Appendix D:

Evaluative Criteria for Compliance: OMB Guidance on Economic Analysis Under Executive Order 12866

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 SUMMARY OF ANALYTIC PRINCIPLES			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Does the analysis allow decision maker to determine whether:			In accordance with the regulatory philosophy and principles provided in Sections 1(a) and (b) and Section 6(a)(3)(C) of Executive Order 12866, an Economic Analysis (EA) of proposed or existing regulations should inform decisionmakers of the consequences of alternative actions. In particular, the [economic analysis] should provide information allowing decisionmakers to determine that: • There is adequate information indicating the need for and consequences of the proposed action; • The potential benefits to society justify the potential costs, recognizing that not all benefits and costs can be described in monetary or even in quantitative terms, unless a statute requires another regulatory approach; • The proposed action will maximize net benefits to society (including potential economic, environmental, public health and safety, and other advantages; distributional impacts; and equity), unless a statute requires another regulatory approach; • Where a statute requires a specific regulatory approach, the proposed action will be the most cost-effective, including reliance on performance objectives to the extent feasible; • Agency decisions are based on the best reasonably obtainable scientific, technical, economic, and other information. [Introduction]
S1	a	There is adequate information indicating the need for and consequences of the proposed action?	
S1	b	The potential benefits to society justify the potential costs?	
S1	c	The proposed action will maximize net benefits to society (unless the statute requires another regulatory approach)?	
S1	d	The proposed action will be the most cost-effective where a statute requires another regulatory approach?	
S1	e	Agency decisions are based on the best reasonably obtainable scientific, technical, economic, and other information?	

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Does the economic analysis display a level of rigor appropriate to:			Analysis of the risks, benefits, and costs associated with regulation inevitably also involves uncertainties and requires informed professional judgments. There should be balance between thoroughness of analysis and practical limits to the agency's capacity to carry out analysis. The amount of analysis (whether scientific, statistical, or economic) that a particular issue requires depends on the need for more thorough analysis because of the importance and complexity of the issue, the need for expedition, the nature of the statutory language and the extent of statutory discretion, and the sensitivity of net benefits to the choice of regulatory alternatives. In particular, a less detailed or intensive analysis of the entire range of regulatory options is needed when regulatory options are limited by statute. Even in these cases, however, agencies should provide some analysis of other regulatory options that satisfy the philosophy and principles of the Executive Order, in order to provide decisionmakers with information for judging the consequences of the statutory constraints. Whenever an agency has questions about such issues as the appropriate analytical techniques to use or the alternatives that should be considered in developing an [economic analysis] under the Executive Order, it should consult with the Office of Management and Budget as early in the analysis stage as possible. [Introduction.]
S2	a	The importance and complexity of the issue?	
S2	b	The need to make an expeditious decision?	
S2	c	The nature of the statutory language and the extent of regulatory discretion?	
S2	d	The sensitivity of net benefits to the choice of regulatory alternatives?	
Exercise of administrative discretion:			
S3		Where regulatory discretion is limited by statute, does the economic analysis satisfy the philosophy and principles of Executive Order 12866?	

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Full disclosure and transparency:			Analysis of the risks, benefits, and costs associated with regulation must be guided by the principles of full disclosure and transparency. Data, models, inferences, and assumptions should be identified and evaluated explicitly, together with adequate justifications of choices made, and assessments of the effects of these choices on the analysis. The existence of plausible alternative models or assumptions, and their implications, should be identified. In the absence of adequate valid data, properly identified assumptions are necessary for conducting an assessment. [Introduction.]
S4	a	Does the economic analysis identify and evaluate explicitly data, models, inferences and assumptions?	
S4	b	Assess the effects of these choices on the analysis?	
S4	c	Identify and evaluate the effects of plausible alternative models and assumptions on the analysis?	
Related analytic requirements:			The [economic analysis] that the agency prepares should also satisfy the requirements of the "Unfunded Mandates Reform Act of 1995" (P.L. 104-4). Title II of this statute (Section 201) directs agencies "unless otherwise prohibited by law [to] assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector..." [Introduction.]
S5	a	Does the economic analysis satisfy the analytical requirements of the Unfunded Mandates Reform Act?	
S5	b	Does the economic analysis satisfy the analytical requirements of the Regulatory Flexibility Act?	The "Regulatory Flexibility Act" (P.L. 96-354) requires Federal agencies to give special consideration to the impact of regulation on small businesses. The Act specifies that a regulatory flexibility analysis must be prepared if a screening analysis indicates that a regulation will have a significant impact on a substantial number of small entities. The [economic analysis] that the agency prepares should incorporate the regulatory flexibility analysis, as appropriate. [Introduction.]

<table>
<tr><th colspan="4">ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
I. STATEMENT OF NEED</th></tr>
<tr><th>QX#</th><th colspan="2">EVALUATIVE CRITERION</th><th>OMB ECONOMIC ANALYSIS GUIDANCE CITATION</th></tr>
<tr><td>N1</td><td colspan="2">Does the economic analysis discuss whether the problem constitutes a significant market failure?</td><td rowspan="5"><u>In order to establish the need for the proposed action, the analysis should discuss whether the problem constitutes a significant market failure</u>. [§I]
* * *
<u>The analysis should determine whether there exists a market failure that is likely to be significant</u>. In particular, <u>the analysis should distinguish actual market failures from potential market failures that can be resolved at relatively low cost by market participants</u>. Examples of the latter include spillover effects that affected parties can effectively internalize by negotiation, and problems resulting from information asymmetries that can be effectively resolved by the affected parties through vertical integration. <u>Once a significant market failure has been identified, the analysis should show how adequately the regulatory alternatives to be considered address the specified market failure</u>.
The major types of market failure include: externality, natural monopoly, market power, and inadequate or asymmetric information.
1. Externality. An externality occurs when one party's actions impose uncompensated benefits or costs on another…
2. Natural Monopoly. A natural monopoly exists where a market can be served at lowest cost only if production is limited to a single producer…
3. Market Power. Firms exercise market power when they reduce output below what a competitive industry would sell…
4. Inadequate or Asymmetric Information. Market failures may also result from inadequate or asymmetric information. The appropriate level of information is not necessarily perfect or full information because information, like other goods, is costly… [§I.A.]</td></tr>
<tr><td colspan="3">If yes:</td></tr>
<tr><td>N2</td><td>a</td><td>What is the nature of this market failure?</td></tr>
<tr><td>N2</td><td>b</td><td>Does the economic analysis distinguish between significant market failures and potential market failures that can be resolved at relatively low cost by market participants?</td></tr>
<tr><td>N2</td><td>c</td><td>Does the economic analysis show how adequately the regulatory alternatives to be considered address the specified market failure?</td></tr>
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N2	d	Does the analysis examine and evaluate non-regulatory alternatives, such as common law, antitrust enforcement, workers' compensation systems, subsidies, or economic incentives?	Even where a market failure exists, there may be no need for Federal regulatory intervention if other means of dealing with the market failure would resolve the problem adequately or better than the proposed Federal regulation would. These alternatives may include the judicial system, antitrust enforcement, and workers' compensation systems. Other nonregulatory alternatives could include, for example, subsidizing actions to achieve a desired outcome; such subsidies may be more efficient than rigid mandates. Similarly, a fee or charge, such as an effluent discharge fee, may be a preferable alternative to banning or restricting a product or action. Legislative measures that make use of economic incentives, such as changes in insurance provisions, should be considered where feasible. Modifications to existing regulations should be considered if those regulations have created or contributed to a problem that the new regulation is intended to correct, and if such changes can achieve the goal more efficiently or effectively. [§I.B.]

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N2	e	Does the economic analysis examine and evaluate State or local regulation as an alternative to Federal regulation?	Another important factor to consider in assessing the appropriateness of a Federal regulation is regulation at the State or local level, if such an option is available. In some cases, the nature of the market failure may itself suggest the most appropriate governmental level of regulation. For example, problems that spill across State lines (such as acid rain whose precursors are transported widely in the atmosphere) are probably best controlled by Federal regulation, while more localized problems may be more efficiently addressed locally. Where regulation at the Federal level appears appropriate, for example to address interstate commerce issues, the analysis should attempt to determine whether the burdens on interstate commerce arising from different State and local regulations, including the compliance costs imposed on national firms, are greater than the potential advantages of diversity, such as improved performance from competition among governmental units in serving taxpayers and citizens and local political choice. [§I.B.]
N2	f	Does the analysis attempt to determine whether the burdens on interstate commerce arising from different State and local regulations are greater than the potential advantages of diversity among the States?	

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If no:			If the problem does not constitute a market failure, the analysis should provide an alternative demonstration of compelling public need, such as improving governmental processes or addressing distributional concerns. If the proposed action is a result of a statutory or judicial directive, that should be so stated. [§I] * * * Once a significant market failure has been identified, the analysis should show how adequately the regulatory alternatives to be considered address the specified market failure. [§I.A]
N2	g	Does the economic analysis provide an alternative demonstration of compelling public need?	
N2	h	Is the proposed action solely the result of a statutory or judicial directive?	

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<tr><td>N3</td><td colspan="2">Does the economic analysis examine the potential for unintentional harmful effects?</td><td rowspan="4">Government action may have unintentional harmful effects on the efficiency of market outcomes. For this reason there should be a presumption against the need for regulatory actions that, on conceptual grounds, are not expected to generate net benefits, except in special circumstances. In light of actual experience, a particularly demanding burden of proof is required to demonstrate the need for any of the following types of regulations:

• price controls in competitive markets;

• production or sales quotas in competitive markets;

• mandatory uniform quality standards for goods or services, unless they have hidden safety hazards or other defects or involve externalities and the problem cannot be adequately dealt with by voluntary standards or information disclosing the hazard to potential buyers or users; or

• controls on entry into employment or production, except (a) where indispensable to protect health and safety (e.g., FAA tests for commercial pilots) or (b) to manage the use of common property resources (e.g., fisheries, airwaves, Federal lands, and offshore areas). [§I.A.]</td></tr>
<tr><td>N4</td><td colspan="2">Does the regulation entail any one of the specified types of actions that, on conceptual grounds, are not expected to generate net benefits except in special circumstances?

If yes:</td></tr>
<tr><td>N5</td><td>a</td><td>Does the economic analysis satisfy the particularly demanding burden of proof to demonstrate need?</td></tr>
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ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 II. IDENTIFICATION AND ANALYSIS OF REASONABLE REGULATORY AND NON-REGULATORY ALTERNATIVES		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
I1	Does the economic analysis demonstrate that the agency considered the most important alternative approaches and provided the agency's reasoning for selecting the proposed regulatory action over such alternatives?	The [economic analysis] should show that the agency has considered the most important alternative approaches to the problem and provide the agency's reasoning for selecting the proposed regulatory action over such alternatives. Ordinarily, it will be possible to eliminate some alternatives by a preliminary analysis, leaving a manageable number of alternatives to be evaluated according to the principles of the Executive Order. The number and choice of alternatives to be selected for detailed benefit-cost analysis is a matter of judgment. There must be some balance between thoroughness of analysis and practical limits to the agency's capacity to carry out analysis. With this qualifier in mind, the agency should nevertheless explore modifications of some or all of a regulation's attributes or provisions to identify appropriate alternatives. [§II.]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 II. IDENTIFICATION AND ANALYSIS OF REASONABLE REGULATORY AND NON-REGULATORY ALTERNATIVES		
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I2	Does the economic analysis explore performance standards as an alternative to engineering or design standards?	Alternative regulatory actions that should be explored include the following: * * * More Performance-Oriented Standards for Health, Safety, and Environmental Regulations. Performance standards are generally to be preferred to engineering or design standards because performance standards provide the regulated parties the flexibility to achieve the regulatory objective in a more cost-effective way. It is therefore misleading and inappropriate to characterize a standard as a performance standard if it is set so that there is only one feasible way to meet it; as a practical matter, such a standard is a design standard. In general, a performance standard should be preferred wherever that performance can be measured or reasonably imputed. Performance standards should be applied with a scope appropriate to the problem the regulation seeks to address. For example, to create the greatest opportunities for the regulated parties to achieve cost savings while meeting the regulatory objective, compliance with air emission standards can be allowed on a plant-wide, firm-wide, or region-wide basis rather than vent by vent, provided this does not produce unacceptable air quality outcomes (such as "hot spots" from local pollution concentration). [§II.1]

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I3	Does the economic analysis explore different requirements for different segments of the regulated population?	Alternative regulatory actions that should be explored include the following: Different Requirements for Different Segments of the Regulated Population. There might be different requirements established for large and small firms, for example. If such a differentiation is made, it should be based on perceptible differences in the costs of compliance or in the benefits to be expected from compliance. It is not efficient to place a heavier burden on one segment of the regulated population solely on the grounds that it is better able to afford the higher cost; this has the potential to load on the most productive sectors of the economy costs that are disproportionate to the damages they create. [§II.2]
I4	Does the economic analysis explore different levels of stringency?	Alternative regulatory actions that should be explored include the following: * * * Alternative Levels of Stringency. In general, both the benefits and costs associated with a regulation will increase with the level of stringency (although marginal costs generally increase with stringency, whereas marginal benefits decrease). It is important to consider alternative levels of stringency to better understand the relationship between stringency and the size and distribution of benefits and costs among different groups. [§II.3]

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I5	Does the economic analysis explore alternative effective dates of compliance?	Alternative regulatory actions that should be explored include the following: * * * Alternative Effective Dates of Compliance. The timing of a regulation may also have an important effect on its net benefits. For example, costs of a regulation may vary substantially with different compliance dates for an industry that requires a year or more to plan its production runs efficiently. In this instance, a regulation that provides sufficient lead time is likely to achieve its goals at a much lower overall cost than a regulation that is effective immediately, although the benefits also could be lower. [§II.4]
I6	Does the economic analysis explore alternative methods of ensuring compliance?	Alternative regulatory actions that should be explored include the following: * * * Alternative Methods of Ensuring Compliance. Compliance alternatives for Federal, state, or local enforcement include on-site inspection, periodic reporting, and compliance penalties structured to provide the most appropriate incentives. When alternative monitoring and reporting methods vary in their costs and benefits, promising alternatives should be considered in identifying the regulatory alternative that maximizes net benefits. For example, in some circumstances random monitoring will be less expensive and nearly as effective as continuous monitoring in achieving compliance. [§II.5]

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I7	Does the economic analysis explore alternatives relying on the production or dissemination of information?	Alternative regulatory actions that should be explored include the following: * * * Informational Measures. Measures to improve the availability of information include government establishment of a standardized testing and rating system (the use of which could be made mandatory or left voluntary), mandatory disclosure requirements (e.g., by advertising, labeling, or enclosures), and government provision of information (e.g., by government publications, telephone hotlines, or public interest broadcast announcements). If intervention is necessary to address a market failure arising from inadequate or asymmetric information, informational remedies will often be the preferred approaches. As an alternative to a mandatory product standard or ban, a regulatory measure to improve the availability of information (particularly about the concealed characteristics of products) gives consumers a greater choice. Incentives for information dissemination also are provided by features of product liability law that reduce liability or damages for firms that have provided consumers with notice. Except for prohibiting indisputably false statements (whose banning can be presumed beneficial), specific informational measures should be evaluated in terms of their benefits and costs. The key to analyzing informational measures is a comparison of the actions of the affected parties with the information provided in the baseline (including any information displaced by mandated disclosures) and the actions of affected parties with the information requirements being imposed. Some effects of informational measures can easily be overlooked. For example, the costs of a mandatory disclosure requirement for a consumer product include not only the cost of gathering and communicating the required information, but also the loss of net benefits of any information displaced by the mandated information, the effect of providing too much information that is ignored or information that is misinterpreted, and inefficiencies arising from the incentive that mandatory disclosure may give to overinvest in a particular characteristic of a product or service.

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		Where information on the benefits and costs of alternative informational measures is insufficient to provide a clear choice between them, as will often be the case, the least intrusive informational alternative, sufficient to accomplish the regulatory objective, should be considered. For example, to correct an informational market failure it may be sufficient for government to establish a standardized testing and rating system without mandating its use, because competing firms that score well according to the system will have ample incentive to publicize the fact. [§II.6]
I8	Does the economic analysis explore market-oriented approaches such as fees, subsidies, penalties, marketable permits or offsets, changes in liabilities or property rights, bonds, insurance or warranties?	Alternative regulatory actions that should be explored include the following: * * * More Market-Oriented Approaches. In general, alternatives that provide for more market-oriented approaches, with the use of economic incentives replacing command-and-control requirements, are more cost-effective and should be explored. Market-oriented alternatives that may be considered include fees, subsidies, penalties, marketable permits or offsets, changes in liabilities or property rights (including policies that alter the incentive of insurers and insured parties), and required bonds, insurance or warranties. (In many instances, implementing these alternatives will require legislation.) [§II.7]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 II. IDENTIFICATION AND ANALYSIS OF REASONABLE REGULATORY AND NON-REGULATORY ALTERNATIVES			
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I9		Does the statute authorizing the regulation establish specific minimum requirements, as well as give the agency the discretion to adopt more stringent standards? If yes:	Alternative regulatory actions that should be explored include the following: * * * Considering Specific Statutory Requirements. When a statute establishes a specific regulatory requirement and the agency has discretion to adopt a more stringent standard, the agency should examine the benefits and costs of the specific statutory requirement as well as the more stringent alternative and present information that justifies the more stringent alternative if that is what the agency proposes. [§II.8]
I9	a	What are these specific statutory requirements?	
I9	b	Does the economic analysis examine the benefits and costs of these specific statutory requirements?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 II. IDENTIFICATION AND ANALYSIS OF REASONABLE REGULATORY AND NON-REGULATORY ALTERNATIVES				
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I9	c		Has the agency selected a regulatory alternative more stringent than these specific statutory requirements? If yes:	
I9	d	1	Does the economic analysis examine the benefits and costs of more stringent alternatives, including the alternative selected?	
I9	d	2	Does the economic analysis present information justifying the selection of a more stringent alternative?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 II. IDENTIFICATION AND ANALYSIS OF REASONABLE REGULATORY AND NON-REGULATORY ALTERNATIVES			
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I10	a	Where significant population variability exists, does the economic analysis include as an alternative the option of refined targeting?	When uncertainty is due largely to observable variability in populations or natural conditions, one policy alternative may be to refine targeting, that is, to differentiate policies across key subgroups. Analysis of such policies should consider the incremental benefits of improved efficiency from targeting, any incremental costs of monitoring and enforcement, and changes in the distribution of benefits and costs. [§III.A.4.a]
I10	b	Does the economic analysis include estimates of the incremental benefits and costs of such an alternative?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:

1. USE OF A VALID AND CONSISTENT BASELINE

QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
B1	Does the economic analysis measure both benefits and costs against the same baseline?	The benefits and costs of each alternative must be measured against a baseline. The baseline should be the best assessment of the way the world would look absent the proposed regulation. That assessment may consider a wide range of factors, including the likely evolution of the market, likely changes in exogenous factors affecting benefits and costs, likely changes in regulations promulgated by the agency or other government entities, and the likely degree of compliance by regulated entities with other regulations. Often it may be reasonable for the agency to forecast that the world absent the regulation will resemble the present. For the review of an existing regulation, the baseline should be no change in existing regulation; this baseline can then be compared against reasonable alternatives. When more than one baseline appears reasonable or the baseline is very uncertain, and when the estimated benefits and costs of proposed rules are likely to vary significantly with the baseline selected, the agency may choose to measure benefits and costs against multiple alternative baselines as a form of sensitivity analysis. For example, the agency may choose to conduct a sensitivity analysis involving the consequences for benefits and costs of different assumptions about likely regulation by other governmental entities, or the degree of compliance with the agency's own existing rules. In every case, an agency must measure both benefits and costs against the identical baseline. The agency should also provide an explanation of the plausibility of the alternative baselines used in the sensitivity analysis. [§III.A.1]
B2	Does the economic analysis measure both benefits and costs against a valid baseline?	
B3	Does the economic analysis use a baseline that represents the best assessment of the way the world would look absent the regulation?	
Where the correct baseline is not obvious:		
B4 a	Are benefits and costs measured against multiple alternative baselines as a form of sensitivity analysis? If yes:	
B4 a 1	Is there a plausible explanation for these alternative baselines?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 2. EVALUATION OF ALTERNATIVES			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
A1		Does the economic analysis identify alternatives that meet the criteria of Executive Order 12866?	Agencies should identify (with an appropriate level of analysis) alternatives that meet the criteria of the Executive Order as summarized at the beginning of this document, as well as identifying statutory requirements that affect the selection of a regulatory approach. If legal constraints prevent the selection of a regulatory action that best satisfies the philosophy and principles of the Order, these constraints should be identified and explained, and their opportunity cost should be estimated. [§III.A.2]
A2		Does the economic analysis identify statutory requirements that affect how the agency must choose among regulatory alternatives?	
If statutory constraints prevent the selection of a regulatory alternative that best satisfies the philosophy and principles of Executive Order 12866:			
A3	a	Does the economic analysis identify and explain these statutory constraints?	
A3	b	Does the economic analysis provide an estimate of the opportunity cost of these constraints?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 2. EVALUATION OF ALTERNATIVES			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
A4	Does the economic analysis include as an alternative the option of deferring action pending further study? If yes:		Uncertainty may arise from a variety of fundamentally different sources, including lack of data, variability in populations or natural conditions, limitations in fundamental scientific knowledge (both social and natural) resulting in lack of knowledge about key relationships, or fundamental unpredictability of various phenomena. The nature of these different sources may suggest different approaches. For example, when uncertainty is due to lack of information, one policy alternative may be to defer action pending further study. One factor that may help determine whether further study is justifiable as a policy alternative is an evaluation of the potential benefits of the information relative to the resources needed to acquire it and the potential costs of delaying action. [§III.A.4.a]
A4	a	Does the economic analysis estimate the potential benefits of delay pending the collection of new information?	
A4	b	Does the economic analysis estimate the potential costs of delay pending the collection of new information?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 2. EVALUATION OF ALTERNATIVES			
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A5	Does the economic analysis report benefit-cost ratios or internal rates of return? If yes		<u>In choosing among mutually exclusive alternatives, benefit-cost ratios should be used with care</u>. Selecting the alternative with the highest benefit-cost ratio may not identify the best alternative, since an alternative with a lower benefit-cost ratio than another may have higher net benefits. <u>In addition, the internal rate of return should not be used as a criterion for choosing among mutually exclusive alternatives</u>. It is often difficult to compute and is problematical when multiple rates exist. [§III.A.2]
A6	a	Are these indicators used correctly?	
A7	a	Does the economic analysis evaluate distinct, major regulatory provisions separately?	<u>If the proposed regulation is composed of a number of distinct provisions, it is important to evaluate the benefits and costs of the different provisions separately</u>. The interaction effects between separate provisions (such that the existence of one provision affects the benefits or costs arising from another provision) may complicate the analysis but does not eliminate the need to examine provisions separately. In such a case, <u>the desirability of a specific provision may be appraised by determining the net benefits of the proposed regulation with and without the provision in question</u>. Where the number of provisions is large and interaction effects are pervasive, it is obviously impractical to analyze all possible combinations of provisions in this way. Some judgment must be used to select the most significant or suspect provisions for such analysis. [§III.A.2]
A7	b	Does the economic analysis examine the extent to which separable provisions interact?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 2. EVALUATION OF ALTERNATIVES			
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For instances where the economic analysis uses cost-effectiveness analysis:			Where monetization is not possible for certain elements of the benefits or costs that are essential to consider, other quantitative and qualitative characterizations of these elements should be provided. Cost-effectiveness analysis also should be used where possible to evaluate alternatives. Costs should be calculated net of monetized benefits. Where some benefits are monetizable and others are not, a cost-effectiveness analysis will generally not yield an unambiguous choice; nevertheless, such an analysis is helpful for calculating a "breakeven" value for the unmonetized benefits (i.e., a value that would result in the action having positive net benefits). Such a value can be evaluated for its reasonableness in the discussion of the justification of the proposed action. Cost-effectiveness analysis should also be used to compare regulatory alternatives in cases where the level of benefits is specified by statute. [§III.A.2]
A8	a	Was the level of benefits to be achieved by the regulation specified in statute?	
A8	b	Does the economic analysis calculate costs net of monetized benefits?	
A8	c	Does the economic analysis use cost-effectiveness analysis to calculate “breakeven” values for unmonetized benefits?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 3. DISCOUNTING FUTURE BENEFITS AND COSTS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
D1	Are benefits and costs expressed in discounted constant dollars to the fullest extent possible?	To the fullest extent possible, benefits and costs should be expressed in discounted constant dollars. [§III.A.2] * * * Constant-dollar benefits and costs must be discounted to present values before benefits and costs in different years can be added together to determine overall net benefits. To obtain constant dollar estimates, benefit and cost streams in nominal dollars should be adjusted to correct for inflation. [§III.A.3.a]
D2	Does the economic analysis include a schedule indicating when all benefits and costs are expected to occur, including those benefits and costs which are difficult or impossible to monetize?	The economic analysis also should contain a schedule indicating when all benefits and costs are expected to occur. * * * Even those benefits and costs that are hard to quantify in monetary terms should be discounted. The schedule of benefits and costs over time therefore should include benefits that are hard to monetize. [§III.A.3.a]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 3. DISCOUNTING FUTURE BENEFITS AND COSTS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
D3	Are benefits and costs discounted based on OMB Circular A-94?	The basic guidance on discount rates for regulatory and other analyses is provided in OMB Circular A-94. The discount rate specified in that guidance is intended to be an approximation of the opportunity cost of capital, which is the before-tax rate of return to incremental private investment. The Circular A-94 rate, which was revised in 1992 based on an extensive review and public comment, reflects the rates of return on low yielding forms of capital, such as housing, as well as the higher rates of returns yielded by corporate capital. This average rate currently is estimated to be 7 percent in real terms (i.e., after adjusting for inflation). As noted in the A-94 guidance, agencies may also present sensitivity analyses using other discount rates, along with a justification for the consideration of these alternative rates. [§III.A.3.a]
D4	Does the economic analysis include a sensitivity analysis showing how estimated benefits, costs and net benefits vary depending on the choice of discount rate?	

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III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:
3. DISCOUNTING FUTURE BENEFITS AND COSTS

QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
D5		Where the agency believes that the default discount rate set forth in OMB Circular A-94 is incorrect, does the economic analysis use a "shadow price of capital" approach?	Converting investment-related benefits and costs to their consumption-equivalents as required by this approach involves calculating the "shadow price of capital." This shadow price reflects the present value of the future changes in consumption arising from a marginal change in investment, using the consumption rate of interest (also termed the rate of time preference) as the discount rate. The calculation of the shadow price of capital requires assumptions about the extent to which government actions -- including regulations -- crowd out private investment, the social (i.e., before-tax) returns to this investment, and the rate of reinvestment of future yields from current investment. Estimates of the shadow price are quite sensitive to these assumptions. For example, in some applications it may be appropriate to assume that access to global capital markets implies no crowding out of private investment by government actions or that monetary and fiscal authorities determine aggregate levels of investment so that the impact of the contemplated regulation on total private investment can be ignored. Alternatively, there is evidence that domestic saving affects domestic investment and that regulatory costs may also reduce investment. In these cases, more substantial crowding out would be an appropriate assumption. The rate of time preference is also a complex issue. Generally, it is viewed as being approximated by the real return to a safe asset, such as Government debt. However, a substantial fraction of the population does little or no saving and may borrow at relatively high interest rates. While the shadow price approach is theoretically preferred, there are several practical challenges to its use. Agencies wishing to use this methodology should consult with OMB prior to doing so, and should clearly explain their solutions to the methodological and empirical challenges noted above. [§III.A.3.b]
		If yes:	
D5	a	Does the economic analysis document consultation with OMB prior to employing an alternative discount rate or methodology?	
D5	b	Does the economic analysis clearly explain how the agency resolved the methodological and empirical problems associated with this approach?	

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QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
D6	Does the economic analysis correctly avoid adjusting the discount rate to account for uncertainty?	In general, the discount rate should not be adjusted to account for the uncertainty of future benefits and costs. Risk and uncertainty should be dealt with according to the principles presented in Section 4 below and not by changing the discount rate. [§III.A.3.a]
D7	Does the economic analysis discount those benefits and costs that cannot be monetized?	Even those benefits and costs that are hard to quantify in monetary terms should be discounted. The schedule of benefits and costs over time therefore should include benefits that are hard to monetize. In many instances where it is difficult to monetize benefits, agencies conduct regulatory "cost-effectiveness" analyses instead of "net benefits" analyses. When the effects of alternative options are measured in units that accrue at the same time that the costs are incurred, annualizing costs is sufficient and further discounting of non-monetized benefits is unnecessary; for instance, the annualized cost per ton of reducing certain polluting emissions can be an appropriate measure of cost-effectiveness. However, when effects are measured in units that accrue later than when the costs are incurred, such as the reduction of adverse health effects that occur only after a long period of exposure, the annualized cost per unit should be calculated after discounting for the delay between accrual of the costs and the effects. [§III.A.3.a]
D8	Where latent health risks are involved, does the economic analysis discount benefits and costs to reflect the delay between the time costs are borne and benefits are realized?	

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QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
D9	Does the economic analysis correctly consider the implications of changing relative prices over time?	In assessing the present value of benefits and costs from a regulation, it may be necessary to consider implications of changing relative prices over time. For example, increasing scarcity of certain environmental resources could increase their value over time relative to conventional consumer goods. In such a situation, it is inappropriate to use current relative values for assessing regulatory impacts. However, while taking into account changes over time in relative values may have an effect similar to discounting environmental impacts at a lower rate, it is important to separate the effects of discounting from the effects of relative price changes in the economic analysis. In particular, the discount rate should not be adjusted for expected changes in the relative prices of goods over time. Instead, any changes in relative prices that are anticipated should be incorporated directly in the calculations of benefit and cost streams. [§III.A.3.a]

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QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Where benefits and costs span generations:			Comparisons of benefits and costs across generations raise special questions about equity, in addition to conventional concerns about efficiency. One approach to these questions is to follow the discounting procedures described above and to address equity issues explicitly rather than through modification of the discount rate.
D10	a	Does the economic analysis follow conventional discounting procedures and address equity issues separately?	
D10	b	Does the economic analysis use a "social rate of time preference" in lieu of conventional discounting procedures?	An alternative approach is to use a special social rate of time preference when conducting intergenerational analyses in order to properly value changes in consumption in different generations. For example, one philosophical perspective is that the social marginal rate of substitution between the well-being of members of successive generations may be less than the individual rate of time preference, and that future generations should not have their expected welfare discounted just because they come later in time. Instead, this view suggests that discounting should reflect only the growth of per capita consumption and the corresponding decrease in marginal utility over time. As this approach uses a consumption-based rate of interest, costs and benefits must also be adjusted to reflect the shadow price of capital. As in other cases when agencies seek to use the shadow price of capital approach, they should consult with OMB prior to conducting special analyses of regulations having substantial intergenerational effects. [§III.A.3.c]
D10	c	Does the economic analysis document consultation with OMB prior to employing an alternative discount rate or methodology?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 4A. ASSESSING VARIABLE AND UNCERTAIN RISKS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Transparency and full disclosure:			The treatment of uncertainty in developing risk, benefit, and cost information also must be guided by the principles of full disclosure and transparency, as with other elements of an [economic analysis]. Data, models, and their implications for risk assessment should be identified in the risk characterization. Inferences and assumptions should be identified and evaluated explicitly, together with adequate justifications of choices made, and assessments of the effects of these choices on the analysis. [§III.A.4]
RA1	a	Do underlying risk analyses identify data, models, and their implications for risk assessment?	
RA1	b	Does the economic analysis explicitly identify and evaluate inferences and assumptions, including their effects on the analysis?	
RA1	c	Does the economic analysis provide adequate justifications for each key choice of data, models, assumptions and inferences?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 4A. ASSESSING VARIABLE AND UNCERTAIN RISKS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
RA1	d	Does the economic analysis provide sufficient documentation to permit the reader to replicate the analysis and quantify the effects of key assumptions?	The material provided should permit the reader to replicate the analysis and quantify the effects of key assumptions. Such analyses are becoming increasingly easy to perform because of advances in computing power and new methodological developments. Thus, the level and scope of disclosure and transparency should increase over time. [§III.A.4.a]
RA1	e	Does the economic analysis provide estimates of the probability distribution of risks, both before and after the rule is implemented?	In order for the [economic analysis] to evaluate outcomes involving risks, risk assessments must provide some estimates of the probability distribution of risks with and without the regulation. Whenever it is possible to quantitatively characterize the probability distributions, some estimates of central tendency (e.g., mean and median) must be provided in addition to ranges, variances, specified low-end and high-end percentile estimates, and other characteristics of the distribution. [§III.A.4.a]
RA1	f	Whenever quantitative risk estimates are provided, does the economic analysis report central tendency risk estimates in addition to ranges, variance, and specified low- and high-end percentile values?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:

4A. ASSESSING VARIABLE AND UNCERTAIN RISKS

QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Separation of risk assessment from risk management:			Risk management is an activity conceptually distinct from risk assessment or valuation, involving a policy of whether and how to respond to risks to health, safety, and the environment. The appropriate level of protection is a policy choice rather than a scientific one. The risk assessment should generate a credible, objective, realistic, and scientifically balanced analysis; present information on hazard, dose-response, and exposure (or analogous material for non-health assessments); and explain the confidence in each assessment by clearly delineating strengths, uncertainties, and assumptions, along with the impacts of these factors on the overall assessment. The data, assumptions, models, and inferences used in the risk assessment to construct quantitative characterizations of the probabilities of occurrence of health, safety, or ecological effects should not reflect unstated or unsupported preferences for protecting public health and the environment, or unstated safety factors to account for uncertainty and unmeasured variability. Such procedures may introduce levels of conservatism that cumulate across assumptions and make it difficult for decisionmakers to evaluate the magnitude of the risks involved. [§III.A.4]
RA2	a	Does the economic analysis avoid relying on data, assumptions, models, and inferences containing unstated or unsupported risk management preferences?	
RA2	b	Does the economic analysis avoid relying on unstated or unsupported safety factors to account for variability and/or uncertainty?	
RA2	c	Does the economic analysis present a credible, objective, realistic and scientifically balanced risk analysis?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 4A. ASSESSING VARIABLE AND UNCERTAIN RISKS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Where there is significant scientific uncertainty or controversy:			Informed judgment is necessary to evaluate conflicting scientific theories. In some cases it may be possible to weigh conflicting evidence in developing the overall risk assessment. In other cases, the level of scientific uncertainty may be so large that a risk assessment can only present discrete alternative scenarios without a quantitative assessment of their relative likelihood. For example, in assessing the potential outcomes of an environmental effect, there may be a limited number of scientific studies with strongly divergent results. In such cases, the assessment should present results representing a range of plausible scenarios, together with any information that can help in providing a qualitative judgment of which scenarios are more scientifically plausible. [§III.A.4]
RA3	a	Does the economic analysis present results representing a range of plausible scenarios?	
RA3	b	Does the economic analysis present any information that can help in providing a qualitative judgment as to which scenarios are more scientifically plausible?	
RA3	c	Does the economic analysis use simulation, sensitivity analysis, or another technique to account for uncertainty?	Sensitivity analysis is carried out by conducting analyses over the full range of plausible values of key parameters and plausible model specifications. Sensitivity analysis is particularly attractive when there are several easily identifiable critical assumptions in the analysis, when information is inadequate to carry out a more formal probabilistic simulation, or when the nature and scope of the regulation do not warrant more extensive analysis. One important form of sensitivity analysis involves estimating "switch points," that is, critical parameter values at which estimated net benefits change sign. Sensitivity analysis is useful for evaluating the robustness of conclusions about net benefits with respect to changes in model parameters. Sensitivity analysis should convey as much information as possible about the likely plausibility or frequency of occurrence of different scenarios (sets of parameter values) considered. [§III.A.4]
RA3	d	Does the economic analysis use simulation, sensitivity analysis, or another technique to estimate "switch points" -- the critical parameter values at which estimated net benefits change sign?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 4A. ASSESSING VARIABLE AND UNCERTAIN RISKS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
In analyzing the implications of alternative risk models, does the economic analysis:			In the absence of adequate valid data, properly identified assumptions are necessary for conducting an assessment. The existence of plausible alternative models and their implications should be carried through as part of each risk characterization product. Alternative models and assumptions should be used in the risk assessment as needed to provide decisionmakers with information on the robustness of risk estimates and estimates of regulatory impacts. As with other elements of an [economic analysis], there should be balance between thoroughness of analysis in the treatment of risk and uncertainty and practical limits on the capacity to carry out analysis. The range of models, assumptions, or scenarios presented in the risk assessment need not be exhaustive, nor is it necessary that each alternative be evaluated at every step of the assessment. The assessment should provide sufficient information for decisionmakers to understand the degree of scientific uncertainty and the robustness of estimated risks, benefits, and costs. The choice of models or scenarios used in the risk assessment should be explained. [§III.A.4.a]
RA4	a	Identify plausible alternative risk models and carry them through separate risk estimates?	
RA4	b	Use alternative models and assumptions to evaluate the robustness of estimated risks, benefits and costs?	
RA4	c	Provide sufficient information for decision makers to understand the degree of scientific uncertainty?	
RA4	d	Provide an explanation for the agency's choice of models or scenarios used in the risk assessment?	

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QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
RA5		Are data and assumptions presented in a manner that permits quantitative evaluation of their incremental and cumulative effects, including effects on both the entire affected population and relevant subpopulations?	Where feasible, data and assumptions should be presented in a manner that permits quantitative evaluation of their incremental effects. The cumulative effects of assumptions and inferences should also be evaluated. A full characterization of risks should include findings for the entire affected population and relevant subpopulations. Assumptions should be consistent with reasonably obtainable scientific information. Thus, for example, low-dose toxicity extrapolations should be consistent with physiological knowledge; assumptions about environmental fate and transport of contaminants should be consistent with principles of environmental chemistry. [§III.A.4.a]
RA6		Does the economic analysis rely on assumptions that are consistent with reasonable obtainable scientific information?	
Precision:			Overall risk estimates cannot be more precise than their most uncertain component. Thus, risk estimates should be reported in a way that reflects the degree of uncertainty present in order to prevent creating a false sense of precision. The accuracy with which quantitative estimates are reported must be supported by the quality of the data and models used. In all cases, the level of precision should be stated explicitly. [§III.A.4.a]
RA7	a	Does the economic analysis explicitly report the level of precision in estimates of risk and risk reduction?	
RA7	b	Is this level of precision consistent with the actual level of precision implied by uncertainties in the underlying inputs?	

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QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Targeting:			When uncertainty is due largely to observable variability in populations or natural conditions, one policy alternative may be to refine targeting, that is, to differentiate policies across key subgroups. Analysis of such policies should consider the incremental benefits of improved efficiency from targeting, any incremental costs of monitoring and enforcement, and changes in the distribution of benefits and costs. [§III.A.4.a]
RA8	a	Where significant population variability exists, does the economic analysis include as an alternative the option of refined targeting?	
RA8	b	Does the economic analysis include estimates of the incremental benefits and costs of such an alternative?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:

4B. VALUING VARIABLE AND UNCERTAIN RISKS

QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
RV1	a	Does the analysis consider the expected net benefits of the change in risks, taking into account the probability distribution of potential outcomes with and without the regulation?	To value changes in risk arising from variability in expected outcomes as a consequence of regulation, agencies should consider the expected net benefits of the risk change, taking into account the probability distribution of potential outcomes with and without the regulation. The more familiar examples deal with valuing risks associated with incurring possible future costs. When costs are subject to risk, they are generally appraised by risk-averse individuals at more than the expected value. For example, riskier financial instruments must generally earn a higher average rate of return in order to attract investors. Similarly, the owner of a facility may be willing to pay more to reduce the probability of fire than the reduction in expected loss, because of aversion to the risk of the loss. This also explains why property owners are willing to buy fire insurance at a price that exceeds expected losses. To accurately value the net benefits of a regulation, regulation-induced changes in expenditures on self-protection, mitigation, or other risk-reduction measures should be included. Under the standard assumption in economic theory that individuals make choices among outcomes subject to risks to maximize expected utility, risk aversion is incorporated into net benefits estimates by expressing benefits and costs in terms of their certainty equivalents. Certainty equivalents are defined as net benefits occurring with certainty that would have the same value to individuals as the expected value of an alternative whose net benefits are subject to risk. For risk-averse individuals, the certainty equivalent of such a net benefit stream would be smaller than the expected value of those net benefits, because risk intrinsically has a negative value. The difference between the expected value of net benefits subject to risk and the certainty equivalent is called the risk premium. Similarly, regulations that reduce the overall variability of net benefits will have a certainty equivalent value that is larger than the expected value of the net benefits by an amount that reflects the value of the variability of outcomes. [§III.A.4.b]
RV1	b	Does the analysis estimate certainty equivalents for benefits and costs?	
RV1	c	Does the analysis take account of risk aversion on the cost side by increasing the cost estimate to the extent that costs are uncertain?	
RV1	d	Does the analysis take account of risk aversion on the benefit side by decreasing the benefit estimate to the extent that benefits are uncertain?	
RV1	e	Does the analysis take account of how the regulation will induce changes in expenditures on self-protection, mitigation, or other risk-reduction measures?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 4C. INTEGRATING RISK ASSESSMENT AND RISK VALUATION		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
RC1	Was the underlying risk assessment conducted in such a way that permits its use in the more general benefit-cost framework?	Estimating the benefits and costs of risk-reducing regulations includes two components: a risk assessment that, in part, characterizes the probabilities of occurrence of outcomes of interest; and a valuation of the levels and changes in risk experienced by affected populations as a result of the regulation. It is essential that both parts of such evaluations be conceptually consistent. In particular, risk assessments should be conducted in a way that permits their use in a more general benefit-cost framework, just as the benefit-cost analysis should attempt to capture the results of the risk assessment and not oversimplify the results (e.g., the analysis should address the benefit and cost implications of probability distributions). [§III.A.4]
RC2	Are the methods used for estimating and valuing risk (and the benefits of reducing risk) conceptually consistent?	
RC3	Does the economic analysis capture but not oversimplify the results of the risk assessment?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 5. ASSUMPTIONS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
AS1	a	Does the economic analysis reveal all material assumptions underlying its cost estimates?	Where benefit or cost estimates are heavily dependent on certain assumptions, it is essential to make those assumptions explicit and, where alternative assumptions are plausible, to carry out sensitivity analyses based on the alternative assumptions. If the value of net benefits changes sign with alternative plausible assumptions, further analysis may be necessary to develop more evidence on which of the alternative assumptions is more appropriate. Because the adoption of a particular estimation methodology sometimes implies major hidden assumptions, it is important to analyze estimation methodologies carefully to make hidden assumptions explicit. [§III.A.5]
AS1	b	Does the economic analysis reveal all material assumptions underlying its benefit estimates?	
AS1	c	Where the choice of assumptions affects the sign of net benefits, does the does the economic analysis carry out sensitivity analysis based on these alternative assumptions?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 5. ASSUMPTIONS					
QX#	EVALUATIVE CRITERION				OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Proprietary data:					Special challenges arise in evaluating the results of an [economic analysis] that relies strongly upon proprietary data or analyses whose disclosure is limited by confidentiality agreements. In some cases, such data and analysis may be the best, or even the only, means to address an important aspect of a proposed regulation. Nevertheless, given the difficulties that this confidentiality presents to OMB review and meaningful public participation in the rulemaking, agencies should exercise great care in relying strongly upon proprietary material in developing an [economic analysis]. When such material is used, it is essential that agencies provide as much information as possible concerning the underlying scientific, technological, behavioral, and valuation assumptions and conclusions. This can be accomplished, for example, by providing information about the values of key input parameters used in a modeling analysis or the implied behavioral response rates derived from sensitivity analysis. [§III.A.5]
AS2	Does the economic analysis rely strongly upon on proprietary data or analyses whose disclosure is limited by confidentiality agreements? If yes:				
AS2	a	Are such data or analyses the gest, or even the only, means to address an important aspect of the regulation?			
AS2	b	Does the economic analysis provide as much information as possible concerning underlying scientific, technological, behavioral and valuation assumptions, such as:			
AS2	c	1	• information about the values of key input parameters?		
AS2	c	2	• information about the implied behavioral response rates from sensitivity analysis?		

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 5. ASSUMPTIONS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Compliance:			The effectiveness of proposed rules may depend in part upon agency enforcement strategies, which may vary over time as agency priorities and budgetary constraints change. Because an agency usually cannot commit to an enforcement strategy at the time the rule is promulgated, the analysis of a rule's benefits and costs should generally assume that compliance with the rule is complete, although there may be circumstances when other assumptions should be considered as well. The analysis of a new or revised rule should differentiate between its benefits and costs, given an assumed level of compliance, and the implications of changes in compliance with an existing rule. [§III.A.5]
AS3	a	Does the analysis assume full compliance?	
AS3	b	Does the analysis consider alternative compliance rates?	
AS3	c	Where an analysis uses an alternative compliance rate assumption, does it use the same assumption for both benefits and costs?	
AS3	d	Does the analysis differentiate between the benefits and costs of complying with existing regulatory requirements and complying with new requirements?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 6. INTERNATIONAL TRADE		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
IT1	Does the analysis maintain no distinction between domestic and foreign resources?	In calculating the benefits and costs of a proposed regulatory action, generally no explicit distinction needs to be made between domestic and foreign resources. If, for example, compliance with a proposed regulation requires the purchase of specific equipment, the opportunity cost of that equipment is ordinarily best represented by its domestic cost in dollars, regardless of whether the equipment is produced domestically or imported. The relative value of domestic and foreign resources is correctly represented by their respective dollar values, as long as the foreign exchange value of the dollar is determined by the exchange market. Nonetheless, an awareness of the role of international trade may be quite useful for assessing the benefits and costs of a proposed regulatory action. For example, the existence of foreign competition may make the demand curve facing a domestic industry more elastic than it would be otherwise. Elasticities of demand and supply frequently can significantly affect the magnitude of the benefits or costs of a regulation. [§III.A.6]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 6. INTERNATIONAL TRADE		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
IT2	Does the analysis properly account for the effects of the regulation, if any, to limit imports?	Regulations limiting imports -- whether through direct prohibitions or fees, or indirectly through an adverse differential effect on foreign producers or consumers relative to domestic producers and consumers -- raise special analytic issues. The economic loss to the United States from limiting imports should be reflected in the net benefit estimate. However, a benefit-cost analysis will generally not be able to measure the potential U.S. loss from the threat of future retaliation by foreign governments. This threat should then be treated as a qualitative cost (see section 7). [§III.A.6]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 7. NON-MONETIZED BENEFITS AND COSTS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
NM1	a	Does the analysis present benefits in monetized units whenever possible?	Presentation of monetized benefits and costs is preferred where acceptable estimates are possible. However, monetization of some of the effects of regulations is often difficult if not impossible, and even the quantification of some effects may not be easy. Effects that cannot be fully monetized or otherwise quantified should be described. Those effects that can be quantified should be presented along with qualitative information to characterize effects that are not quantified. Irrespective of the presentation of monetized benefits and costs, the [economic analysis] should present available physical or other quantitative measures of the effects of the alternative actions to help decisionmakers understand the full effects of alternative actions. These include the magnitude, timing, and likelihood of impacts, plus other relevant dimensions (e.g., irreversibility and uniqueness). For instance, assume the effects of a water quality regulation include increases in fish populations and habitat over the affected stream segments and that it is not possible to monetize such effects. It would then be appropriate to describe the benefits in terms of stream miles of habitat improvement and increases in fish population by species (as well as to describe the timing and likelihood of such effects, etc.). Care should be taken, however, when estimates of monetized and physical effects are mixed in the same analysis so as to avoid double-counting of benefits. Finally, the [economic analysis] should distinguish between effects unquantified because they were judged to be relatively unimportant, and effects that could not be quantified for other reasons. [§III.A.7]
NM1	b	Does the analysis present costs in monetized units whenever possible?	
NM1	c	Where monetization is not possible, does the analysis present non-monetized benefits in physical or other quantitative units whenever possible?	
NM1	d	Where monetization is not possible, does the analysis present non-monetized costs in physical or other quantitative units whenever possible?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:

8. DISTRIBUTIONAL EFFECTS AND EQUITY

QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
E1	Are distributional effects represented as significant factors in the agency's decision making? If yes:	Where distributive effects are thought to be important, the effects of various regulatory alternatives should be described quantitatively to the extent possible, including their magnitude, likelihood, and incidence of effects on particular groups. Agencies should be alert for situations in which regulatory alternatives result in significant changes in treatment or outcomes for different groups. Effects on the distribution of income that are transmitted through changes in market prices can be important, albeit sometimes difficult to assess. There are no generally accepted principles for determining when one distribution of net benefits is more equitable than another. Thus, the EA should be careful to describe distributional effects without judging their fairness. These descriptions should be broad, focusing on large groups with small effects per capita as well as on small groups experiencing large effects per capita. Equity issues not related to the distribution of policy effects should be noted when important and described quantitatively to the extent feasible. [§III.A.8] Information on distributional impacts related to the alternatives should accompany the analysis of aggregate benefits and costs. Where relevant and feasible, agencies can also indicate how aggregate benefits and costs depend on the incidence of benefits and costs. Agencies should present a reasoned explanation or analysis to justify their choice among alternatives. [§III.A.2] Typically total expected net benefits and risk premia are calculated on the basis of a representative set of individual preferences. Agencies should also present available information on the incidence of benefits, costs, and risks where necessary for judging distributional consequences. Where information is available on differences in valuation across income levels or other identifiable criteria, agencies can use this information and information on the incidence of regulatory effects in calculating total net benefits estimates. [§III.A.4(b)]
E1 a	Does the economic analysis include estimates of the magnitude, likelihood and incidence of risks, benefits and costs across subpopulations?	
E1 b	Does the economic analysis use available information on differences in valuation across income levels or other identifiable aspects of the affected population in calculating net benefits?	
E1 c	Does the economic analysis describe distributional effects without judging their fairness?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS:
8. DISTRIBUTIONAL EFFECTS AND EQUITY

QX#	EVALUATIVE CRITERION			OMB ECONOMIC ANALYSIS GUIDANCE CITATION
E1	d		Does the economic analysis identify any equity issues not related to the distribution of policy effects? If yes:	
E1	d	1	Are these issues described quantitatively to the extent feasible?	
E1	c		Does the economic analysis present a reasoned explanation or analysis that justifies the agency's choice among alternatives where distributional impacts matter?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.A. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS AND COSTS: 8. DISTRIBUTIONAL EFFECTS AND EQUITY		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Where intergenerational effects are expected:		The [economic analysis] should also present information on the streams of benefits and costs over time in order to provide a basis for judging intertemporal distributional consequences, particularly where intergenerational effects are concerned. [§III.A.8]
E5	Does the economic analysis present the streams of benefits and costs over time?	
E6	Does the economic analysis document consultation with OMB prior to conducting special analyses of intergenerational effects?	As in other cases when agencies seek to use the shadow price of capital approach, they should consult with OMB prior to conducting special analyses of regulations having substantial intergenerational effects. [§III.A.3(b)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
B1	Does the economic analysis state the beneficial effects of the rule as well as principal alternatives?	The [economic analysis] should state the beneficial effects of the proposed regulatory change and its principal alternatives. In each case, there should be an explanation of the mechanism by which the proposed action is expected to yield the anticipated benefits. An attempt should be made to quantify all potential real incremental benefits to society in monetary terms to the maximum extent possible. A schedule of monetized benefits should be included that would show the type of benefit and when it would accrue; the numbers in this table should be expressed in constant, undiscounted dollars. Any benefits that cannot be monetized, such as an increase in the rate of introducing more productive new technology or a decrease in the risk of extinction of endangered species, should also be presented and explained. [§III.B]
B2	Does the economic analysis explain the mechanism by which the rule is expected to yield the anticipated benefits?	
B3	Does the analysis estimate incremental net benefits?	
B4	Does the analysis include a schedule of monetized net benefits showing the type of benefit and when it would accrue in constant, undiscounted dollars?	
B5	Does the analysis present and explain any benefits that cannot be monetized?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
B6	Does the analysis identify and explain, with enough detail to permit independent assessment and verification, the data or studies on which the benefit estimates are based?	The [economic analysis] should identify and explain the data or studies on which benefit estimates are based with enough detail to permit independent assessment and verification of the results. Where benefit estimates are derived from a statistical study, the [economic analysis] should provide sufficient information so that an independent observer can determine the representativeness of the sample, the reliability of extrapolations used to develop aggregate estimates, and the statistical significance of the results. [§III.B]
B7	Can an independent analyst determine the representativeness of samples, the reliability of extrapolations used to develop aggregate estimates, and the statistical significance of results?	
B8	Does the calculation of benefits, including the benefits of risk reduction, reflect the full probability distribution of potential consequences?	The calculation of benefits (including benefits of risk reductions) should reflect the full probability distribution of potential consequences. For example, extreme safety or health results should be weighted, along with other possible outcomes, by estimates of their probability of occurrence based on the available evidence to estimate the expected result of a proposed regulation. To the extent possible, the probability distributions of benefits should be presented. Extreme estimates should be presented as complements to central tendency and other estimates. If fundamental scientific disagreement or lack of knowledge precludes construction of a scientifically defensible probability distribution, benefits should be described under plausible alternative assumptions, along with a characterization of the evidence underlying each alternative view. This will allow for a reasoned determination by decisionmakers of the appropriate level of regulatory action. [§III.B]
B9	Does the economic analysis present the probability distribution of benefits?	
B10	Does the analysis present extreme estimates as complements to central tendency and other estimates?	
B11	Where fundamental scientific disagreement or lack of knowledge prevents construction of a scientifically defensible probability distribution, does the analysis describe benefits under plausible assumptions underlying each alternative view?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. GENERAL PRINCIPLES FOR THE ANALYSIS OF BENEFITS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
B12	Does the analysis avoid double-counting of benefits?	It is important to guard against double-counting of benefits. For example, if a regulation improves the quality of the environment in a community, the value of real estate in the community might rise, reflecting the greater attractiveness of living in the improved environment Inferring benefits from changes in property values is complex. On the one hand, the rise in property values may reflect the capitalized value of these improvements. On the other hand, benefit estimates that do not incorporate the consequences of land use changes will not capture the full effects of regulation. For regulations with significant effects on land uses, these effects must be separated from the capitalization of direct regulatory impacts into property values. [§III.B]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 1. GENERAL CONSIDERATIONS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
B13	a	Does the analysis rely on the concept of opportunity cost to estimate benefits, using the principle of "willingness-to-pay"?	The concept of "opportunity cost" is the appropriate construct for valuing both benefits and costs. The principle of "willingness-to-pay" captures the notion of opportunity cost by providing an aggregate measure of what individuals are willing to forgo to enjoy a particular benefit. Market transactions provide the richest data base for estimating benefits based on willingness-to-pay, as long as the goods and services affected by a potential regulation are traded in markets. It is more difficult to estimate benefits where market transactions are difficult to monitor or markets do not exist. Regulatory analysts in these cases need to develop appropriate proxies that simulate market exchange. Indeed, the analytical process of deriving benefit estimates by simulating markets may suggest alternative regulatory strategies that create such markets. Either willingness-to-pay (WTP) or willingness-to-accept (WTA) can provide an appropriate measure of benefits, depending on the allocation of property rights. The common preference for WTP over WTA measures is based on the empirical difficulties in estimating the latter.
B13	b	Does the problem at hand have property rights assigned in such a manner that "willingness-to-accept" is the preferred measure of opportunity cost?	
B14		Regardless of the methods used, does the economic analysis ensure that benefit estimates are reliable and conform as closely as possible to what would be observed in markets?	Estimates of willingness-to-pay based on observable and replicable behavior deserve the greatest level of confidence. Greater uncertainty attends benefit estimates that are neither derived from market transactions nor based on behavior that is observable or replicable. While innovative benefit estimation methodologies will be necessary or desirable in some cases, use of such methods intensifies the need for quality control to ensure that estimates are reliable and conform as closely as possible to what would be observed if markets existed. [§III.B.1]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 2. PRINCIPLES FOR VALUING BENEFITS DIRECTLY TRADED IN MARKETS					
QX#	EVALUATIVE CRITERION				OMB ECONOMIC ANALYSIS GUIDANCE CITATION
DTM1	Does the economic analysis use market prices to value goods and services traded in markets? If yes:				Ordinarily, goods and services are to be valued at their market prices. However, in some instances, the market value of a good or service may not reflect its true value to society. If a regulatory alternative involves changes in such a good or service, its monetary value for purposes of benefit-cost analysis should be derived using an estimate of its true value to society (often called its "shadow price"). For example, suppose a particular air pollutant damages crops. One of the benefits of controlling that pollutant will be the value of the crop saved as a result of the controls. That value would typically be determined by reference to the price of the crop. If, however, the price of that crop is held above the unregulated market equilibrium price by a government price-support program, an estimate based on the support price would overstate the value of the benefit of controlling the pollutant. Therefore, the social value of the benefit should be calculated using a shadow price for crops subject to price supports. The estimated shadow price is intended to reflect the value to society of marginal uses of the crop (e.g., the world price if the marginal use is for exports). If the marginal use is to add to very large surplus stockpiles, the shadow price would be the value of the last units released from storage minus storage cost. Therefore, where stockpiles are large and growing, the shadow price is likely to be low and could well be negative. In other cases, market prices could understate social values, for example where production of a particular good also provides opportunities for improving basic knowledge. [§III.B.2]
DTM2	a	What methods does the economic analysis rely upon to estimate these benefits?			
DTM3	Does the economic analysis assert that market prices under- or overstate true social value? If yes:				
DTM4	a	Does the economic analysis demonstrate the existence of a market- or government-induced distortion that causes market prices to under- or overstate true social value? If yes:			
DTM4	a	1	What is the nature of this distortion?		

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 3. PRINCIPLES FOR VALUING BENEFITS INDIRECTLY TRADED IN MARKETS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
ITM1		Does the economic analysis identify as benefits goods or services that are indirectly traded in markets? If yes:	In some important instances, a benefit corresponds to a good or service that is indirectly traded in the marketplace. Examples include reductions in health-and-safety risks, the use-values of environmental amenities and scenic vistas. To estimate the monetary value of such an indirectly traded good, the willingness-to-pay valuation methodology is considered the conceptually superior approach. As noted in Sections 4 and 5 immediately following, alternative methods may be used where there are practical obstacles to the accurate application of direct willingness-to-pay methodologies. A variety of methods have been developed for estimating indirectly traded benefits. Generally, these methods apply statistical techniques to distill from observable market transactions the portion of willingness-to-pay that can be attributed to the benefit in question. Examples include estimates of the value of environmental amenities derived from travel-cost studies, hedonic price models that measure differences or changes in the value of land, and statistical studies of occupational-risk premiums in wage rates. For all these methods, care is needed in designing protocols for reliably estimating benefits or in adapting the results of previous studies to new applications. The use of occupational-risk premiums can be a source of bias because the risks, when recognized, may be voluntarily rather than involuntarily assumed, and the sample of individuals upon which premium estimates are based may be skewed toward more risk-tolerant people. [§III.B.3]
ITM2	a	Does the economic analysis estimate the value of indirectly traded benefits based on contingent value methods? If yes:	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 3. PRINCIPLES FOR VALUING BENEFITS INDIRECTLY TRADED IN MARKETS				
QX#	EVALUATIVE CRITERION			OMB ECONOMIC ANALYSIS GUIDANCE CITATION
ITM3	a	1	Does the economic analysis use contingent valuation methods that approximate the state-of-the-art?	Contingent-valuation methods have become increasingly common for estimating indirectly traded benefits, but the reliance of these methods on hypothetical scenarios and the complexities of the goods being valued by this technique raise issues about its accuracy in estimating willingness to pay compared to methods based on (indirect) revealed preferences. Accordingly, value estimates derived from contingent-valuation studies require greater analytical care than studies based on observable behavior. For example, the contingent valuation instrument must portray a realistic choice situation for respondents -- where the hypothetical choice situation corresponds closely with the policy context to which the estimates will be applied. The practice of contingent valuation is rapidly evolving, and agencies relying upon this tool for valuation should judge the reliability of their benefit estimates using this technique in light of advances in the state of the art. [§III.B.3]
ITM3	a	2	Does the economic analysis examine or test the reliability of results using contingent valuation methods?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 4. PRINCIPLES AND METHODS FOR VALUING GOODS THAT ARE NOT TRADED DIRECTLY OR INDIRECTLY IN MARKETS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
NTM1		Does the economic analysis identify as benefits goods or services that are not traded in markets? If yes:	Some types of goods, such as preserving environmental or cultural amenities apart from their use and direct enjoyment by people, are not traded directly or indirectly in markets. The practical obstacles to accurate measurement are similar to (but generally more severe than) those arising with respect to indirect benefits, principally because there are few or no related market transactions to provide data for willingness-to-pay estimates. For many of these goods, particularly goods providing "nonuse" values, contingent-valuation methods may provide the only analytical approaches currently available for estimating values. The absence of observable and replicable behavior with respect to the good in question, combined with the complex and often unfamiliar nature of the goods being valued, argues for great care in the design and execution of surveys, rigorous analysis of the results, and a full characterization of the uncertainties in the estimates to meet best practices in the use of this method. [§III.B.4]
NTM2	a	Does the economic analysis estimate the value of such benefits using contingent value or similar methods? If yes:	
NTM2	b	Does the analysis use contingent value methods that approximate the state-of-the-art?	
NTM2	c	Does the analysis examine or test the reliability results using contingent valuation methods?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS:
5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS

QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS1	Are non-health and safety benefits a significant fraction of total estimated benefits? If yes, does the economic analysis:	Regulations that address health and safety concerns often yield a variety of benefits traded directly in markets, benefits indirectly traded in markets, and benefits not traded in markets. A major component of many such regulations is a reduction is the risk of illness, injury or premature death. There are differences of opinion about the various approaches for monetizing such risk reductions. In assessing health and safety benefits, the analysis should present estimates of both the risks of nonfatal illness or injury and fatality risks, and may include any particular strengths or weakness of such analyses the agencies think appropriate, in order to accurately assess the benefits of government action. [§III.B.5] Although the willingness-to-pay approach is conceptually superior, measurement difficulties may cause the agency to prefer valuations of reductions in risks of nonfatal illness or injury based on the expected direct costs avoided by such risk reductions. For example, an injury-value estimate from a willingness-to-pay study may be an average over a specific combination of injuries of varying severity. If the average injury severity in such a study differs greatly from the injury severity addressed by the regulatory action, then the study's estimated injury value may not be appropriate for evaluating that action. More generally, willingness-to-pay estimates may be unavailable or too tentative to provide a solid base for the evaluation. The agency should use whatever approach it can justify as most appropriate for the decision at hand, keeping in mind that direct cost measures can be expected to understate the true cost. As discussed above (Section III.A.3), costs and benefits should be appropriately discounted to reflect the latency period between exposure and illness. The agency should use whatever approach it can justify but should provide a clear explanation of the assumptions and reasoning used in the valuation. [§III.B.5(a)]
HS2	a • present estimates of both the risks of non-fatal illness or injury and fatality risks?	
HS2	b • describe any particular strengths or weaknesses of these estimates?	
HS2	c • discount to reflect the latency period between exposure and illness?	
HS2	d • justify its choice of methods?	
HS2	e • estimate the value of health and safety benefits based on willingness-to-pay methods?	
HS3	a 1 If yes, does the economic analysis demonstrate that the methods used provide a solid basis for benefits transfer?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS:
5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS

QX#	EVALUATIVE CRITERION				OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS3	a	2		If no, does the economic analysis estimate benefits based on direct costs avoided, taking into account important costs not readily captured by direct cost methods? If the economic analysis uses direct cost methods, does the analysis:	The primary components of the direct-cost approach are medical and other costs of offsetting illness or injury; costs for averting illness or injury (e.g., expenses for goods such as bottled water or job safety equipment that would not be incurred in the absence of the health or safety risk); and the value of lost production. Possibly important costs that might be omitted by the use of the direct-cost approach are the costs of pain, suffering and time lost (due to illness, injury, or averting behavior) from leisure and other activities that are not directly valued in the market. The present value of the expected stream of costs should be included. For long-term chronic illness or incapacitation the direct-cost approach may be particularly problematic compared to a willingness-to-pay estimate analogous to the valuation of mortality risks. [§III.B.5(a)] Valuing lost production and other time-related costs gives rise to a number of methodological concerns. For occupational illness or injury, lost production can be measured by losses in workers' value of marginal product. In valuing the effects of broader environmental hazards, however, attention must be given to the composition of the exposed population. For example, some portion of the working-age population may be unemployed, while others will be retired. Still others may have chosen to be homemakers or home caregivers. Valuation of nonfatal illness or injury to these parts of the population presents a greater challenge than valuing the loss of employee services using wage rates. Finally, the valuation of health impacts on children or retirees through the direct-cost approach is especially problematic since their zero opportunity cost in the labor market is not a good proxy for the social cost of illness. The agency should use whatever approach it can justify but should provide a clear explanation of the assumptions and reasoning used in the valuation. [§III.B.5(a)]
HS3	a	2	A	• take account of the composition of the affected population?	
HS3	a	2	B	• justify its choice of methods?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS4	Does the analysis rely on external estimates of the "value of statistical life"? If yes:		Reductions in fatality risks as a result of government action are best monetized according to the willingness-to-pay approach. The value of changes in fatality risk is sometimes expressed in terms of the "value of statistical life" (VSL) or the "value of a life". These terms are confusing at best and should be carefully described when used. It should be made clear that these terms refer to the willingness to pay for reductions in risks of premature death (scaled by the reduction in risk being valued). That is, such estimates refer only to the value of relatively small changes in the risk of death. They have no application to an identifiable individual. [§III.B.5(b)]
HS4	a	Does the analysis apply the "value of statistical life" only to small changes in the risk of death?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS4	b	Does the analysis rely on a single estimate, range or distribution of the value of fatality risk reduction?	One acceptable explicit valuation approach would be for the agency to select a single estimate of the value of reductions in fatality risk at ordinarily encountered risk levels, or a distribution of such values, and use these values consistently for evaluating all its programs that affect ordinary fatality risks. Where the analysis uses a range of alternative values for reductions in fatality risk, it may be useful to calculate break-even values, as in other sensitivity analyses. This requires calculating the borderline value of reductions in fatality risk at which the net benefit decision criterion would switch over from favoring one alternative to favoring another (i.e., the value of fatality risk at which the net benefits of the two alternatives are equal). This method will frequently be infeasible because of its computational demands but, where feasible, it may be a useful addition to the sensitivity analysis. [§III.B.5(c)] Whether the VSLs (or VSLYs) are chosen explicitly or are an implicit outcome of a cost-effectiveness approach, the choice of estimates ideally should be based on a comparison of the context of the regulation affecting risks and the context of the study or studies being relied on for value estimates. The literature identifies certain attributes of risk that affect value. These attributes include the baseline risk, the extent to which the risk is voluntarily or involuntarily assumed, and features (such as age) of the population exposed to risk. For regulations affecting some segments of the population (e.g., infants) more than those groups which have served as the basis for most of the information used to estimates VSLs (e.g., working-age adults), the use of VSLs from the literature may not be appropriate. At a minimum, differences in regulatory and study contexts should be acknowledged and a rationale for the choice of the value estimate should be provided. [§III.B.5(c)]
HS4	c	Does the analysis calculate the "break-even" value of fatality risk reduction at which the net benefit criterion would switch over from favoring one alternative to favoring another?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS4	d	Does the analysis apply the "value of statistical life" in an appropriate context?	Based on the literature, both the scale of baseline risks and their degree of voluntariness appear to affect VSLs. However, the risk from an involuntary hazard typically is too small to represent a significant portion of baseline risk. (For example, average annual mortality risks for men aged 55-64 are about two per hundred, while occupational fatality risk reductions typically achieved by regulations are between two per ten thousand and two per million annually.) In such cases, it may be legitimate to assume that the valuation of risks can be treated as independent of baseline risk. [§III.B.5(c)]
HS4	e	Does the analysis acknowledge differences in regulatory contexts and provide a rationale for the choice of "value of statistical life"?	Whether the VSLs (or VSLYs) are chosen explicitly or are an implicit outcome of a cost-effectiveness approach, the choice of estimates ideally should be based on a comparison of the context of the regulation affecting risks and the context of the study or studies being relied on for value estimates. The literature identifies certain attributes of risk that affect value. These attributes include the baseline risk, the extent to which the risk is voluntarily or involuntarily assumed, and features (such as age) of the population exposed to risk. For regulations affecting some segments of the population (e.g., infants) more than those groups which have served as the basis for most of the information used to estimates VSLs (e.g., working-age adults), the use of VSLs from the literature may not be appropriate. At a minimum, differences in regulatory and study contexts should be acknowledged and a rationale for the choice of the value estimate should be provided. [§III.B.5(c)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS4	f	Does the analysis demonstrate that these external values are as accurate as possible given the circumstances being assessed and the state of knowledge?	Values of fatality risk reduction often figure prominently in assessments of government action. Estimates of these values that are as accurate as possible, given the circumstances being assessed and the state of knowledge, will reduce the prospects for inadequate or excessive action. [§III.B.5(b)]
HS5		Does the analysis rely on external estimates of the “value of statistical life-years extended”? If yes:	Another way of expressing reductions in fatality risks is in terms of the "value of statistical life-years extended" (VSLY). For example, if a regulation protected individuals whose average remaining life expectancy was 40 years, then a risk reduction of one fatality would be expressed as 40 life-years extended. This approach allows distinctions in risk-reduction measures based on their effects on longevity. However, this does not automatically mean that regulations with greater numbers of life-years extended will be favored over regulations with fewer numbers of life-years extended. VSL and VSLY ultimately depend on the willingness to pay for various forms of mortality risk reduction, not just longevity considerations. [§III.B.5(b)]
HS5	a	Does the analysis apply these values only to small changes in the risk of death?	Reductions in fatality risks as a result of government action are best monetized according to the willingness-to-pay approach. The value of changes in fatality risk is sometimes expressed in terms of the "value of statistical life" (VSL) or the "value of a life". These terms are confusing at best and should be carefully described when used. It should be made clear that these terms refer to the willingness to pay for reductions in risks of premature death (scaled by the reduction in risk being valued). That is, such estimates refer only to the value of relatively small changes in the risk of death. They have no application to an identifiable individual. [§III.B.5(b)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS5	b	Does the analysis apply the "value of statistical life-years extended" in an appropriate context?	Whether the VSLs (or VSLYs) are chosen explicitly or are an implicit outcome of a cost-effectiveness approach, the choice of estimates ideally should be based on a comparison of the context of the regulation affecting risks and the context of the study or studies being relied on for value estimates. The literature identifies certain attributes of risk that affect value. These attributes include the baseline risk, the extent to which the risk is voluntarily or involuntarily assumed, and features (such as age) of the population exposed to risk. For regulations affecting some segments of the population (e.g., infants) more than those groups which have served as the basis for most of the information used to estimates VSLs (e.g., working-age adults), the use of VSLs from the literature may not be appropriate. At a minimum, differences in regulatory and study contexts should be acknowledged and a rationale for the choice of the value estimate should be provided. [§III.B.5(c)]
HS5	c	Does the analysis acknowledge differences in regulatory contexts and provide a rationale for the choice of "value of statistical life"?	Based on the literature, both the scale of baseline risks and their degree of voluntariness appear to affect VSLs. However, the risk from an involuntary hazard typically is too small to represent a significant portion of baseline risk. (For example, average annual mortality risks for men aged 55-64 are about two per hundred, while occupational fatality risk reductions typically achieved by regulations are between two per ten thousand and two per million annually.) In such cases, it may be legitimate to assume that the valuation of risks can be treated as independent of baseline risk. [§III.B.5(c)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS5	c	Does the analysis rely on a single estimate or distribution of the "value of statistical life-years extended"?	One acceptable explicit valuation approach would be for the agency to select a single estimate of the value of reductions in fatality risk at ordinarily encountered risk levels, or a distribution of such values, and use these values consistently for evaluating all its programs that affect ordinary fatality risks. Where the analysis uses a range of alternative values for reductions in fatality risk, it may be useful to calculate break-even values, as in other sensitivity analyses. This requires calculating the borderline value of reductions in fatality risk at which the net benefit decision criterion would switch over from favoring one alternative to favoring another (i.e., the value of fatality risk at which the net benefits of the two alternatives are equal). This method will frequently be infeasible because of its computational demands but, where feasible, it may be a useful addition to the sensitivity analysis. [§III.B.5(c)]
HS5	d	Does the analysis calculate the "break-even" value of "value of statistical life-years extended" at which the net benefit criterion would switch over from favoring one alternative to favoring another?	
HS5	e	Does the analysis demonstrate that the selected "value of statistical life-years extended" is as accurate as possible given the circumstances being assessed and the state of knowledge?	Values of fatality risk reduction often figure prominently in assessments of government action. Estimates of these values that are as accurate as possible, given the circumstances being assessed and the state of knowledge, will reduce the prospects for inadequate or excessive action. [§III.B.5(b)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS:

5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS

QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS5	f	Does the analysis use methods for estimating the "value of statistical life-years extended" that take account of current age, latency of effect, expected life-years remaining, and social valuation of differential risk reduction?	While there are theoretical advantages to using a value of statistical life-year-extended approach, current research does not provide a definitive way of developing estimates of VSLY that are sensitive to such factors as current age, latency of effect, life years remaining, and social valuation of different risk reductions. In lieu of such information, there are several options for deriving the value of a life-year saved from an estimate of the value of life, but each of these methods has drawbacks. One approach is to use results from the wage compensation literature (which focus on the effect of age on WTP to avoid risk of occupational fatality). However, these results may not be appropriate for other types of risks. Another approach is to annualize the VSL using an appropriate rate of discount and the average life years remaining. This approach does not provide an independent estimate of VSLY; it simply rescales the VSL estimate. Agencies should consider providing estimates of both VSL and VSLY, while recognizing the developing state of knowledge in this area. [§III.B.5(c)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
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5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS

QX#			EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
Where the analysis relies on external estimates of the value of fatality risk reduction, does the analysis use values that are:				As described below, there are several ways that the benefits of mortality risk reduction can be estimated. In considering these alternatives, however, it is important to keep in mind the larger objective of consistency -- subject to statutory limitations -- in the estimates of benefits applied across regulations and agencies for comparable risks. Failure to maintain such consistency prevents achievement of the most risk reduction from a given level of resources spent on risk reduction. The valuation of mortality risk reduction is an evolving area in terms of results and methodology. Agencies generally should utilize valuation estimates, either explicitly or implicitly calculated, that are consistent with the current state of knowledge at the time that the analysis is being performed, and should show that their approach to valuation reflects the current state of knowledge. Significant deviations from the prevailing state of knowledge should be explained. [§III.B.5(b) To value reductions in more voluntarily incurred risks (e.g., those related to motorcycling without a helmet) that are "high," agencies should consider using lower values than those applied to reductions in involuntary risk. When a higher-risk option is chosen voluntarily, those who assume the risk may be more risk-tolerant, i.e., they may place a relatively lower value on avoiding risks. Empirical studies of risk premiums in higher-risk occupations suggest that reductions in risks for voluntarily assumed high risk jobs (e.g., above 10-4 annually) are valued less than equal risk reductions for lower-risk jobs. However, when occupational choices are limited, the occupational risks incurred may be more involuntary in nature. [§III.B.5(c)]
HS6	a		Consistent with other analyses performed by the agency?	
HS6	b		Consistent with other analyses performed by other federal agencies?	
HS6	c		Consistent with the current state of knowledge at the time the analysis was performed? If not:	
HS6	d	1	Does the analysis explain significant deviations from the prevailing state of knowledge?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.B. PRINCIPLES FOR THE ANALYSIS OF BENEFITS: 5. METHODS FOR VALUING HEALTH AND SAFETY BENEFITS				
QX#	EVALUATIVE CRITERION			OMB ECONOMIC ANALYSIS GUIDANCE CITATION
HS6	e		Does the analysis provide estimates of the net incremental cost per unit of reduction in fatality risk? If yes, is this net incremental cost:	<u>An implicit valuation approach that could be used entails calculations of the net incremental cost per unit of reduction in fatality risk (cost per "statistical life saved") of alternative measures, with net incremental costs defined as costs minus monetized benefits</u>. Alternatives can be arrayed in order of increasing reductions in expected fatalities. Generally this will also correspond to increasing incremental cost. (It is possible that there will be some initial economies of scale, with declining incremental costs. If incremental costs are declining over a broad range of alternative measures, it is likely that there are flaws in the definition of the measures or the estimation of their effects.) The incremental cost per life saved then can be calculated for each adjacent pair of alternatives. With this construction, the choice to undertake a certain set of measures while eschewing others implies a lower and upper bound for the value per life saved; it would be at least as large as the incremental cost of the most expensive measure undertaken, but not as large as the cheapest measure not undertaken. In contrast to explicit valuation approaches, this avoids the necessity of specifying in advance a value for reductions in fatality risks. However, <u>the range of values should be consistent with estimated values of reductions in fatality risks calculated according to the willingness-to-pay methodology, and the method should be consistently applied across regulatory decisions (within statutory limitations), in order to assure that regulation achieves the greatest risk reduction possible from the level of resources committed to risk reduction</u>. [§III.B.5(c)]
HS6	f	1	• consistent with estimated values of reductions in fatality risks derived from willingness-to-pay methods?	
HS6	f	2	• consistent with other regulatory decisions?	
			If not:	
HS6	g	3	Are inconsistencies the result of statutory limitations?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 1. GENERAL CONSIDERATIONS					
QX#	EVALUATIVE CRITERION				OMB ECONOMIC ANALYSIS GUIDANCE CITATION
C1	Does the analysis estimate costs based on the principle of opportunity cost? If yes:				The preferred measure of cost is the "opportunity cost" of the resources used or the benefits forgone as a result of the regulatory action. Opportunity costs include, but are not limited to, private-sector compliance costs and government administrative costs. Opportunity costs also include losses in consumers' or producers' surpluses, discomfort or inconvenience, and loss of time. These effects should be incorporated in the analysis and given a monetary value wherever possible. (Producers' surplus is the difference between the amount a producer is paid for a unit of a good and the minimum amount the producer would accept to supply that unit. It is measured by the area between the price and the supply curve for that unit. Consumers' surplus is the difference between what a consumer pays for a unit of a good and the maximum amount the consumer would be willing to pay for that unit. It is measured by the distance between the price and the demand curve for that unit.) [§III.C.1]
C2	a		Is the estimate of opportunity cost expressed in terms of benefits foregone as a consequence of the rule? If yes:		The opportunity cost of an alternative also incorporates the value of the benefits forgone as a consequence of that alternative. For example, the opportunity cost of banning a product (e.g., a drug, food additive, or hazardous chemical) is the forgone net benefit of that product, taking into account the mitigating effects of potential substitutes. As another example, even if a resource required by regulation does not have to be paid for because it is already owned by the regulated firm, the use of that resource to meet the regulatory requirement has an opportunity cost equal to the net benefit it would have provided in the absence of the requirement. Any such foregone benefits should be monetized wherever possible and either added to the costs or subtracted from the benefits of that alternative. Any costs that are averted as a result of an alternative should be monetized wherever possible and either added to the benefits or subtracted from the costs of that alternative. [§III.C.1]
C2	b	1	Are foregone benefits monetized wherever possible and either added to costs or subtracted from benefits?		
C2	b	2	Are averted costs monetized wherever possible and either added to benefits or subtracted from costs?		

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866
III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS:
1. GENERAL CONSIDERATIONS

QX#		EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
C3		Does the analysis report the incremental cost of regulatory alternatives? If yes:	All costs calculated should be incremental, that is, they should represent changes in costs that would occur if the regulatory option is chosen compared to costs in the base case (ordinarily no regulation or the existing regulation) or under a less stringent alternative. Future costs that would be incurred even if the regulation is not promulgated, as well as costs that have already been incurred (sunk costs), are not part of incremental costs. If marginal cost is not constant for any component of costs, incremental costs should be calculated as the area under the marginal cost curve over the relevant range. A schedule of monetized costs should be included that would show the type of cost and when it would occur; the numbers in this table should be expressed in constant, undiscounted dollars. [§III.C.1]
C4	a	Are marginal costs calculated correctly?	
C4	b	Does the analysis provide a schedule showing each type of cost and when it would occur, in constant undiscounted dollars?	
C5		Does the economic analysis identify and explain the data or studies on which cost estimates are based with enough detail to permit independent verification of the results?	The [economic analysis] should identify and explain the data or studies on which cost estimates are based with enough detail to permit independent assessment and verification of the results. Where cost estimates are derived from a statistical study, the [economic analysis] should provide sufficient information so that an independent observer can determine the representativeness of the sample, the reliability of extrapolations used to develop aggregate estimates, and the statistical significance of the results. [§III.C.1]
C6		Does the economic analysis provide sufficient information so that an independent observer can determine the representativeness of samples, the reliability of extrapolations used to develop aggregate estimates, and the statistical significance of the results?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 1. GENERAL CONSIDERATIONS			
QX#	EVALUATIVE CRITERION		OMB ECONOMIC ANALYSIS GUIDANCE CITATION
C7	a	Does the calculation of costs, including indirect costs of risk reduction, reflect the full probability distribution of potential consequences?	As with benefit estimates, the calculation of costs should reflect the full probability distribution of potential consequences. Extreme values should be weighted, along with other possible outcomes, by estimates of their probability of occurrence based on the available evidence to estimate the expected result of a proposed regulation. If fundamental scientific disagreement or lack of knowledge precludes construction of a scientifically defensible probability distribution, costs should be described under plausible alternative assumptions, along with a characterization of the evidence underlying each alternative view. This will allow for a reasoned determination by decisionmakers of the appropriate level of regulatory action. That level of action should derive from the decisionmaking process, not from adjusting cost estimates upward or downward at the information-gathering or analytical stages of the process. [§III.C.1]
C7	b	Does the analysis present the probability distribution of costs?	
C7	c	Does the analysis present extreme estimates as complements to central tendency and other estimates?	
Where fundamental scientific disagreement or lack of knowledge prevents construction of a scientifically defensible probability distribution:			
C8	a	Does the economic analysis describe costs under plausible assumptions underlying each alternative view?	
C8	b	Does the economic analysis refrain from adjusting cost estimates to account for uncertainty?	

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 1. GENERAL CONSIDERATIONS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
C9	Does the analysis avoid double-counting of costs?	As in the calculation of benefits, costs should not be double counted. Two accounting cost concepts that should not be counted as costs in benefit-cost analysis are interest and depreciation. The time value of money is already accounted for by the discounting of benefits and costs. Generally, depreciation is already taken into account by the time distribution of benefits and costs. One legitimate use for depreciation calculations in benefit-cost analysis is to estimate the salvage value of a capital investment. [§III.C.1]
C10	Does the analysis base cost estimates on credible changes in technology over time?	Estimates of costs should be based on credible changes in technology over time. For example, a slowing in the rate of innovation or of adoption of new technology because of delays in the regulatory approval process or the setting of more stringent standards for new facilities than existing ones may entail significant costs. On the other hand, a shift to regulatory performance standards and incentive-based policies may lead to cost-saving innovations that should be taken into account. In some cases agencies are limited under statute to considering only technologies that have been demonstrated to be feasible. In these situations, it may also be useful to estimate costs and cost savings assuming a wider range of technical possibilities. [§III.C.1]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 2. REAL COSTS VERSUS TRANSFER PAYMENTS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
T1	Does the analysis correctly distinguish between real costs and transfer payments?	An important, but sometimes difficult, problem in cost estimation is to distinguish between real costs and transfer payments. Transfer payments are not social costs but rather are payments that reflect a redistribution of wealth. While transfers should not be included in the [economic analysis'] estimates of the benefits and costs of a regulation, they may be important for describing the distributional effects of a regulation. Scarcity rents and monopoly profits, insurance payments, government subsidies and taxes, and distribution expenses are four potential problem areas that may affect both social benefits and costs as well as involve significant transfer payments. [§III.C.2]
T2	Does the analysis correctly treat scarcity rents and monopoly profits as transfer payments?	Scarcity rents and monopoly profits. If, for example, sales of a competitively produced product were restricted by a government regulation so as to raise prices to consumers, the resulting profit increases for sellers are not a net social benefit of the rule, nor is their payment by consumers generally a net social cost, though there may be important distributional consequences. The social benefit-cost effects of the regulation would be represented by changes in producers' and consumers' surpluses, including the net surplus reduction from reduced availability of the product. The same conclusion applies if the government restriction provides an opportunity for the exercise of market power by sellers, in which case the net cost of the regulation would include the cost of reduced product provision due both to the government mandate and the induced change in market structure. [§III.C.2(a)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 2. REAL COSTS VERSUS TRANSFER PAYMENTS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
T3	Does the analysis correctly treat insurance payments as transfer payments?	Insurance payments. Potential pitfalls in benefit-cost analysis may also arise in the case of insurance payments, which are transfers. Suppose, for example, a worker safety regulation, by decreasing employee injuries, led to reductions in firms' insurance premium payments. It would be incorrect to count the amount of the reduction in insurance premiums as a benefit of the rule. The proper measure of benefits for the [economic analysis] is the value of the reduction in worker injuries, monetized as described previously, plus any reduction in real costs of administering insurance (such as the time insurance company employees needed to process claims) due to the reduction in worker insurance claims. Reductions in insurance premiums that are matched by reductions in insurance claim payments are changes in transfer payments, not benefits. [§III.C.2(b)]
T4	Does the analysis correctly treat taxes as transfer payments?	Indirect taxes and subsidies. A third instance where special treatment may be needed to deal with transfer payments is the case of indirect taxes (tariffs or excise taxes) or subsidies on specific goods or services. Suppose a regulation requires firms to purchase a $10,000 piece of imported equipment, on which there is a $1,000 customs duty. For purposes of benefit-cost analysis, the cost of the regulation for each firm ordinarily would be $10,000, not $11,000, since the $1,000 customs duty is a transfer payment from the firm to the Treasury, not a real resource cost. This approach, which implicitly assumes that the equipment is supplied at constant costs, should be used except in special circumstances. Where the taxed equipment is not supplied at constant cost, the technically correct treatment is to calculate how many of the units purchased as a result of the regulation are supplied from increased production and how many from decreased purchases by other buyers. The former units would be valued at the price without the tax and the latter units would be valued at the price including tax. This calculation is usually difficult and imprecise because it requires estimates of supply and demand elasticities, which are often difficult to obtain and inexact. Therefore, this treatment should only be used where the benefit-cost conclusions are likely to be sensitive to the treatment of the indirect tax. While costs ordinarily should be adjusted to remove indirect taxes on specific goods or services as described here, similar treatment is not warranted for other taxes, such as general sales taxes applying equally to most goods and services or income taxes. [§III.C.2(c)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 III.C. PRINCIPLES FOR THE ANALYSIS OF COSTS: 2. REAL COSTS VERSUS TRANSFER PAYMENTS		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
T5	Does the analysis correctly count indirect expenditures as costs only to the extent that they correspond to increased real resource commitments?	Distribution expenses. The treatment of distribution expenses is also a source of potential error. For example, suppose a particular regulation raises the cost of a product by $100 and that wholesale and retail distribution expenses are on average 50 percent of the factory-level cost. It would ordinarily be incorrect to add a $50 distribution markup to the $100 cost increase to derive a $150 incremental cost per product for benefit-cost analysis. Most real resource costs of distribution do not increase with the price of the product being distributed. In that case, either distribution expenses would be unchanged or, if they increased, the increase would represent distributor monopoly profits. Since the latter are transfer payments, not real resource costs, in neither case should additional distribution expenses be included in the benefit-cost analysis. However, increased distribution expenses should be counted as costs to the extent that they correspond to increased real resource costs of the distribution sector as a result of the change in the price or characteristics of the product, or if regulation directly affects distribution costs. [§III.C.2(d)]

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 DECISION MAKING PRINCIPLES		
QX#	Evaluative Criterion	OMB Economic Analysis Guidance Citation
	None	None

ECONOMIC ANALYSIS UNDER EXECUTIVE ORDER 12866 JUDICIAL REVIEW		
QX#	EVALUATIVE CRITERION	OMB ECONOMIC ANALYSIS GUIDANCE CITATION
	None	None