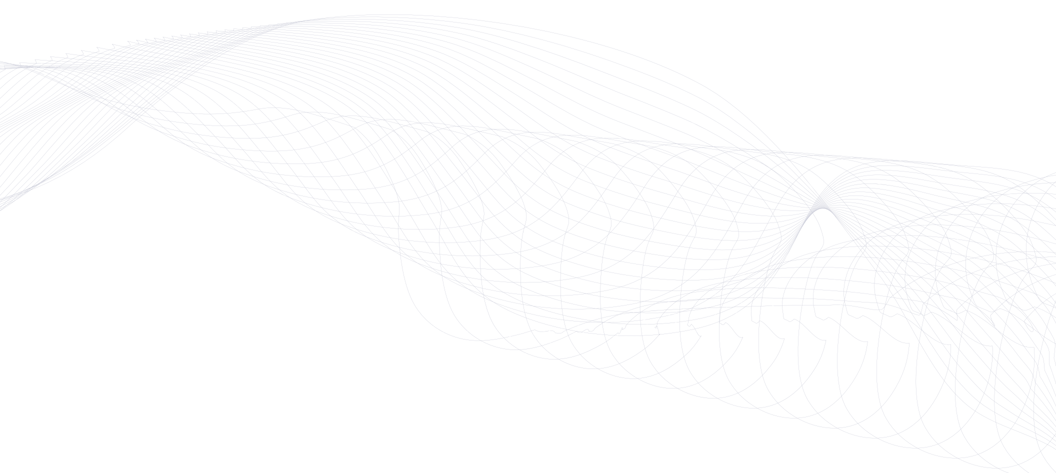
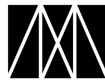
TEN PRINCIPLES FOR BETTER REGULATION

BY JERRY ELLIG





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For nearly four decades, presidential administrations have required executive branch regulatory agencies to identify the problem they are trying to address and assess its significance, examine a wide range of alternative solutions, estimate the costs and benefits of the alternatives, and regulate only when the benefits justify the costs. In 1993, President Clinton's Executive Order 12866 laid out the fundamental requirements that have governed regulatory analysis and review ever since.[1] In January 2011, President Obama's Executive Order 13563 reaffirmed the principles and processes articulated in the Clinton executive order:

> Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation. It must be based on the best available science. It must allow for public participation and an open exchange of ideas. It must promote predictability and reduce uncertainty. It must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends. It must take into account benefits

1. Executive Order 12866, *Federal Register* 58, no. 190 (1993): 51735–44, http://www.whitehouse.gov/sites/default/files/omb/inforeg/eo12866/eo12866_10041993.pdf.

> and costs, both quantitative and qualitative. It must ensure that regulations are accessible, consistent, written in plain language, and easy to understand. It must measure, and seek to improve, the actual results of regulatory requirements.[2]

Regulations, regulatory impact analyses (RIAs), and notices of proposed rulemaking (NPRMs) that reflect the following 10 principles have the best chance of accomplishing these goals. Regulatory agencies are permitted to follow these principles only to the extent that they do not conflict with the laws the agencies implement, so it would also behoove Congress to keep these principles in mind when it writes regulatory legislation.

1. Since regulations impose constraints that govern people's behavior, a sensible regulation should solve a real, widespread problem that could reasonably be addressed by altering constraints. It should not just respond to anecdotes of bad behavior by bad actors.

- The very first principle enunciated in Executive Order 12866 is that "each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new regulatory action) as well as assess the significance of that problem."[3]

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2. Executive Order 13563, *Federal Register* 76, no. 11 (January 21, 2011): 3821–23, http://www.whitehouse.gov/sites/default/files/omb/inforeg/eo12866/eo13563_01182011.pdf.

3. Ibid., sec. 1(b)(1). "Market failure" and "government failure" are both pieces of economic terminology that have specific meanings; they indicate situations when markets or the government fails to produce economically efficient results, for several well-defined reasons. For a highly readable and brief description, see Susan E. Dudley and Jerry Brito, *Regulation: A Primer*, 2nd ed. (Arlington, VA: Mercatus Center at George Mason University and George Washington University Regulatory Studies Center, 2012), 12–20.

- It makes sense that this is the first principle. Before regulating, regulators should ascertain whether they are dealing with a systemic problem that regulation could solve. And understanding the nature of the problem is vital to crafting a solution that will actually work.
- Circular A-4, the Office of Management and Budget (OMB) guidance on regulatory analysis for agencies, elaborates further:

  > If the regulation is designed to correct a significant market failure, you should describe the failure both qualitatively and (where feasible) quantitatively. . . . For other interventions, you should also provide a demonstration of compelling social purpose and the likelihood of effective action. Although intangible rationales do not need to be quantified, the analysis should present and evaluate the strengths and limitations of the relevant arguments for these intangible values.[4]

- Agencies often fail to adequately identify or thoroughly analyze a systemic problem. The Mercatus Center's Regulatory Report Card assesses the extent to which agency RIAs comply with the major principles in Executive Order 12866 and Circular A-4.[5] Assessment of the systemic problem is the regulatory analysis criterion that earned the lowest score on the Regulatory Report Card in both the Bush and Obama administrations.[6]

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4. Office of Management and Budget (OMB), Circular A-4, September 17, 2003, p. 4, available at http://www.whitehouse.gov/omb/circulars_a004_a-4.

5. Regulatory Report Card evaluations of economically significant regulations proposed since 2008 are available at http://mercatus.org/reportcard.

6. Jerry Ellig, Patrick A. McLaughlin, and John F. Morrall III, "Continuity, Change, and Priorities: The Quality and Use of Regulatory Analysis Across US Administrations," *Regulation & Governance* 7, no. 2 (2012): 161, available with registration at http://onlinelibrary.wiley.com/doi/10.1111/j.1748-5991.2012.01149.x/full.

BEST PRACTICE	WORST PRACTICE
An RIA explicitly defines a failure of market institutions, a failure of government institutions, or an overriding social need	A rulemaking simply cites an authorizing statute, providing little or no definition of the problem the rulemaking intends to address
An RIA outlines a theory of cause and effect that explains why the market or government may have failed, or why the social need may be met insufficiently	An RIA or NPRM defines the problem as the absence of a rule
An RIA presents empirical evidence that the problem actually exists and is widespread—not just anecdotal	An RIA or NPRM presents anecdotes of bad behavior, but no evidence of how widespread the behavior is

Note: For examples of actual RIAs that illustrate best and worst practices, see Jerry Ellig and James Broughel, "Regulation: What's the Problem?" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, November 2011), http://mercatus.org/sites/default/files/Ellig_broughel_Regulationwhatstheproblem.pdf.

2. A regulation should be accompanied by proof that it is likely to make life better for citizens in a significant and tangible way.

- Regulators should specify the ultimate outcomes that benefit citizens—not just inputs, activities, or processes. Circular A-4 notes, "In constructing measures of 'effectiveness,' final outcomes, such as lives saved or life-years saved, are preferred to measures of intermediate results, such as tons of pollution reduced, crashes avoided, or cases of disease avoided."[7]
- Circular A-4 further instructs agencies, "Explain how the actions required by the rule are linked to the expected benefits. For example, indicate how additional safety equipment will reduce safety risks."[8]
- Good intentions are not proof that a regulation will achieve the desired results. Executive Order 12866 states,

7. OMB, Circular A-4, p. 12.

8. Ibid., 2.

"Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation."[9] In other words, regulation requires evidence, not just assertions.

- In the Mercatus Center's Regulatory Report Card, agencies receive a better score for analyzing outcomes than for other aspects of regulatory analysis. Nevertheless, the average score for analysis of outcomes is just 3.2 out of 5 possible points for regulations proposed in 2008–2012.[10]

BEST PRACTICE	WORST PRACTICE
An RIA and NPRM define the intended results as outcomes that clearly improve citizens' quality of life	An RIA or NPRM defines the goal as activities (e.g., adoption of a rule, improved enforcement of an existing rule or law) or outputs (e.g., more enforcement actions, reduced emissions) without identifying the proposed regulation's ultimate effect on people's lives
An RIA offers a theory of cause and effect, consistent with established economic and scientific theories, that shows how the regulation could produce the desired outcomes	An RIA offers no theory of cause and effect showing how the regulation could produce the desired outcomes, or the theory is incoherent, or it is self-contradictory
An RIA presents empirical evidence that each step of the theory is likely to be correct, instilling confidence that the regulation is likely to produce the desired outcomes	An RIA simply assumes the regulation will produce the intended outcomes without providing any evidence to support this assumption; it regards good intentions as sufficient to produce good results

Note: For an example of an RIA that illustrates both some of the best and some of the worst practices, see the discussion of the Occupational Safety and Health Administration's rule on cranes and derricks in Jerry Ellig and Patrick A. McLaughlin, "The Quality and Use of Regulatory Analysis in 2008," Risk Analysis *32, no. 5 (May 2012): 7–8.*

9. Executive Order 12866, sec. 1(b)(7).

10. Jerry Ellig, "Improving Regulatory Impact Analysis through Process Reform," testimony before the Joint Economic Committee, June 26, 2013, p. 4.

3. Regulators should define how they will know the problem is "solved" and no additional regulation is necessary.

- Presidents periodically require agencies to develop plans for retrospective review of existing regulations.[11]
- The Government Accountability Office and independent scholars have found that few agencies engage in genuine retrospective analysis of regulations—that is, evaluations to ascertain the actual benefits and costs of regulations after they have been implemented.[12]
- Agencies could greatly facilitate this kind of retrospective review by clearly explaining, when a regulation is implemented, what counts as "success." When will the problem be considered solved? When will the proposed regulation no longer be necessary, or when will no additional regulation be necessary?
- In the Mercatus Center's Regulatory Report Card, two of the criteria for which agencies earn the lowest scores are assessing whether they have articulated goals and measures to gauge the results of the regulation and indicating what data they will use to evaluate the regulation's results after it is adopted.[13]

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11. Executive Order 12044, *Federal Register* 43 (March 24, 1978), sec. 4, http://www.presidency.ucsb.edu/ws/index.php?pid=30539; Executive Order 12291, *Federal Register* 46 (February 17, 1981), sec. 3i, http://www.archives.gov/federal-register/codification/executive-order/12291.html; Executive Order 12866, sec. 5; Executive Order 13563, sec. 1.

12. U.S. Government Accountability Office, "Re-examining Regulations: Opportunities Exist to Improve Effectiveness and Transparency of Retrospective Reviews," Report GAO-07-791 (2007); Randall Lutter, "The Role of Retrospective Analysis and Review in Regulatory Policy" (Working Paper No. 12-14, Mercatus Center at George Mason University, Arlington, VA, April 2012), http://mercatus.org/sites/default/files/Lutter_Retrospective_v1-2.pdf.

13. Ellig, "Improving Regulatory Impact Analysis," 4.

BEST PRACTICE	WORST PRACTICE
An RIA clearly indicates the size of the problem, and the benefit calculations show how much of the problem the regulation is likely to solve	An RIA repeats the same statistics on the size of the problem that were used to justify other regulations aimed at the same problem, suggesting that the agency never updated its assessment of the problem to reflect the effects of other regulations
An RIA or NPRM specifies a baseline against which the agency will measure benefits and costs in the future and indicates what results will be considered a "success" or a "failure"	An agency commits to no goals or measures for the regulation
An NPRM clearly indicates that the agency will assess the benefits and costs of the regulation at some reasonable time after it is implemented	An agency does not commit to any evaluation of the regulation's effects after it is implemented
An RIA or NPRM indicates what data the agency has access to or will commit to gather for this assessment	The data in the RIA are so sparse that it is not even clear how the agency could project the benefits or costs, much less assess them after the regulation is implemented

4. Regulators should consider alternatives to regulation and alternative forms of regulation.

- Executive Order 12866 indicates that agencies should consider a variety of alternative solutions to the problem identified, including performance standards, economic incentives, provision of information, modification of existing regulations or laws, and not regulating.[14]
- Circular A-4 provides a broader list of alternatives, such as fees, bonds, insurance, changes in liability rules, definition or redefinition of property rights, and information provision or disclosure.[15] It also directs

14. Executive Order 12866, secs. 1(a), 1(b)(2), 1(b)(3), 1(b)(8).

15. OMB, Circular A-4, pp. 8–9.

agencies to consider alternatives outside the scope of current law, in order to inform congressional deliberations under the Congressional Review Act.[16]

- Regulatory scholars suggest an even broader range of alternatives that can be effective in some situations, such as agencies requiring firms to analyze and plan for potential hazards or risks, or firms voluntarily adopting standards at the behest of customers or suppliers.[17]
- In reality, agencies rarely consider innovative alternatives. One agency economist notes, "We do what we always do, just trotting out the same old thing. That's why we don't come up with better regulations; we just come up with the same regulations in different areas."[18]

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16. Ibid., 17.

17. Cary Coglianese and David Lazer, "Management-Based Regulation: Prescribing Private Management to Achieve Public Goals," *Law & Society Review* 37, no. 4 (December 2003): 691–730; Aseem Prakash and Matthew Potoski, "Racing to the Bottom? Trade, Environmental Governance, and ISO 14001," *American Journal of Political Science* 50, no. 2 (April 2006): 350–64.

18. Richard Williams, "The Influence of Regulatory Economists in Federal Health and Safety Agencies" (Working Paper No. 08-15, Mercatus Center at George Mason University, Arlington, VA, July 2008), 6, http://mercatus.org/sites/default/files/publication/WP0815_Regulatory%20Economists.pdf.

BEST PRACTICE	WORST PRACTICE
Regulators consider alternatives to federal regulation, such as information provision, liability through the legal system, state regulation, or the possibility that the evolving marketplace will solve the problem	An RIA and NPRM fail to consider alternatives to federal regulation
Regulators consider a wide variety of alternative regulatory approaches	An RIA or NPRM offers alternatives that merely tweak the favored regulatory approach
An RIA comprehensively assesses the benefits and costs of a wide variety of alternative solutions	An RIA or NPRM offers a cursory discussion of alternatives without appearing to seriously consider them

Note: For examples from actual Regulatory Impact Analyses of best and worst practices in the analysis of alternatives, see Jerry Ellig and James Broughel, "Regulatory Alternatives: Best and Worst Practices" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, February 2012), http://mercatus.org/sites/default/files/RegulatoryAlternativesElligBroughel2-21-12.pdf.

5. The regulatory alternative selected should provide the "biggest bang for the buck."

- Executive Order 12866 directs agencies to "select those approaches that maximize net benefits . . . unless a statute requires another regulatory approach"[19] and "propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs."[20]
- Agencies are explicitly permitted to consider unquantified benefits or costs, as well as other values that are neither benefits nor costs, including "equity, human dignity, fairness, and distributive impacts."[21]

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19. Executive Order 12866, sec. 1(a).

20. Ibid., sec. 1(b)(6).

21. Executive Order 13563, sec. 1(c).

- During 2008–2012, agencies chose the alternative that maximized net benefits or explained why they chose another option for just 33 percent of proposed, economically significant prescriptive regulations.[22]
- Analysis of values other than benefits and costs is particularly sparse. For example, in the first round of regulations implementing the Patient Protection and Affordable Care Act, the RIAs characterized various results of the regulations as improvements in "equity" without ever defining equity or explaining how the regulation improved it.[23]

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22. The percentage is calculated from the Mercatus Center's Regulatory Report Card data, available at http://mercatus.org/reportcard. These are the prescriptive regulations that received a score of 4 or 5 points (out of a possible 5) on the question whether the agency chose the alternative that maximized net benefits or explained its reasons for choosing another alternative. A total of 36 out of 108 prescriptive regulations received a score of 4 or 5 in 2008–2012. A "prescriptive" regulation is a regulation that imposes mandates or prohibitions.

23. Christopher J. Conover and Jerry Ellig, "Beware the Rush to Presumption, Part A: Material Omissions in Regulatory Analyses for the Affordable Care Act's Interim Final Rules" (Working Paper No. 12-01, Mercatus Center at George Mason University, Arlington, VA, January 2012), 21–25, http://mercatus.org/sites/default/files/publication/Beware_the_Rush_to_Presumption_PartA_ConoverEllig.pdf.

BEST PRACTICE	WORST PRACTICE
An RIA comprehensively assesses the benefits and costs of a wide variety of alternative solutions	An RIA offers a cursory discussion of alternatives that do not appear to be seriously considered or merely tweak the selected regulatory approach
An agency selects the alternative that maximizes net benefits, OR	An RIA is so incomplete that the net benefits of alternatives are unclear
If the agency does not select the alternative that maximizes net benefits, it presents a clear, evidence-based explanation of other factors that motivated its decision	An NPRM cites unquantified benefits or costs as a motivation for the decision without presenting evidence that these benefits or costs are real and that the regulation will affect them
If values other than benefits or costs (such as equity) motivated the decision, the agency clearly defines those values and presents evidence that the regulation will substantially advance those values	An NPRM merely asserts that the regulation is justified because it advances a value that is only vaguely defined, and the agency presents no evidence that the regulation will in fact advance that value

Note: For examples from actual regulations of best and worst practices in the analysis of alternatives, see Jerry Ellig and James Broughel, "How Well Do Federal Agencies Use Regulatory Impact Analysis?" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, July 2013), http://mercatus.org/sites/default/files/Ellig_FedAgenciesRIA_MOP_071513.pdf.

6. Regulation should respect consumers' freedom of choice.

- Executive Order 12866 rightly focuses regulatory agencies' attention on remedying failures of market or government institutions that allow people to harm each other, rather than trying to correct every "mistake" fallible individuals might make that harms themselves.[24] The government is more likely to be able to remedy institutional failures than to change fundamentally people's preferences or decision-making methods. Experimental evidence shows that market institutions often produce sensible results even when individuals appear to be behaving

24. Executive Order 12866, sec. 1(b)(1).

irrationally.[25] Focusing on institutions also helps regulators avoid a tempting analytical error: when people appear to be making "irrational" decisions, they may be doing so because they see some source of value that the regulatory analyst did not think to include in the analysis.

- When individual irrationality is proffered as a justification for regulation, there is no reason not to apply the same evidence-based standard of analysis that applies to other claims of market or government failure. The agency should have actual empirical evidence of irrational consumer decisions based on a study of consumer behavior in the market that would be affected by the regulation, not just speculation, analogies, or anecdotes.
- Executive Order 12866 also specifies that a regulation should be no more restrictive than necessary to correct the problem the agency identified. It directs each agency to consider a wide variety of alternatives (including economic incentives and information provision),[26] "design its regulations in the most cost-effective manner to achieve the regulatory objective,"[27] and "tailor its regulations to impose the least burden on society."[28]
- Nevertheless, many significant regulations assume, without rigorous evidence, that individuals—and sometimes businesses—make the "wrong" decisions because they have "irrational" preferences. Most of the benefits ascribed to energy-efficiency and fuel-efficiency standards, for example, stem from the assumption that for many people, the value of future cost savings from

25. Vernon L. Smith, "The Contrast Between Economics and Psychology," *Journal of Political Economy* 99, no. 4 (August 1991): 877–97.

26. Executive Order 12866, sec. 1(b)(3).

27. Ibid., sec. 1(b)(5).

28. Ibid., sec. 1(b)(11).

reduced energy usage is lower than the regulatory agency's analysts think is rational. The RIAs have not tested an alternative, equally plausible explanation: that consumer decisions reflect some aspect of quality that the analyst has not taken into account. The bulk of the estimated benefits for these regulations come from correcting these "irrational" choices, not from reduced pollution.[29]

- Other regulations limit consumer choice in ways that are broader than necessary to fix the genuine problem. If consumers lack information or process it incorrectly, the appropriate remedy is not to ban products or services, but rather to make the relevant information available or provide it in ways that are more understandable. As Circular A-4 notes, "A regulatory measure to improve the availability of information, particularly about the concealed characteristics of products, provides consumers a greater choice than a mandatory product standard or ban."[30]

29. See Ted Gayer and W. Kip Viscusi, "Energy Regulations: Protecting 'Irrational' Consumers from Themselves?" (Research Summary, Mercatus Center at George Mason University, Arlington, VA, August 1, 2012), http://mercatus.org/sites/default/files/Energy-Regulations-Protecting-Irrational-Consumers-From-Themselves.pdf; and Michael L. Marlow and Sherzod Abdukadirov, "Fat Chance: An Analysis of Anti-obesity Efforts" (Working Paper No. 12-10, Mercatus Center at George Mason University, Arlington, VA, March 2012), http://mercatus.org/sites/default/files/publication/Fat_Chance_MarlowAbdukadirov_WP1210_0.pdf.

30. OMB, Circular A-4, p. 9.

BEST PRACTICE	WORST PRACTICE
The benefits claimed in an RIA stem from the correction of genuine institutional failures, not merely the correction of consumers' "irrational" decisions	Most of a regulation's claimed benefits stem from the fact that the agency assumes with little or no evidence that people have the "wrong" preferences
The agency regulates to protect consumers only if consumers are vulnerable to monopoly, are poorly informed, or make decisions that impose significant costs on third parties	The regulation overrides consumers' freedom of choice by mandating or banning a product, service, or feature, even though consumers are reasonably well informed and experience all or almost all the benefits and costs of their decisions
The RIA or NPRM supports claims that consumers lack information or process it incorrectly by empirical research on the market that would be affected by the regulation	The RIA or NPRM theorizes that consumers lack information or process information incorrectly, but provides no empirical evidence that this is true
The regulation imposes a remedy that is no more restrictive than necessary to correct a well-documented problem; for example, it corrects consumers' lack of information by improving consumer information	The regulation imposes a remedy that is much more restrictive than necessary to fix an identified failure of private markets; for example, it mandates or bans a product because consumers lack adequate information

7. Regulation should be technologically neutral.

- Regulation should focus on establishing performance goals that create tangible results for the public—not picking the means by which businesses, states, local governments, or individuals have to achieve those results.
- Executive Order 12866 reflects this concern: "Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt."[31]

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31. Executive Order 12866, sec. 1(b)(8).

- It also instructs agencies to consider the alternative of providing economic incentives for desired behavior, such as user fees or marketable permits.[32]
- But actual regulatory policy often picks winners and losers by favoring some technologies over others. Federal spectrum policy, for example, has for decades favored certain technologies over others (such as broadcast over broadband), instead of merely preventing signal interference and requiring all users of spectrum to bid for it so that spectrum can be allocated to the uses consumers value most highly.[33]

BEST PRACTICE	WORST PRACTICE
A regulation establishes an objective rather than mandating the method of compliance	A regulation requires a particular method of compliance
The objective is proven to produce significant public benefits or prevent significant public harm	An agency defines its regulatory objective as compliance, without any link to benefits for the public or with a link between compliance and benefits that is speculative
All potential users of a federally managed resource have the opportunity to bid for its use, regardless of their technologies or business models	Regulators plan the development of technologies or business models and allocate federal resources to carry out their vision

8. Regulation should be competitively neutral.

- Regulation should focus on creating tangible benefits for the public—not on singling out particular competitors to be winners or losers.

32. Ibid., sec. 1(b)(3).

33. Thomas W. Hazlett, "Liberalizing US Spectrum Allocation," *Telecommunications Policy* 27 (2003): 485–99.

- The emphasis in Executive Order 12866 on performance objectives and economic incentives[34] helps facilitate regulation that is competitively neutral as well as technologically neutral.
- The analysis of effects on small businesses required under the Regulatory Flexibility Act reflects a concern that regulatory burdens could disproportionately disadvantage small businesses, to the benefit of their larger competitors.
- Well-known economic research demonstrates how regulation can entrench some businesses at the expense of competitors and consumers.[35] The most obvious examples were the government-enforced cartels in the transportation and securities industries, which were largely dismantled by a bipartisan congressional coalition in the late 1970s.[36] But even well-intentioned social regulation can harm consumers by shielding some firms in an industry from competition.[37]
- The debate over public safety communications provides a striking example. More than a decade after 9/11, the FCC still has not managed to enable construction of a public safety communications network that would allow all first responders to communicate with each other. The reason is that the FCC tried to create a single monopoly provider governed by a politically appointed committee,

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34. Executive Order 12866, secs. 1(b)(8) and 1(b)(3).

35. For a summary of relevant economic research, see Matthew Mitchell, "The Pathology of Privilege: The Economic Consequences of Government Favoritism" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, July 9, 2012), http://mercatus.org/sites/default/files/The_Pathology_of_Privilege-Final_2.pdf.

36. Clifford Winston, "Economic Deregulation: Day of Reckoning for Microeconomists," *Journal of Economic Literature* 31 (September 1993): 1263–89.

37. Bruce Yandle, "Bootleggers and Baptists: The Education of a Regulatory Economist," *Regulation* 7 (May/June 1983): 12–16.

instead of simply auctioning public safety spectrum to competing providers and requiring that their networks be interoperable.[38]

BEST PRACTICE	WORST PRACTICE
Regulators avoid imposing price controls or quotas in competitive markets and avoid creating barriers to entry that inhibit new competition	A regulation explicitly bars new firms from entering a market and/or enforces cartels
A regulation establishes an objective, but leaves all competitors free to find ways of meeting the objective	Regulators try to design or engineer the creation of a new firm or industry
An RIA documents costs to consumers that arise when a regulation creates market power, and regulators take these costs into account when they make decisions	Regulators ignore costs to consumers that arise when a regulation creates market power

9. Regulation should be based on the best available evidence, not merely on assumptions, good intentions, or wishes.

- Executive Order 12866 directs agencies to base their decisions on "the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation."[39]
- Regulatory analysis is about understanding reality as it is, not as regulators wish it to be. To provide an accurate understanding of reality, a good regulatory analysis must start with facts and evidence, not arbitrary assumptions.

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38. Jerry Brito, "Sending Out an SOS: Public Safety Communications Interoperability as a Collective Action Problem," *Federal Communications Law Journal* 59, no. 3 (March 2007): 457–92, http://mercatus.org/uploadedFiles/Mercatus/Publications/Sending%20Out%20an%20S.O.S.pdf.

39. Executive Order 12866, sec. 1(b)(7).

- Nevertheless, many authors of regulations and decision makers believe that economists and other regulatory analysts can construct an analysis justifying any decision by "making assumptions" plucked from thin air. One former FDA economist elaborates:

  > When FDA was promulgating the seafood Hazard Analysis Critical Control Points (HACCP) regulation, it was obvious to both epidemiologists and economists from the beginning that there would be very few benefits. . . . Later on, when it became apparent that the costs were higher than benefits by about 10 to 1, the pressure was put on me as the chief economist to change the numbers. At one point, on a Friday, I was told not to bother coming back to work if I could not agree to change the benefits and costs.
  >
  > After the initial estimates showed very few benefits, the dictated solution from senior managers was to allow two scientists (one retiring and another from a completely different agency who was unfamiliar with the details of the rule) to "estimate" that 50 percent of all illnesses caused by seafood would decrease following imposition of the rule—an estimate that has not come true.[40]

- Regulatory Report Card data show that for 108 prescriptive regulations proposed in 2008–2012, 34 percent failed to document at least some data sources, and 33 percent cited no research supporting the models or assumptions used in the analysis.[41]

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40. Williams, "Influence of Regulatory Economists," 10.

41. These are regulations that scored 2 or fewer points (out of a possible 5) on questions related to documentation of data and documentation of models and assumptions. Percentages are calculated from data available at http://mercatus.org/reportcard.

BEST PRACTICE	WORST PRACTICE
An RIA bases input values that provide a starting point for calculations of benefits, costs, etc. on peer-reviewed publications or other credible research	An RIA merely assumes input values or bases them on "agency estimates" with no further documentation
An RIA employs theories of cause and effect that are coherent, logical, and substantiated by empirical research	An RIA simply assumes that benefits, costs, or a problem exists, without any supporting evidence
An NPRM's justification for the regulation is consistent with findings in the RIA	An NPRM makes statements about the problem, benefits, or costs that contradict findings in the RIA

10. Regulation should acknowledge uncertainty.

- Many of the facts in a regulatory analysis are not known with certainty; there is a greater or lesser chance that they are true. Similarly, input values used to estimate benefits or costs are not known with certainty, but often fall within some plausible range. An accurate RIA accounts for these uncertainties by calculating ranges of possible results and informing readers about the likelihood of different results.
- Omitting this information misinforms decision makers about what is really known and not known. If, for example, the upper-bound cost estimate for a regulation exceeds the lower-bound benefit estimate, decision makers might make a different decision than they would if they were just given the two most likely numbers for benefits and costs. Alternatively, if decision makers know there is a great deal of uncertainty about the likely outcomes, they might decide to gather more information before making the decision.
- Circular A-4 contains detailed guidance on how regulatory agencies should deal with uncertainty. RIAs

should acknowledge statistical variability, incomplete knowledge, and the extent to which the results of the analysis change when input values change. For rules involving more than $1 billion in annual economic effects, the agency must prepare a formal, quantitative analysis of uncertainty that shows the probability of different outcomes.[42]

- Nevertheless, Regulatory Report Card data indicate that RIAs often engage in little or no analysis of uncertainty. For prescriptive regulations proposed in 2008–2012, 58 percent had little or no analysis of uncertainty about the systemic problem, 23 percent had little or no analysis of uncertainty about benefits, and 34 percent had little or no analysis of uncertainty about costs.[43]

BEST PRACTICE	WORST PRACTICE
An RIA identifies a systemic problem, presents evidence that the problem exists and is significant, and assesses the likelihood that the problem exists and is significant	An RIA and NPRM assume the problem the regulation seeks to solve exists with certainty, but provides no evidence of its existence or significance
An RIA presents cost and benefit figures as ranges of possible results	An RIA presents cost and benefit figures as single numbers, implying that each number is "the" correct answer
An RIA provides evidence about the likelihood of each possible result	An RIA does not consider the likelihood of each possible result
An RIA cites empirical research that justifies the input values used to assess the range and likelihood of different results	An RIA makes arbitrary assumptions about the input values used to assess the range and likelihood of different results

42. OMB, Circular A-4, pp. 38–42.

43. These are regulations that scored 0 points or 1 point (out of a possible 5) on the three Regulatory Report Card questions about uncertainty analysis. Percentages are calculated from data available at http://mercatus.org/reportcard.

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