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**An Analysis of the 2008 Government Report
On the Costs and Benefits of Federal Regulations**

Robert W. Hahn*

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*Mr. Hahn is executive director of the Reg-Markets Center and a senior fellow at the American Enterprise Institute. He is also a senior visiting fellow at the Smith School at Oxford. Mr. Hahn would like to thank Adam Schmidt for research assistance. The views expressed in this paper reflect solely those of the author and do not necessarily reflect those of the institutions with which he is affiliated. It was prepared at the request of OMB to provide a peer review.



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Executive Director

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Executive Summary

This paper critically reviews the draft of the Office of Management and Budget's 2008 report on the benefits and costs of federal regulations. The draft report is similar to previous reports.

I offer seven recommendations—six for OMB and one for Congress—that would help hold lawmakers and regulators more accountable for the regulations they produce. My recommendations focus on getting the regulatory agencies to produce better analysis, making that analysis more transparent and readily available, and making the regulatory process itself more transparent.

I recommend that OMB:

- examine the extent to which regulations maximize net benefits;
- include a scorecard showing the number and percentage of final regulations that pass a benefit-cost test based on factors that can be quantified and monetized;
- request that all agencies report on the extent to which they comply with OMB's guidelines for conducting regulatory analysis using a regulatory scorecard for individual RIAs;
- provide guidelines for assessing the effectiveness of antiterrorism regulations;
- include a discussion of the costs and benefits of antitrust activities in the annual report; and
- facilitate the use of prediction markets for public and private purposes by issuing a prompt letter to the Commodity Futures Trading Commission and encouraging Congress to lower regulatory barriers to starting these markets.

I also recommend that Congress require *all* agencies to comply with OMB's guidelines for conducting regulatory analysis.

An Analysis of the 2008 Government Report On the Costs and Benefits of Federal Regulations

Robert W. Hahn

1. Introduction

The Office of Management and Budget (OMB) has recently released a draft of its 2008 report to Congress on the costs and benefits of federal regulations.¹ The law requires that OMB submit a report to Congress that provides estimates of the costs and benefits of federal regulations. The report is also supposed to make recommendations for reform, provide guidelines for agencies to standardize benefit and cost estimates, and assess the impact of federal regulation on state and local government, small business, wages and economic growth.²

The 2008 OMB draft report discusses major rules issued by independent regulatory agencies.³ OMB uses an abbreviated scorecard to note the percentage of independent agency rules that include some information on costs or benefits. While the discussion is limited, I applaud OMB's efforts to summarize available information on the independent agencies. In this analysis, I argue that OMB has failed to address the most serious problems with agencies' regulatory analyses. I offer seven recommendations—six for OMB and one for Congress—that would help address these core issues.

I recommend that OMB: examine the extent to which regulations maximize net benefits; include a scorecard showing the number and percentage of final regulations that pass a benefit-cost test; request that all agencies report on the extent to which they comply with OMB's guidelines for conducting regulatory analysis; provide guidelines for assessing the effectiveness of antiterrorism regulations; include a discussion of the costs and benefits of antitrust activities in its annual report; and facilitate the use of prediction markets for public and private purposes by

¹ OMB (2008).

² The FY2001 Treasury and General Government Appropriations Act, § 624 (a) requires OMB to submit an "accounting statement and associated report" containing: "(1) an estimate of the total annual costs and benefits (including quantifiable and non-quantifiable effects) of Federal rules and paperwork, to the extent feasible: (A) in the aggregate; (B) by agency and agency program; and (C) by major rule; (2) an analysis of impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth; and (3) recommendations for reform." Section 624 (c) also requires OMB to "issue guidelines to agencies to standardize: (1) measures of costs and benefits; and (2) the format of accounting statements."

³ Chapter IV of the draft report summarizes agency compliance with the Unfunded Mandates Reform Act (UMRA). We do not review this section here.

issuing a prompt letter to the Commodity Futures Trading Commission aimed at lowering regulatory barriers to starting these markets.

Requiring agencies to comply with OMB's guidelines has been unsuccessful. The guidelines have little value if they are not seriously enforced. I recommend that Congress require *all* agencies to comply with OMB's guidelines for conducting regulatory analysis.⁴

Section 2 offers recommendations for improving OMB's report and regulatory oversight function. Section 3 presents my conclusions.

2. Recommendations

While OMB has addressed a few key issues in this report, there is significant room for improvement. I offer seven recommendations aimed at improving the OMB report and the regulatory process.

Recommendation 1: OMB should add a discussion in its report that assesses the extent to which the regulations under consideration maximize net benefits.

To assess the extent to which the regulations maximize net benefits, the agencies should identify the alternative or alternatives that maximize expected net benefits. They should then quantify those net benefits to the extent reasonable. In addition, they should also explain why those alternatives are not selected in cases where they are not selected.

Specifically, I believe that it is important to identify efficient alternatives even when they are not legally permissible. Executive Order 12291 requires this, while Executive Order 12866 does not preclude it.⁵ Agencies should also make an argument for why they expect benefits to exceed costs (even qualitatively). This could be especially important when many key benefits or costs cannot be monetized. In general, I think it would be useful to present some measure of expected net benefits. This calculation could reflect the best estimate of benefits minus the best estimate of costs. A calculation of expected net benefits forces movement in the direction of

⁴ All agencies include both executive and independent agencies.

⁵ According to Reagan (1981), §3(d)4, each Regulatory Impact Analysis shall contain the following information: "A description of alternative approaches that could substantially achieve the same regulatory goal at lower cost, together with an analysis of this potential benefit and costs and a brief explanation of the legal reasons why such alternatives, if proposed, could not be adopted." See also Clinton (1993).

quantifying other benefits. Otherwise, there will always be a tendency to hide behind the lack of full information on costs or benefits.

I am not implying that the expected net benefit calculation will always be very useful by itself, but it will create an incentive to get better information. In the meantime, the agency can point out that the estimate should not be used on its own, and discuss important unquantified costs or benefits that entered into its decision or recommendation.

Recommendation 2: OMB should include a scorecard showing the number and percentage of final regulations that pass or fail a benefit-cost test based strictly on factors that can be quantified and expressed in monetary terms.⁶

A problem with current OMB reports and some regulatory impact assessments is that they do not provide estimates of expected costs, expected benefits or expected net benefits. In most cases, if ranges for cost estimates and benefit estimates can be provided, it is not unreasonable to assume that some measures of expected costs, benefits and net benefits can be provided. OMB should encourage agencies to provide such estimates along with ranges.

OMB could provide valuable information by including a scorecard that estimated the economic efficiency of regulation over time and across individual regulations.⁷ One approach is to assess the fraction of regulations that would pass a strict benefit-cost test. A strict benefit-cost test is based on the *quantified* benefit and cost estimates and *excludes* unquantified benefits and costs.⁸ To the extent possible, this test should include all costs and benefits that can be quantified.

Table 1 provides an overview of the fraction of regulations that pass a strict benefit-cost test based on data contained in this year's and previous years' reports. I consider 141 economically significant regulations for which OMB provides some information on costs and benefits between October 1, 1992 and September 30, 2007.⁹ I exclude from the calculation those

⁶ This scorecard should include all final, economically significant regulations summarized in the aggregate. The time frame should be at least the past decade.

⁷ See, e.g., Hahn and Dudley (2004). See also GAO (1998).

⁸ For a discussion of how a cost-benefit analysis can incorporate unquantified costs and benefits, see Arrow et al. (1996).

⁹ All of the regulations are non-transfer rules. Of the 39 major regulations implemented between October 1, 2006 and September 30, 2007, 21 were transfer rules. For a description of the difference between transfer and non-transfer rules, see OMB (2008): "The budget outlays associated with these rules are "transfers" from taxpayers to program beneficiaries, on behalf of program beneficiaries, or fees collected from program beneficiaries; therefore, consistent with past Reports, OMB refers to these rules as "transfer" rules." If included in the analysis, transfer rules would not

regulations for which agencies did not present estimates for both costs and benefits.¹⁰ For the period October 1, 2006 to September 30, 2007 I exclude six regulations from the calculation because they have net benefits of zero, and therefore, neither pass nor fail.

OMB did not always provide a single estimate for costs or benefits, but often presented a range. I find this approach problematic and believe OMB and the regulatory agencies should present a “best” estimate. Where OMB presented a range, I treated the midpoint as the best estimate, primarily for illustrative purposes. When OMB provided a single estimate, I considered it to be the best estimate.

The table shows that 80 percent (113 of 141) of the major non-transfer rules with quantified costs and benefits would pass a benefit-cost test using estimates based on OMB’s numbers. The other 20 percent would fail.¹¹

One obvious question is how sensitive these results are to changes in assumptions about estimates. I explore this question by doing a bounding analysis. When OMB provided a range, I used the maximum benefits and the minimum costs to generate my “best-case” and “worst-case” scenarios. The best-case scenario couples the maximum benefit estimate with the minimum cost estimate. The worst-case scenario does just the opposite.

Table 1 shows that, under the best case scenario, 122 of the 141 regulations have positive net benefits. Under the worst-case scenario, only 87 out of 141 pass a strict benefit-cost test. Aggregate net benefits under all scenarios are positive and significant, a finding that is consistent with earlier work that examined the government’s numbers over a much longer time period.¹²

pass a benefit-cost test because they add equal amounts to benefits and costs. For a discussion of the differences between transfer rules and non-transfer rules as they apply to regulatory analysis, see Hahn (1999). See also Eric Posner (2003) for a useful suggestion on how to improve agency analyses of transfer rules.

¹⁰ For the most recent period, October 1, 2006 to September 30, 2007, agencies did not present estimates for costs and benefits for six of the 18 “social” regulations. Four of these six were homeland security regulations for which benefits are difficult to quantify and monetize.

¹¹ In this case, six regulations,” had estimated benefits of zero or no estimate was offered by the agency. Four of these regulations were related to homeland security and discussed in Recommendation 5 in this comment. We excluded these six regulations from the analysis since they neither pass nor fail.

¹² See, for example, Hahn (2000) showing that aggregate net benefits are positive under a wide range of assumptions for discount rate and value of a statistical life. His database includes 106 final regulations promulgated between 1983 and 1996. This aggregation does not take into account that different regulations may be implemented in different years. We doubt that this would change the basic qualitative result about aggregate net benefits being positive.

The exclusion of several regulations with unquantified benefits may remove many regulations with negative net benefits.¹³

OMB's numbers suggest that a significant fraction of rules over the period from October 1, 1992 to September 30, 2007 may not yield positive net benefits, at least when considering those benefits and costs that can be quantified and expressed in monetary terms. A more detailed breakdown of those rules is provided in Table 2, which shows rules that pass or fail a benefit-cost test under various assumptions and their net benefits. If rules do not pass a benefit-cost test under reasonable assumptions, or at least those deemed reasonable by a regulatory agency, both the agency writing the regulation and the OMB should explain why they were still implemented. If the numbers strongly suggest that a rule fails a benefit-cost test, OMB should consider arguing for its reform or elimination.¹⁴

Once it presents basic information on whether a regulation passes or fails a benefit-cost test based on point estimates, OMB should consider refining its analysis by getting better information on the *distribution* of benefits, costs and net benefits. This is consistent with its guidelines to agencies that ask for such information on distributions.¹⁵ Agencies often do not provide best estimates and ranges for benefits and costs, as illustrated in this year's draft report. Furthermore, I am aware of only a few RIAs in which an agency has provided a probability distribution for benefits or costs.¹⁶ With a distribution of net benefits for each regulation, OMB could present a more nuanced probabilistic analysis of the net benefits of regulation individually. At a minimum, however, OMB should require that the agencies provide information on a point

¹³ Hahn (2005) suggests that including such rules in a scorecard could motivate agencies to search for better estimates on benefits and costs.

¹⁴ In these situations, OMB should consider unquantifiable benefits and costs as well. When suggesting the elimination or reform of a regulation in its report to Congress, OMB should explain why it expects the overall benefits not to exceed the costs.

¹⁵ OMB (2003b), at 41: "Whenever possible, you should use appropriate statistical techniques to determine a probability distribution of the relevant outcomes. For rules that exceed the \$1 billion annual threshold, a formal quantitative analysis of uncertainty is required. For rules with annual benefits and/or costs in the range from \$100 million to \$1 billion, you should seek to use more rigorous approaches with higher consequence rules." See also OMB (2003b), at 18: "When benefit and cost estimates are uncertain, you should report benefit and cost estimates (including benefits of risk reductions) that reflect the full probability distribution of potential consequences. Where possible, present probability distributions of benefits and costs and include the upper and lower bound estimates as complements to central tendency and other estimates."

¹⁶ For example, the National Ambient Air Quality Standards (NAAQS) for Particulate Matter RIA has a distribution of benefits and costs with a mean and standard deviation. It uses a normal distribution to estimate benefits. See Environmental Protection Agency (1997), National Ambient Air Quality Standards for Particulate Matter Regulatory Impact Analysis. This RIA is available on the AEI-Brookings Joint Center's website, at <http://www.aei-brookings.com/publications/index.php?tab=topics&topicid=68>. We are not aware of any Regulatory Impact Analyses that have a probability distribution for net benefits.

estimate and range for net benefits. Moreover, it should provide guidance on how to determine the range.¹⁷

One example of a problem where there is a great deal of uncertainty is the reduction of fine particles. If the Environmental Protection Agency's benefit numbers associated with a reduction in fine particles are reasonable, then we may be under-regulating. However, as OMB has noted, there is a great deal of uncertainty surrounding these numbers. It would be useful for OMB to suggest ways research might reduce this uncertainty over time, perhaps by funding studies that assess the extent of the actual effect on humans that are better designed, or which use better data. I think that it is appropriate for OMB to work with EPA, as it is doing, to better the techniques used to quantify the level of uncertainty in estimates of benefits.¹⁸

Recommendation 3: OMB should request that *all* agencies report on the extent to which they comply with OMB's guidelines for conducting regulatory analysis using a regulatory scorecard.

OMB could start by asking each agency to fill out a standardized scorecard for each Regulatory Impact Analysis (RIA). One scorecard, shown in Figure 1, has been proposed by Hahn and Sunstein (2002).¹⁹ OMB could then ask agencies to aggregate the information from those individual scorecards. OMB should assemble this information and present it in a user-friendly format, similar to what they do in Appendix C of this year's draft report. I would urge OMB to expand this idea so it applies to all regulatory agencies. It should also add some other key issues to its scorecard, such as whether an agency identified and considered alternatives. Summary information on individual RIAs is potentially useful for individuals interested in a particular regulation. Aggregate information is potentially useful for determining if there are systematic strengths and weaknesses in how RIAs are done in each agency.²⁰

In the past, I have recommended that OMB issue a scorecard identifying the extent to which regulatory analyses comply with its guidelines for conducting regulatory analysis. OMB,

¹⁷ There may be large uncertainties in some of these distributions, but we prefer that they be made explicit where possible. See, e.g., Arrow et al. (1996): "Available methods and data generally imply ranges of possible values of costs and benefits, not single numbers. Benefit-cost analysis contributes most to intelligent decision making when those ranges are clearly described along with best estimates...If the decisionmaker wishes to introduce a 'margin of safety' into his decision, he should do so explicitly."

¹⁸ National Research Council (2002).

¹⁹ See Table 4, Hahn and Sunstein (2002) at 1519. I have added a request that the agency report a range for net benefits in this version.

²⁰ See Hahn and Dudley (2007).

however, has not yet implemented this recommendation. OMB did issue a summary report of major rules issued by independent agencies, an effort I applaud.²¹

Recommendation 4: Congress should require that all agencies comply with OMB's guidelines for conducting regulatory analysis.

I believe that it is important that regulatory analyses adhere to certain economic and scientific standards, such as quantifying and monetizing costs and benefits to the extent possible, using the discount rates prescribed by OMB, considering alternatives, and providing both a best estimate and range of estimates for net benefits. The guidelines issued by OMB were designed to help to achieve that goal. Unfortunately, the guidelines do not appear to have been enforced very well.²² Furthermore, they do not currently apply to independent regulatory agencies.²³ OMB does not even follow these guidelines in the sense that it often fails to provide best estimates and ranges, presumably because agencies have failed to do so.

There are two policy options for having all relevant agencies comply with specific guidelines for doing economic analysis of regulations—one is to pass a law and the other is to issue a new executive order. Congress could pass a law requiring that the proposed regulations move forward only if OMB determines that an agencies' Regulatory Impact Analyses meet certain guidelines.²⁴ Congress should also stipulate that if OMB determines that an agency's Regulatory Impact Analysis does not comply with those guidelines, OMB must return the proposed regulation to the agency until the analysis complies.²⁵

A second alternative is for the President to draft a new executive order requiring *all* agencies to comply with the guidelines.²⁶ It is not immediately clear whether the President could

²¹ See OMB (2008), at 16.

²² See, for example, Figure 5 in Hahn et al. (2000), at 875, suggesting that agencies often do not quantify the impacts of alternatives in RIAs.

²³ See OMB (2003a). OMB Circular A-4, providing guidelines to Federal agencies on the development of regulatory analysis, is addressed only to executive agencies. We recommend that, at the very least, OMB should address this circular to the heads of independent agencies as well.

²⁴ Congress could, for example, insert a provision in the Regulatory-Right-to-Know Act specifying that both independent and executive agencies are required to submit the costs and benefits of their regulations to OMB and comply with OMB's guidelines.

²⁵ Time-sensitive regulations could be given an exception. In addition, if an agency explains why complying with a guideline is not possible, and OMB agrees with the agency's assessment, OMB should allow the rule to move forward.

²⁶ A new Executive Order would be easier to implement, but a law passed by Congress would be more effective. For a more in-depth discussion of promoting agency compliance with OMB's regulatory guidelines, see Hahn and Sunstein (2002). Hahn and Sunstein propose a new executive order that would require agencies to comply with

have legal authority over independent agencies. The President, however, is entitled to remove members of independent agencies for “inefficiency, neglect of duty, or malfeasance in office.”²⁷ At a minimum, the President can require documents to ensure that agency officials are acting efficiently and in a way that does not show neglect. Therefore, requiring the independent agencies to comply with OMB’s guidelines for conducting regulatory analysis seems to have a firm legal basis. Moreover, if agencies implement regulations without showing that the benefits exceed the costs, they might be thought to be acting “inefficiently,” and in a way that shows neglect of duty.²⁸

A new executive order could help ensure that both executive and independent agencies followed OMB’s guidelines prior to implementing a regulation.²⁹ That order could have the same enforcement mechanism as I suggested for the law.³⁰

Recommendation 5: OMB should provide guidelines for how the Department of Homeland Security should quantify and monetize the benefits of antiterrorism regulations.

OMB should ask the agencies to analyze the costs and benefits of current antiterrorism regulations. Homeland Security regulations represented four of the six major rules implemented in the past year that did not have quantified and monetized estimates of both benefits and costs.³¹ OMB could develop ways to measure the regulations’ effectiveness.³² While determining precise

OMB’s guidelines for regulatory analysis. Currently, OMB lacks the statutory authority to enforce its guidelines. On the other hand, the President has the authority, via executive order, to issue binding principles. For a general discussion, see Kagan (2001). If the President has that authority, he also has the authority to delegate that power to the Director of OMB, at least if he does so expressly via executive order.

²⁷ See, e.g., 15 U.S.C. §41; 29 U.S.C. § 661 (b).

²⁸ See Hahn and Sunstein (2002), which argues that presidential oversight of independent agencies is both legal and critical to ensuring rationality in regulation.

²⁹ An executive order requiring that independent agencies follow OMB’s guidelines may violate the separation of powers between the executive and legislative branches. For a closer look at this problem, see Hahn and Sunstein (2002). For an analysis of the constitutional concerns raised by an agency with “complete independence from the President,” see Lessig and Sunstein (1994).

³⁰ While we believe that a law passed by Congress would be more effective at requiring all the agencies to comply with OMB’s guidelines, an executive order might be easier to obtain because it does not require approval of both houses of Congress. The executive order should also state the consequences to the agencies of not complying with OMB’s guidelines. For example, if an agency’s regulatory analysis does not comply with OMB’s guidelines, OMB should have the right to return this regulation to the agency until the agency complies.

³¹ See OMB (2008), at 7: “Four of the rules for which we were not able to present estimates of both costs and benefits were rules designed to improve homeland security. The benefits of improved security are very difficult to quantify and monetize; however, the Department of Homeland Security did estimate the cost of all of these rules. The Department of the Interior did not estimate costs for two other final rules setting conditions for migratory bird hunting.”

³² For some insights into measuring the effectiveness of a policy to counter terrorism, see Richard Posner (2004).

quantitative estimates of benefits is often difficult, some quantitative or qualitative description may be possible. Even if estimates are not precise, some measure of whether the regulations will likely improve things would be useful.

At a minimum, agencies should try to bound estimates in a way that policymakers can determine if they are making reasonable investments. For example, OMB estimates that society is paying \$3.4 billion to \$6.9 billion per year for the 14 major homeland security measures finalized since the Department of Homeland Security was created.³³ How many lives might be saved if we had spent this money differently? And would as many lives be likely to be saved with these measures?

An attempt at measuring the net benefits of terrorism-related regulations will help policy makers and the public to compare the merits of different regulatory options and assess whether these regulations are meeting expectations.³⁴ If regulations involving homeland security do not have any plausible benefit estimates attached, there is a very real danger of ineffective and inefficient regulation because the agency will not be held accountable.

Recommendation 6: OMB should include a discussion of the costs and benefits of antitrust activities in its annual report.

Antitrust policy can affect pricing, output, and entry decisions of firms, and therefore can be important for consumers and producers.³⁵ Yet, OMB does not consider antitrust policy in tallying the costs and benefits of federal regulation.³⁶ Hahn and Hird (1991), by contrast, regard antitrust as regulation.³⁷ The costs and benefits of antitrust actions are coming under increasing

³³ See OMB (2008), at 11.

³⁴ For a discussion of how the government can effectively deal with the risk of terrorism, see O’Hanlon et al. (2002).

³⁵ See Shenefield and Stelzer (2001), at 8 for the origins and objectives of antitrust policy: “Where competition fails, government has two choices. It can either protect the consumer from market abuse by directly regulating the firm with monopoly power or restore the vigor of competition through antitrust enforcement that prevents competitors from conspiring to fix prices or individual firms from dominating markets.”

³⁶ See OMB (1997) Appendix, Summary of Public Comments: “Some commenters, on the other hand, thought economic regulation included anti-trust enforcement...we did not make it clear that these types of activities, which may be viewed by some to be regulating economic activity, were not intended to be included in the “economic regulation” category because they do not directly regulate firms’ pricing, output, or entry decisions. For example, antitrust enforcement by the Department of Justice and the Federal Trade Commission is not generally done through regulation.”

³⁷ See Hahn and Hird (1991): “Economic regulation, including antitrust, may produce social benefits when natural monopolies are regulated to stimulate competition or when firms are prevented from anticompetitive collusion and mergers. In a dynamic economy, however, the dollar amount of such economic efficiency benefits are thought to be small.”

scrutiny by academics.³⁸ The Federal Trade Commission (FTC) and Department of Justice (DOJ) currently publish some data on the economic impacts of antitrust investigations. For example, they provide a few aggregate estimates of consumer savings from antitrust enforcement in their annual performance reports to Congress.³⁹

The FTC also publishes an excellent series of reports and working papers, including several that estimate the economic impacts of various antitrust cases.⁴⁰ The DOJ, in contrast, does not appear to do retrospective analyses of antitrust activities on a regular basis or publish them in one central location.⁴¹ Although the FTC and DOJ's websites and annual performance reports contain valuable information about antitrust activities, the agencies do not provide a good summary of the estimated costs and benefits. OMB should request that the FTC and DOJ provide it with annual cost and benefit estimates of selected antitrust activities where available.⁴² OMB should then summarize this data in its regulatory report. In addition, it may be useful for OMB to publish guidelines for analyzing the costs and benefits of antitrust activities, similar to OMB's Guidelines for the Conduct of Regulatory Analysis.⁴³

I believe that providing more cost and benefit information about FTC and DOJ's antitrust activities in the OMB Report will increase the transparency of antitrust policy and could increase economic efficiency.⁴⁴ It could also encourage the FTC and DOJ to continue to document their investigations and do retrospective analyses.

³⁸ The area is controversial. For a pessimistic view of the impact of some antitrust actions, see Crandall and Winston (2003). For more optimistic views, see Baker (2003) and Werden (2003).

³⁹ See Federal Trade Commission Performance Report, Fiscal Year 2003 under the Government Performance and Results Act (2004), available at <http://www.ftc.gov/opp/gpra/prfy2003.pdf>. See also Department of Justice's FY 2003 Performance and Accountability Report, under the Government Performance and Results Act (2004), available at <http://www.usdoj.gov/ag/annualreports/ar2003/p2sg2.htm>.

⁴⁰ See the FTC's working papers and reports from the Bureau of Economics, available at <http://www.ftc.gov/be/econwork.htm>. Many of the retrospective analyses are not cost-benefit analyses. For example, some address the market share or price changes post-merger or post-enforcement, and do not contain a cost-benefit analysis of the agency's action (or inaction). The Bureau of Economics at the FTC also analyzes consumer protection regulations: See <http://www.ftc.gov/be/>: "The Bureau helps the FTC evaluate the economic impact of its actions. To do so, the Bureau provides economic analysis and support to antitrust and consumer protection investigations and rulemakings."

⁴¹ The Economic Analysis Group (EAG) within the antitrust division of DOJ is responsible for conducting economic analyses of DOJ's antitrust activities. It should follow the Bureau of Economics' model in publishing its analyses in a consolidated place on a website.

⁴² We recognize the challenges in doing retrospective economic analyses for non-merger activities. However, retrospective analyses of mergers are often more easily done.

⁴³ For OMB's Guidelines on the Conduct of Regulatory Analysis, see OMB (2003a).

⁴⁴ If the information proves to be useful, the idea could be extended to other regulatory agencies that deal with antitrust.

By requiring agencies to submit annual cost and benefit estimates to OMB, Congress can help improve agency discipline in documenting information from antitrust investigations. Congress should give the agencies some leeway in the actions they analyze—particularly because of the difficulties in doing such analysis.⁴⁵ Nonetheless, it should suggest that the agency focus on evaluating the impact of major antitrust decisions, including decisions not to block particular mergers.⁴⁶

Recommendation 7: OMB should facilitate the use of prediction markets for public and private purposes by issuing a prompt letter to the Commodity Futures Trading Commission aimed at lowering regulatory barriers to starting these markets. OMB should also consider alerting Congress to the role it could play in stimulating the development of prediction markets by reducing barriers to entry.

A fundamental problem with benefit-cost analysis in assessing new regulations is that it is usually done before the fact. It is *ex ante* as opposed to *ex post*. When doing analyses before the fact, it is difficult to predict the future values of key variables that could be affected by a policy. The analyst may need to forecast, for example, the net benefits of a regulation to reduce arsenic several years before any benefits are realized. I think that prediction markets could be used to estimate parameters that would be directly useful for doing a benefit-cost analysis. Prediction markets are markets for contracts that yield payments based on the outcome of an uncertain future event, such as the impact of an EPA air quality regulation on the incidence of lung cancer twenty years from now. A prediction market allows individuals to purchase contracts, using real money, that yield payments to their owners that depend on the uncertain outcome of a future event.⁴⁷ With the advent of the Internet, prediction markets are becoming more widespread. They are used in a number of contexts ranging from assessing the likelihood that the Federal Reserve will raise interest rates to assessing the odds that a particular presidential candidate will be elected.

⁴⁵ It can sometimes take years to gather the data to do a good study on the likely impacts of a merger.

⁴⁶ Many retrospective analyses address the outcome of agency inaction (i.e., mergers that the agencies did not block, but might have been close to the enforcement threshold).

⁴⁷ For a useful definition of information markets, see Wolfers and Zitzewitz (2004), at 108. “Analytically, these are markets where participants trade in contracts whose payoff depends on unknown future events.” The literature also refers to these markets as “speculative markets” and “betting markets.” For a discussion of speculative markets, see Hanson (2003) (revised), at 6: “Most markets for stocks, bonds, currency, and commodities futures are called *speculative markets* because they allow people to bet on future prices by buying or selling today in the hope of later reversing such trades for a profit.” For a discussion of “betting markets” see Rhode and Strumpf (2004).

But how confident should we be in the results derived from prediction markets? We can be more confident in such results if we introduce prediction markets that allow people to profit from superior knowledge about the future.⁴⁸

If there were a prediction market that suggested that the incidence of cancer would decrease by 10% with a particulate matter regulation, this estimate would in theory incorporate all publicly available information about that regulation's effects.⁴⁹ Moreover, information from the prices in these markets is likely to dominate other forecasts if the prediction markets are designed well.

OMB should consider encouraging regulatory agencies to facilitate the use of prediction markets that could provide information on the costs and benefits of regulation. It should also advise agencies on how to apply prediction markets to determine the economic impacts of regulations. At this point, the benefit-cost estimates derived from prediction markets should supplement, not replace, conventional regulatory analyses.

In order for OMB and the agencies to use prediction markets, they must be allowed to do so. There are, however, several regulatory hurdles to establishing such markets, largely arising from state prohibitions on Internet gambling. The authority for regulating many prediction markets should be shifted from the states to the federal government, and the federal government should implement a clear policy that would make it relatively easy to research and organize prediction markets that would improve economic decisions.⁵⁰

Specifically, I would suggest that OMB ask the CFTC to lower regulatory barriers that impede the development of prediction markets. In addition, OMB should consider alerting Congress to the role it could play in stimulating the development of prediction markets by reducing barriers to entry.⁵¹

⁴⁸ See, e.g., Hanson (2003) (revised). See also Abramowicz (2004).

⁴⁹ When we say the market may "know", "believe" or "suggest," we are referring to the knowledge and beliefs of speculators in the market, which will be reflected in the market price. In what follows, when we ascribe a view to the market, such as "the market expects," we use this as a shorthand.

⁵⁰ For a more in-depth discussion of how to regulate information markets, see Hahn and Tetlock (2006).

⁵¹ See Arrow et al. (2007). This recommendation to Congress could be presented in the final report on the costs and benefits of federal regulations. The Regulatory Right-to-Know Act specifically calls for OMB to include "recommendations for reform." See Section 624 of the Treasury and General Government Appropriations Act of 2001 (Pub. L. 106-554, Sec. 1(a)(3), 31 U.S.C. § 1105 note, (a)3).

4. Conclusion

This analysis critically reviews the draft of the Office of Management and Budget’s tenth report on the benefits and costs of federal regulation. I offer seven recommendations—six for OMB and one for Congress—that would help hold regulators and lawmakers more accountable for the regulations they produce. My recommendations focus on getting the regulatory agencies to produce better analysis, making that analysis more transparent and readily available, and making the regulatory process itself more transparent.

Finally, while I believe that covering new topics can have value, I believe OMB should focus on a few critical components of the report. The most important, in my view, is to obtain accurate assessments of the costs and benefits of major individual federal regulations and viable alternatives to those regulations. With such information, decision makers and interested parties will be in a better position to gauge the effectiveness of the federal regulatory process. Once OMB begins to develop more accurate assessments of the costs and benefits of individual regulations, it may want to consider exploring possible reforms that Congress may want to enact.⁵²

⁵² For example, OMB may want to weigh in on regulatory policies in specific sectors. Possibilities include the regulation of the Internet and the regulation of the electricity sector.

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Figure 1

<u>Regulatory Impact Summary</u>	
<u>I. BACKGROUND ON RULE AND AGENCY</u>	
AGENCY AND DEPARTMENT/OFFICE NAME	
CONTACT PERSON	TELEPHONE NUMBER
TITLE OF THE RULE	
RIN NUMBER	DOCKET NUMBER
TYPE OF RULEMAKING (FINAL/INTERIM/PROPOSED/NOTICE)	TYPE OF RULE (REGULATORY/BUDGET IMPACT)
STATUTORY AUTHORITY FOR THE RULE	RULEMAKING IMPETUS
BRIEF DESCRIPTION OF THE RULE	
<u>II. OVERALL IMPACT</u>	
1. Will the rule have an impact on the economy of \$100 million or more? Yes No 2. Best estimate of the present value of quantifiable benefits of the rule. \$ _____ 3. Best estimate of the present value of quantifiable costs of the rule. ⁵³ \$ _____ 4. Do the quantifiable benefits exceed the quantifiable costs? Yes No 5. Report the dollar year of costs and benefits. _____ 6. Report the discount rate used in the calculations for costs and benefits. _____ 7. If more than one discount rate was used in calculations, please explain why. _____ _____ 8. Discuss level of confidence in the benefit-cost estimates and key uncertainties. Include a range for costs, benefits and net benefits _____ _____ _____ 9. Identify benefits or costs that were not quantified. _____ _____ _____ _____	

⁵³ Costs are defined as costs minus cost savings.

Table 1
Major Rules Passing a Strict Benefit-Cost Test (1992 – 2007)⁵⁴

(n=141)

	Number of rules passing	Percentage passing	Total annualized net benefits ⁵⁵
Best estimate⁵⁶	113	80%	\$449 billion
Best-case scenario⁵⁷	122	87%	\$752 billion
Worst-case scenario⁵⁸	87	62%	\$147 billion

Sources: OMB (2008), OMB (2007), OMB (2006), OMB (2005), OMB (2004), OMB (2003a), OMB (2000).

⁵⁴ This benefit-cost test subtracts quantified costs from quantified benefits. The analysis includes 141 non-transfer rules described in the OMB's reports that were finalized between October 1, 1992 and September 30, 2007.

⁵⁵ Total annualized net benefits are the sum of annualized net benefits for all 141. Annualized net benefits for each regulation equal the annualized benefits of the regulation minus the annualized costs, as reported by the OMB. Numbers are rounded to the nearest billion 2001 dollars. These calculations do not adjust for the fact that regulations are implemented in different years. See, for example, Hahn (2000).

⁵⁶ When the OMB presents a single estimate, we take that as the best estimate. When only a range is provided, we take the mid-point for costs or benefits as the best estimate.

⁵⁷ When a range is provided, this scenario uses the maximum benefits and minimum costs.

⁵⁸ When a range is provided, this scenario uses minimum benefits and maximum costs.

Table 2
Net Benefits of Major Rules (\$2001 M) (1992 - 2007)

Regulation	Year	Agency	Best Estimate	Pass
Clean Air Fine Particle Implementation	06-'07	EPA/Air	85796.5	Yes
Control of Hazardous Air Pollutants from Mobile Sources	06-'07	EPA/Air	2324.5	Yes
Side Impact Protection	06-'07	DOT/NHTSA	171	Yes
Electronic Stability Control	06-'07	DOT/NHTSA	7719.5	Yes
Emergency Mine Evacuation	06-'07	DOL/MSHA	-31	No
Revision of the Form 5500 Series	06-'07	DOL/EBSA	-83	No
Current Good Manufacturing Practice for Blood and Blood Components: Notification of Consignees and Transfusion Recipients Receiving Blood and Blood Components at Increased Risk of Transmitting HIV	06-'07	HHS/FDA	68	Yes
Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Dietary Ingredients and Dietary Supplements	06-'07	HHS/FDA	-145.5	No
Energy Efficiency Standards for Electric Distribution Transformers	06-'07	DOE/EERE	273	Yes
Bovine Spongiform Encephalopathy (BSE); Minimal-Risk Regions and Importation of Commodities	06-'07	USDA/APHIS	108.5	Yes
Prohibition of the Use of Specified Risk Materials for Human Food and Requirements for the Disposition of Non-Ambulatory Disabled Cattle	06-'07	USDA/FSIS	-154	No
National Primary Drinking Water Regulations: Stage 2 Disinfection Byproducts Rule	05-'06	EPA/Water	960.5	Yes
Review of the National Ambient Air Quality Standards (NAAQS) for Particulate Matter	05-'06	EPA/Air	19146.5	Yes
Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	05-'06	EPA/Air	662	Yes
Light Truck Average Fuel Economy Standards, Model Years 08-11	05-'06	DOT/NHTSA	231	Yes
Congestion and Delay Reduction at Chicago O'Hare Int'l Airport	05-'06	DOT/FAA	158.2	Yes
Occupational Exposure to Hexavalent Chromium	05-'06	DOL-OSHA	171.5	Yes
Electronic Prescribing Standards	05-'06	HHS-CMS	250	Yes
Bovine Spongiform Encephalopathy: Minimal Risk Regions and Importation of Commodities	04-'05	USDA-APHIS	16	Yes
Mexican Hass Avocado Import Program	04-'05	USDA-APHIS	61	Yes

Amendments to the Performance Standard for Diagnostic X-Ray Systems and Their Major Components	04-'05	HHS/ FDA	1288	Yes
Immunization Standard for Long Term Care Facilities	04-'05	HHS/ CMS	10994	Yes
Electronic Orders for Schedule I and II Controlled Substance	04-'05	DOJ/ DEA	162	Yes
Hours of Service of Drivers, 2005	04-'05	DOT/FMCSA	254	Yes
Tire Pressure Monitoring Systems	04-'05	DOT/NHTSA	-446	No
Rear Center Lap/Shoulder Belt Requirement--Standard 208	04-'05	DOT/NHTSA	30	Yes
Upgrade of Head Restraints	04-'05	DOT/NHTSA	42	Yes
Clean Air Interstate Rule Formerly Titled: Interstate Air Quality Rule	04-'05	EPA/Air	80053	Yes
Clean Air Visibility Rule	04-'05	EPA/Air	4648	Yes
Clean Air Mercury Rule--Electric Utility Steam Generating Units	04-'05	EPA/Air	-499	No
National Primary Drinking Water Regulations: Long Term 2 Enhanced Surface Water Treatment Rule	04-'05	EPA/Water	918	Yes
Bar Code Label Requirements for Human Drug Products	03-'04	HHS	3700	Yes
Declaring Dietary Supplements	03-'04	HHS	17	Yes
Standard Unique Health Care Provider	03-'04	HHS	56	Yes
Pipeline Integrity Management	03-'04	DOT	-134	No
Reduced Vertical Separation Minimum	03-'04	DOT	260	Yes
Control of Emissions from Nonroad Diesel Engines	03-'04	EPA	31791	Yes
NESHAP Boilers	03-'04	EPA	20357	Yes
NESHAP Plywood	03-'04	EPA	572	Yes
NESHAP Stationary Reciprocating Internal Combustion	03-'04	EPA	318	Yes
National Pollutant Discharge Elimination System	03-'04	EPA	-311	No
Effluent Guidelines and Standards for Meat and Poultry	03-'04	EPA	-44	No
Truck Driver Hours of Service	02-'03	DOT	-628	No
Light Truck CAFÉ for Model Years '05-'07	02-'03	DOT	35	Yes
National Pollutant Discharge Permits	02-'03	EPA	-81	No
Patent Listing Requirements for Generics	02-'03	FDA	216	Yes
Trans Fat Labeling	02-'03	FDA	1517	Yes
Control of Listeria Monocytogenes in Meat and Poultry	02-'03	USDA	81	Yes
Energy Conservation Standards for Central Acs	01-'02	DOE	74	Yes
Tire Pressuring Monitoring Systems	01-'02	DOT	-301	No
Control of Emissions from Nonroad Large Spark Ignition Engines	01-'02	EPA	2842	Yes
Roadless Area Conservation	00-'01	USDA	-184	No
Energy Conservation Standards for Fluorescent Lamps	00-'01	DOE	210	Yes
Energy Conservation Standards for Water Heaters	00-'01	DOE	170	Yes
Energy Conservation Standards for Clothes Washers	00-'01	DOE	1210	Yes
Health Insurance Reform: Standards for Electronic Transactions	00-'01	HHS	2020	Yes
Safe and Sanitary Processing and Importing of Juice	00-'01	HHS	120	Yes
Standards for Privacy of Individually Identifiable Health Information	00-'01	HHS	1020	Yes
Labeling of Shell Eggs	00-'01	HHS	246	Yes
Safety Standards for Steel Erection	00-'01	DOL	89	Yes
Advanced Airbags	00-'01	DOT	-330	No

Identification of Dangerous Levels of Lead	00-'01	EPA	1595	Yes
Arsenic and Clarifications	00-'01	EPA	-37	No
National Emissions Standards for Hazardous Air Pollutants	00-'01	EPA	311	Yes
Heavy-Duty Engine and Vehicle Standards	00-'01	EPA	10600	Yes
2004 and Later Model Year Highway Heavy Duty Engines	00-'01	EPA	6763	Yes
Lead-Based Paint Hazards	99-'00	HUD	40	Yes
Storm Water Discharges Phase II	99-'00	EPA	200	Yes
Tier 2 Motor Vehicle Emission Standards	99-'00	EPA	6350	Yes
Regional Haze	99-'00	EPA	2700	Yes
Handheld Engines	99-'00	EPA	310	Yes
Education of Children with Disabilities	98-'99	Dept. Ed.	249	Yes
Safety and Effectiveness of New Drugs in Pediatric Patients	98-'99	HHS	33	Yes
Over-the-Counter Drug Labeling	98-'99	HHS	58	Yes
Provision of Transplant-Related Data	98-'99	HHS	938	Yes
Powered Industrial Truck Operator	98-'99	DOL	217	Yes
Lighting Devices, Reflectors, and Electrical Equipment	98-'99	DOT	21	Yes
Child Restraint Anchorage Systems/Child Restraint System	98-'99	DOT	0	N/A
Stage 1 Disinfectants/Disinfection Byproducts	98-'99	EPA	1373	Yes
Enhanced Surface Water Treatment	98-'99	EPA	706	Yes
Nitrogen Oxide Emission from New Steam Generators	98-'99	EPA	-16	No
Volatile Organic Compound Emission Standards	98-'99	EPA	155	Yes
Non-Road Diesel Engines	98-'99	EPA	2260	Yes
Regional Transport of Ozone	98-'99	EPA	1243	Yes
New Non-Road Non-Handheld Engines	98-'99	EPA	396	Yes
Environmental Quality Incentives	97-'98	USDA	102	Yes
Organ Procurement and Transplantation Network	97-'98	HHS	271	Yes
Quality Mammography Standards	97-'98	HHS	226	Yes
Respiratory Protection	97-'98	DOL	1723	Yes
Energy Conservation Standards for Refrigerators	97-'98	DOE	531	Yes
Energy Conservation Standards for Room Air Conditioners	97-'98	DOE	68	Yes
Emission Standards for New Locomotives	97-'98	EPA	548	Yes
Emission Standards for New Highway Engines	97-'98	EPA	525	Yes
Pulp and Paper: Effluent Guidelines	97-'98	EPA	-136	No
Pulp and Paper: NESHAP	97-'98	EPA	-62	No
NAAQS Ozone	97-'98	EPA	-2220	No
NAAQS Particulate Matter	97-'98	EPA	20340	Yes
Disposal of PCBs	97-'98	EPA	521	Yes
Conservation Reserve Program	96-'97	USDA	1390	Yes
Hazard Analysis and Critical Control Points	96-'97	USDA	1497	Yes
Food Nutrition Labeling: Small Business Exemption	96-'97	HHS	388	Yes
Restriction on the Sale and Distribution of Tobacco	96-'97	HHS	11605	Yes
Medical Devices: Quality Regulations	96-'97	HHS	237	Yes

Exposure to Methylene Chloride	96-'97	DOL	-23	No
Airbag Depowering	96-'97	DOT	-96	No
Roadway Worker Protection	96-'97	DOT	0	N/A
Accidental Release Prevention	96-'97	EPA	79	Yes
Financial Assurance for Municipal Solid Waste Landfills	96-'97	EPA	124	Yes
Deposit Control Gasoline	96-'97	EPA	96	Yes
Acid Rain Phase II Nox Controls	96-'97	EPA	1158	Yes
Federal Test Procedure Revisions	96-'97	EPA	249	Yes
Voluntary Standards for Light-Duty Vehicles	96-'97	EPA	-28	No
Hazard Analysis and Critical Control Points: Seafood	95-'96	HHS	79	Yes
Head Impact Protection	95-'96	DOT	1266	Yes
Vessel Response Plans	95-'96	DOT	-271	No
Marine Tank Vessel Loading and Petroleum Refining NESHAP	95-'96	EPA	367	Yes
Air Emissions from Municipal Solid Waste Landfills	95-'96	EPA	40	Yes
Municipal Waste Combustors	95-'96	EPA	124	Yes
Double-Hull Standards	94-'95	DOT	-566	No
Stability Control of Medium and Heavy Vehicles During Braking	94-'95	DOT	1401	Yes
Oil and Gas Extraction	94-'95	EPA	47	Yes
Refueling Emissions from Light-Duty Vehicles	94-'95	EPA	431	Yes
Non-Road Compression Ignition Engines	94-'95	EPA	1886	Yes
Bay/Delta Water Quality Standards	94-'95	EPA	-129	No
Deposit Control Gasoline	94-'95	EPA	848	Yes
Occupational Exposure to Asbestos	93-'94	DOL	-356	No
Controlled Substances and Alcohol Use	93-'94	DOL	1425	Yes
Prevention of Prohibited Drug Use in Transit Operations	93-'94	DOT	70	Yes
Phase II Land Disposal Restrictions	93-'94	EPA	-230	No
Phase-out of Ozone-Depleting Chemicals	93-'94	EPA	946	Yes
Reformulated Gasoline	93-'94	EPA	-755	No
Acid Rain Nox, Title IV CAAA	93-'94	EPA	2143	Yes
Hazardous Organic NESHAP	93-'94	EPA	1297	Yes
Non-Road Compression Ignition Engines	93-'94	EPA	2370	Yes
Nutrition Labeling of Meat and Poultry	92-'93	USDA/FSIS	177	Yes
Food Labeling	92-'93	HHS/FDA	1334	Yes
Real Estate Settlement Procedures	92-'93	HUD	160	Yes
Manufactured Housing Wind Standards	92-'93	HUD	40	Yes
Permit Required Confined Spaces	92-'93	DOL/OSHA	290	Yes
Vessel Response Plans	92-'93	DHS/USCG	-286	No
Acid Rain Permits Regulations	92-'93	EPA	77140	Yes
Vehicle Inspection and Maintenance	92-'93	EPA	13	Yes
Evaporative Emissions from Light-Duty and Heavy-Duty Vehicles	92-'93	EPA	542	Yes
Onboard Diagnostic Systems	92-'93	EPA	1837	Yes

Sources: OMB (2008), OMB (2007), OMB (2006), OMB (2005), OMB (2004), OMB (2003a), OMB (2000).

Notes: This analysis consists of 141 non-transfer rules described in OMB's reports that were finalized between October 1, 1992 and September 30, 2007. One period indicates the time frame in which the regulation was implemented. 92-'93 indicates the period between October 1, 1992 and September 30, 1993. 93-'94 indicates the period between October 1, 1993 and September 30, 1994. 94-'95 is the period between October 1, 1994 and March 31, 1995. 95-'96 is the period between April 1, 1995 and March 31, 1996. 96-'97 is the period between April 1, 1996 and March 31, 1997. 97-'98 is the period between April 1, 1997 and March 31, 1998. 98-'99 is the period between April 1, 1998 and March 31, 1999. 99-'00 is the period between April 1, 1999 and March 31, 2000. 00-'01 is the period between April 1, 2000 and September 30, 2001. 01-'02 is the period between October 1, 2001 and September 31, 2002. 02-'03 is the period between October 1, 2002 and September 30, 2003. 03-'04 is the period between October 1, 2003 and September 30, 2004. 04-'05 is the period between October 1, 2004 and September 30, 2005. 05-'06 is the period between October 1, 2005 and September 30, 2006. 06-'07 is the period between October 1, 2006 and September 30, 2007.