the three categories of criteria – Openness, Analysis, and Use – reveals a similar inertia. On the one hand, the mean of Openness for prescriptive regulations slightly increased from 12.2 under Bush to 13.3 under Obama, and the mean of Analysis increased from 11.0 under Bush to 11.3 under Obama. On the other hand, the mean of Use decreased from 9.3 under Bush to 7.6 under Obama. None of these changes in the mean score is statistically significant at traditional levels. Keeping in mind that the maximum possible score for each of these equals 20 (for example, Openness is composed of the sum of Questions 1–4, each of which can receive a maximum score of 5), the marginal increases in Openness and Analysis do not seem to indicate a widespread adoption of best practices.

Table 3 also includes the mean scores for each of the 12 questions listed in Table 1.[5] Even when comparing mean scores of individual criteria 1–12, there appear to be no significant differences across administrations. The largest change for prescriptive regulations is for criterion 1 – Accessibility – but even that increase from 3.3 under the Bush administration to 4.1 under the Obama administration is not large enough to rate statistical significance at traditional levels.

### 4.2. Explanatory and control variables

We combine our evaluation data with several explanatory and control variables to test whether factors associated with the change in administrations are correlated with scores on the quality and use of regulatory analysis. Most of these variables are binary, indicating whether a regulation falls into a particular classification, such as the type of regulation (economic, civil rights, security, environment, safety, or budget), the agency promulgating the regulation, and whether one particular piece of legislation, the American Recovery and Reinvestment Act (the "stimulus bill"), was the impetus for the regulation's creation. Other groups of variables include those related to the change in administrations, such as midnight regulations, the presence of an acting administrator as head of the OIRA, and a measure of each agency's policy preferences interacted with each administration. Table 4 gives summary statistics for these variables, in three groups: Policy-Related, Type of Regulation, and Change of Administration. For those variables that are binary, we report the number of observations that equal unity and the means and standard deviations of Total for those observations where the binary variable equals unity.

The Policy-Related variables use the Clinton and Lewis (2008) metric of agency policy preferences. Clinton and Lewis asked a sample of academics, journalists, and Washington think tank experts to characterize agencies' policy views as liberal or conservative based on "law, practice, culture, or tradition." They then developed a model that weighted experts' scores based on the relationship between each expert's ratings for each agency. The scores of agencies in our sample range from most liberal (Department of Labor, mean score −1.43) to most conservative (Department of Defense, mean score 2.21). By

 

**Table 4** Summary statistics, explanatory variables

| Policy | Prescriptive | | | | | Budget | | | | | Overall | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Obs | Mean | SD | Min | Max | Obs | Mean | SD | Min | Max | Obs | Mean | SD | Min | Max |
| Agency Preference | 72 | −0.45 | 0.87 | −1.43 | 1.07 | 39 | 0.89 | 0.78 | −1.33 | 2.21 | 111 | −0.60 | 0.87 | −1.43 | 2.21 |
| Obama Agency Preference | 72 | −0.36 | 0.71 | −1.43 | 1.07 | 39 | −0.54 | 0.67 | −1.33 | 0.35 | 111 | −0.42 | 0.70 | −1.43 | 1.07 |
| Bush Agency Preference | 72 | −0.09 | 0.56 | −1.43 | 1.07 | 39 | −0.34 | 0.74 | −1.32 | 2.21 | 111 | −0.18 | 0.64 | −1.43 | 2.21 |
| Type of Regulation (binary vars) | Obs | Mean | SD | Min | Max | Obs | Mean | SD | Min | Max | Obs | Mean (total) | SD (total) | Min (total) | Max (total) |
| Civil Rights | n/a | | | | | n/a | | | | | 5 | 27.2 | 8.47 | 14 | 35 |
| Economic | n/a | | | | | n/a | | | | | 14 | 30.57 | 7.84 | 16 | 41 |
| Security | n/a | | | | | n/a | | | | | 2 | 38 | 0 | 38 | 38 |
| Environment | n/a | | | | | n/a | | | | | 35 | 34.46 | 6.09 | 21 | 48 |
| Health/Safety | n/a | | | | | n/a | | | | | 17 | 30.59 | 4.85 | 21 | 38 |
| Budget | n/a | | | | | n/a | | | | | 39 | 19.59 | 6.51 | 5 | 33 |
| Stimulus | n/a | | | | | n/a | | | | | 5 | 24.2 | 4.38 | 19 | 31 |
| Change of Administration (binary) | Obs | Mean (total) | SD (total) | Min (total) | Max (total) | Obs | Mean (total) | SD (total) | Min (total) | Max (total) | Obs | Mean (total) | SD (total) | Min (total) | Max (total) |
| Bush | 30 | 32.5 | 6.2 | 21 | 43 | 19 | 18.2 | 6.3 | 7 | 33 | 49 | 26.9 | 9.4 | 7 | 43 |
| Obama | 42 | 32.2 | 7.0 | 14 | 48 | 20 | 20.9 | 6.6 | 5 | 32 | 62 | 28.5 | 8.6 | 5 | 48 |
| Acting Administrator | 10 | 31.0 | 6.1 | 21 | 40 | 15 | 20.4 | 6.8 | 5 | 31 | 25 | 24.6 | 8.3 | 5 | 40 |
| Sunstein | 32 | 32.6 | 7.3 | 14 | 48 | 5 | 22.4 | 6.1 | 18 | 32 | 37 | 31.2 | 7.9 | 14 | 48 |
| Midnight Regulation | 8 | 29.4 | 6.8 | 21 | 40 | 4 | 24.5 | 7 | 17 | 33 | 12 | 27.8 | 7.0 | 17 | 40 |
| Midnight Leftover | 9 | 30.8 | 4.5 | 27 | 37 | 6 | 14.3 | 5.8 | 7 | 23 | 15 | 24.2 | 9.7 | 7 | 37 |

Obs, number of observations; SD, standard deviation.

interacting these scores with a dummy variable for each administration, we can assess whether the quality and use of regulatory analysis correlate with agency policy preferences differently in different administrations.

A casual glance at the Type of Regulation variables confirms some findings in existing literature on the quality of regulatory analysis. For example, budget regulations typically have much lower-quality analysis (Posner 2003; Ellig & McLaughlin 2012). In our sample, the mean total of the 39 budget regulations equals 19.6, whereas the mean total of all 111 regulations in the sample is 27.8. Security and environment regulations typically have the highest scoring analyses. Economic and civil rights regulations score statistically very close to the overall sample mean, but they also have the highest standard deviations. This may simply reflect a broader dispersion of economic and civil rights regulations across agencies, in comparison with a relative concentration of environment and security regulations in a few agencies.

The Change of Administration variables include midnight regulations-related categories and categories related to the change of OIRA administrators. The 62 regulations proposed under the Obama administration have a mean total of 28.5 – close to the overall sample mean of 27.8. Midnight Regulations are regulations that were proposed after the Bush administration's self-imposed deadline of 1 June 2008, and finalized between Election Day and Inauguration Day. Midnight Leftovers are regulations that were proposed after 1 June 2008, but left for the Obama administration to finalize. The mean totals for Midnight Regulations and Midnight Leftovers are 29.4 and 30.8, respectively, in the sample of prescriptive regulations, and 27.8 and 24.2, respectively, in the overall sample that includes budget regulations. Thus, at first glance, prescriptive midnight regulations appear to reflect lower quality, as their mean total of 29.4 is lower than the mean of 32.3 for all prescriptive regulations. Perhaps this occurs because the surge in bureaucratic activity typically observed in a midnight period may overwhelm the oversight and review process (McLaughlin 2011). Similarly, the Acting Administrator variable seems to indicate a slight decrease in quality for the period when an acting administrator controlled the OIRA – that is, from Inauguration Day until Cass Sunstein's confirmation on 10 September 2009. The mean total for prescriptive regulations completed while there was an acting administrator equals 31.0, marginally lower than the mean after Sunstein's confirmation, which is 32.6.

## 5. Results

We test hypotheses by assessing whether various factors associated with the change in administrations are correlated with scores on the quality and use of regulatory analysis. The score data are ordinal, not cardinal. A regulation receiving 48 points, for example, does not necessarily have analysis twice as good as a regulation receiving 24 points. For this reason, the appropriate regression technique is ordered logit.

### 5.1. Total score

Table 5 starts with a simple model that includes only a dummy variable for the Obama administration and dummy variables that control for the type of regulation. Models 1–4 suggest there is no difference in the quality or use of analysis between the Bush and Obama administrations. Models 2 and 3, however, show significantly lower scores for the Bush administration's midnight leftovers – regulations that cleared the OIRA after June

 

**Table 5** Dependent variable: total score (ordered logit regressions)

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Obama Administration | 0.04 [0.11] | −0.56 [1.11] | −0.50 [0.90] | −0.53 [0.95] | 0.46 [0.69] | −0.56 [0.74] |
| Acting OIRA Administrator | | | −0.11 [0.23] | −0.11 [0.23] | −0.08 [0.17] | −0.58 [0.92] |
| Midnight Regulation | | −0.52 [0.75] | −0.51 [0.75] | −0.54 [0.79] | −0.65 [0.95] | −3.10 [3.33***] |
| Midnight Leftover | | −1.29 [2.10**] | −1.28 [2.09**] | −1.20 [1.89*] | −0.73 [1.11] | −2.21 [2.57***] |
| Civil Rights | 2.55 [2.76***] | 2.39 [2.66***] | 2.39 [2.65***] | 2.44 [2.66***] | 2.77 [2.80***] | −0.87 [0.86] |
| Economic | 3.27 [4.77***] | 3.37 [4.93***] | 3.34 [4.80***] | 3.38 [4.85***] | 3.58 [5.20***] | |
| Security | 5.27 [4.53***] | 4.83 [4.05***] | 4.81 [4.03***] | 5.01 [3.96***] | 6.16 [4.60***] | 2.22 [1.65*] |
| Environment | 4.23 [7.27***] | 4.39 [7.43***] | 4.36 [7.20***] | 4.41 [7.16***] | 4.50 [7.33***] | 1.38 [2.11**] |
| Health/Safety | 3.16 [5.29***] | 3.34 [5.44***] | 3.30 [5.17***] | 3.35 [5.17***] | 3.20 [4.92***] | −0.38 [0.52] |
| Stimulus | 1.31 [1.63*] | 1.39 [1.71*] | 1.38 [1.70*] | 1.37 [1.70*] | 1.63 [1.68*] | |
| Agency Preference | | | | −0.11 [0.47] | | |
| Obama Agency Preference | | | | | 0.56 [1.68*] | 1.31 [3.38***] |
| Bush Agency Preference | | | | | −0.71 [2.27**] | −1.35 [3.15***] |
| LR chi-sq | 77.18*** | 81.66*** | 81.71*** | 81.93*** | 89.48*** | 39.95*** |
| Pseudo R-squared | 0.10 | 0.11 | 0.11 | 0.11 | 0.12 | 0.09 |
| N | 111 | 111 | 111 | 111 | 111 | 72 |

Z-statistics in brackets. Statistical significance: ***1%; **5%; *10%. OIRA, Office of Information and Regulatory Affairs.

2008 that were left for the Obama administration to finalize. Model 3 and subsequent models also indicate that the quality and use of analysis were no lower during the interregnum period before Cass Sunstein was confirmed as OIRA administrator.

Models 4 and 5 add Clinton and Lewis's (2008) measure of agency policy preferences. Model 4 indicates that agency policy preferences appear unrelated to the quality and use of regulatory analysis. Model 5 shows that this occurs because the direction of the effect may differ across administrations. In the Obama administration, more conservative agencies tend to have higher-quality analysis, whereas in the Bush administration, more liberal agencies tend to have higher-quality analysis.

This pattern is consistent with the hypothesis that an administration demands less thorough analysis from agencies whose underlying policy views are more congruent with the administration's. Conversely, an agency whose policy preferences differ from the administration's must produce better analysis to get its regulations through. This appears to be the primary difference between administrations. The Obama administration dummy variable is never significant.

Almost all of the regulation type dummy variables are highly significant in all models. The omitted category in models 1–5 is ordinary budget regulations. There is noticeable variation between different types of non-budget regulations. In addition, budget regulations implementing the Recovery Act may have somewhat better quality or use of analysis than other budget regulations. The results suggest that the type of regulation has a strong effect on the quality and use of analysis – perhaps because the OIRA treats different types of regulations differently, or because the state or the art for analyzing some kinds of regulations is more advanced than for others.

One might surmise that the effects of regulation type reflect agency-specific factors. But regressions including agency-specific dummy variables show that agency-specific effects are rarely significant, and most of the regulation type control variables remain highly significant.[6] If there are agency-specific effects, they must occur at the sub-agency level (e.g. the Occupational Safety and Health Administration within the Labor Department may have different fixed effects than the Employee Benefits Security Administration). Unfortunately, there are not enough data points to perform reliable tests of sub-agency fixed effects.

Model 6 uses the same specification as Model 5 but excludes budget regulations. Confining the analysis to prescriptive regulations makes the results for midnight leftovers and agency preferences even stronger. Midnight regulations also become negative and statistically significant. We suspect the inclusion of budget regulations masks some effects because the overall quality of budget regulations is much lower. (The omitted regulation type dummy variable in Model 6 is economic regulation. The effects of other regulation types are smaller and less significant in Model 6 because they are now being compared with economic regulations rather than budget regulations.)

The statistical significance of some variables may depend on the weighting of questions when calculating the total score. To avoid arbitrariness, the total score weights each criterion equally, even though some aspects of regulatory analysis may be more important than others. Identification of the market failure or other systemic problem, for example, may be more important than readability for developing an effective regulatory solution. Below, we perform regressions on different categories of criteria and individual criteria, to see whether differences between administrations affect scores on disparate evaluation criteria differently.

 

### 5.2. Three categories of criteria

Table 6 shows the results for Models 5 and 6 using the separate openness, analysis, and use scores as the dependent variables. As in Table 6, the Obama and acting OIRA administrator variables reveal no overall difference in the quality of regulatory analysis after controlling for midnight phenomena and agency policy preferences. When we omit budget regulations, the Obama variable seems to lower the use score.

Confining the sample to prescriptive regulations, midnight regulations score lower on all three categories of criteria. Midnight leftovers have lower scores for Openness and Use. These results are consistent with the incentives facing agencies at the end of an administration. Midnight regulations often reflect political priorities that will be implemented regardless of the quality of the underlying analysis. Midnight leftovers, on the other hand, will not be finished before the administration ends, so it is rational for appointees to let the next administration explain how the analysis influenced the decisions.

Regulations from more conservative agencies tend to score lower on Openness in both administrations. Agency policy preferences are correlated with the quality of analysis only for prescriptive regulations. Conservative agencies tend to have higher analysis scores than liberal agencies in the Obama administration, and vice versa in the Bush administration. For Use, conservative agencies have higher scores in the Obama administration, but not in the Bush administration.

### 5.3. Individual criteria

Table 7 reports the statistical significance of the administration-related variables for individual regressions that run Model 5 using each of our 12 criteria as a dependent variable, employing the entire sample of 111 regulations. For ease of presentation, the 12 different dependent variables are listed as rows and the administration-related variables are listed as column headings.

Midnight regulations appear to score lower largely because they are less likely to assess the systemic problem thoroughly (criterion 5). Midnight leftovers perform poorly because they score significantly lower on cognizance of net benefits (criterion 10).

There is weak evidence that the Obama administration does a better job of analyzing outcomes or benefits (criterion 5). Cognizance of net benefits (criterion 10) may have suffered during the interregnum before Sunstein's confirmation. The most significant difference between administrations occurs on criterion 10 as well. Conservative agencies were much more likely to explain how net benefits were related to their decisions in the Obama administration than in the Bush administration. This criterion appears to be the principal factor driving the difference in use scores in the Obama administration. It is the only difference between administrations we find, using the 111-regulation sample, with substantial statistical significance that is not explained by a special factor, like midnight regulation.

Finally, more conservative agencies document their data less adequately (criterion 2), regardless of administration. This is the principal reason the more conservative agencies score lower on openness.

Table 7 does not report regulation type effects. As in previous tables, these variables' effects were almost always positive and highly significant, except for their effects on availability (criterion 1) and use of analysis (criterion 9). When we ran the regressions excluding budget regulations, all of the results in Table 7 still occur – with the same sign, and almost always, with much greater statistical significance. In addition, confining the

 

**Table 6** Dependent variables: categories of criteria (ordered logit regressions)

| | Openness | | Analysis | | Use | |
|---|---|---|---|---|---|---|
| | Model 5 | Model 6 | Model 5 | Model 6 | Model 5 | Model 6 |
| Obama Administration | 0.38 [0.64] | −0.28 [0.40] | 0.38 [0.59] | −0.42 [0.56] | −0.43 [0.66] | −1.27 [1.64*] |
| Acting OIRA Administrator | −0.29 [0.59] | −0.36 [0.54] | 0.06 [0.13] | −0.28 [0.42] | −0.04 [0.07] | −0.84 [1.38] |
| Midnight Regulation | −0.47 [0.71] | −2.03 [2.35**] | −0.71 [1.04] | −2.37 [−2.68***] | −0.11 [0.17] | −1.81 [2.00**] |
| Midnight Leftover | −0.46 [0.69] | −2.06 [−2.36**] | −0.08 [0.13] | −0.99 [1.21] | −1.02 [1.52] | −1.39 [1.65*] |
| Civil Rights | 2.23 [2.46***] | 0.36 [0.37] | 3.22 [3.30***] | −1.39 [1.38] | 0.51 [0.52] | −1.13 [1.11] |
| Economic | 1.79 [2.81***] | | 4.37 [5.78***] | | 1.72 [2.71***] | |
| Security | 3.09 [1.71*] | 1.23 [0.63] | 6.88 [4.87***] | 2.49 [1.79*] | 4.21 [2.56***] | 1.56 [0.91] |
| Environment | 2.91 [5.34***] | 1.34 [2.03**] | 5.42 [7.71***] | 1.41 [2.11**] | 2.31 [4.56***] | 0.98 [1.48] |
| Health/Safety | 2.09 [3.59***] | 0.29 [0.42] | 3.85 [5.43***] | −0.45 [0.62] | 1.80 [3.12***] | 0.19 [0.27] |
| Stimulus | 0.70 [0.87] | | 1.12 [1.39] | | 1.77 [1.93*] | |
| Obama Agency Preference | −0.60 [1.89*] | −0.34 [0.99] | 0.33 [1.02] | 0.69 [1.97**] | 0.66 [1.99**] | 1.59 [4.08***] |
| Bush Agency Preference | −0.85 [2.65***] | −1.64 [3.63***] | −0.47 [1.50] | −1.11 [2.61***] | −0.21 [0.62] | −0.03 [0.07] |
| LR chi-sq | 48.28*** | 25.43** | 103.87*** | 29.28*** | 42.65*** | 36.92*** |
| Pseudo R-squared | 0.09 | 0.08 | 0.17 | 0.08 | 0.08 | 0.11 |
| N | 111 | 72 | 111 | 72 | 111 | 72 |

Z-statistics in brackets. Statistical significance: ***1%; **5%; *10%. OIRA, Office of Information and Regulatory Affairs.

**Table 7** Statistically significant effects on scores for individual criteria (ordered logit regressions, all 111 regulations)

| | Midnight Regulation | Midnight Leftover | Obama Admin. | Acting OIRA Admin. | Obama Agency Preference | Bush Agency Preference |
|---|---|---|---|---|---|---|
| 1. Accessibility | | | | | | |
| 2. Data documentation | | | | | −−− | −− |
| 3. Model documentation | | | | | | |
| 4. Readability | | | | | | |
| 5. Outcomes | | | + | | | − |
| 6. Systemic problem | − | | | | | |
| 7. Alternatives | | | | | + | |
| 8. Costs and benefits | | | | | | |
| 9. Some use of analysis | | | | | | |
| 10. Cognizance of net benefits | | − | | − | ++++ | |
| 11. Goals and measures | | | − | | | |
| 12. Retrospective data | | | | | | |

Note: Regulation type dummy variables are not reported but are almost always positive and highly significant. Statistical significance: −/+ 10%; − −/++ 5%; − − −/+++ 2%; − − − −/++++ 1%.

sample to prescriptive regulations produces numerous additional results that are consistent with our other findings. Most notably, midnight regulations score significantly lower on several additional criteria (1, 2, 5, and 7). On three additional criteria (8, 9, and 12), conservative agencies tend to score higher in the Obama administration than liberal agencies.[7]

## 6. Conclusions

We found three highly statistically significant differences between the quality and use of regulatory analysis in the Bush and Obama administrations:

1. The Bush administration's midnight regulations did an inferior job of analyzing the systemic problem the regulation is supposed to solve. When we excluded budget regulations, midnight regulations also scored lower on numerous other criteria.
2. Regulations that cleared the OIRA by the June 2008 deadline but were left for the Obama administration to finalize did a poor job of explaining how net benefits affected the decision. When we excluded budget regulations, midnight leftovers also had lower-quality documentation of data, models, and the systemic problem the regulation sought to solve.
3. The only other differences between administrations depended on agency policy preferences. Where differences between administrations occurred, the more conservative agencies tended to have better analysis in the Obama administration, and the more liberal agencies tended to have better analysis in the Bush administration.

The similarities across administrations were perhaps more striking than the differences. After controlling for midnight regulations and agency policy preferences, neither the Obama administration variable, nor the interregnum when the OIRA had an acting director, had any independent effect on the quality of regulatory analysis. In both administrations, conservative agencies had lower scores for data documentation. Dummy variables representing the different types of regulation were almost always highly statistically significant, suggesting that more invariant factors, like the state of the art for analyzing different types of regulation, have a large influence on the quality and use of analysis.

These results confirm previous researchers' concerns that midnight regulations are especially problematic. Prescriptive midnight regulations receive lower-quality analysis and are less likely to use the analysis. Their latecomer cousins, midnight leftovers, are accompanied by less clear explanation of how the net benefits of the regulation affected the decision. Going forward, this suggests that policymakers' efforts to control midnight regulations would lead to better analysis and a tighter link with decisions.

Our results also confirm suspicions that regulatory analysis and decisions are susceptible to political influence, regardless of administration (Shapiro & Morrall 2012). Midnight regulations are the most obvious example. But in regard to explanation of net benefits, we also find that different administrations appear to have different standards for regulations from agencies with different policy preferences.

The summary statistics paint a less than rosy picture of the current state of regulatory impact analysis in the United States. The mean quality of all regulations included in our

 

sample is hardly stellar – a 27.8 out of 60 possible points. If we exclude budget regulations, the mean improves marginally to 32.3, but that is still barely higher than 50 percent of the possible maximum score. Regulation quality under the Bush administration averaged 32.5, and under the Obama administration it averaged 32.2 – a statistical dead heat. These findings are consistent with the conclusions of prior scholarship assessing the quality of regulatory impact analysis (Hahn & Tetlock 2008; Shapiro & Morrall 2012)

Finding ways to improve the quality of regulatory analysis should be a high priority. These data are a first step.

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## Notes

1 This last requirement applies to the extent permitted by law. Certain statutes do not allow consideration of costs.
2 A complete set of composite scoring notes for each regulation is available at http://www.mercatus.org/reportcard.
3 The inter-rater reliability analysis is available at http://www.mercatus.org/reportcard.
4 Ellig and McLaughlin (2012) evaluate 45 economically significant proposed regulations from 2008, which includes all of the regulations for which they could find RIAs. Our sample includes 47 because two additional RIAs became available after their analysis was performed.
5 Summary statistics of the sub-questions that are often used to construct the score for particular questions are not reported here, but are available upon request. There are five sub-questions for Question 5, four for Question 6, four for Question 7, and nine for Question 8. All data can be downloaded on Excel spreadsheets at http://www.mercatus.org/reportcard.
6 Results are available from the authors.
7 Regression results are not reported but are available from the authors.

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