REGULATORY PROGRAM
OF THE
UNITED STATES GOVERNMENT
APRIL 1, 1992 - MARCH 31, 1993

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THE REGULATORY MESSAGE OF THE PRESIDENT

TO THE SPEAKER OF THE HOUSE OF REPRESENTATIVES AND THE PRESIDENT OF THE SENATE:

This *Regulatory Program of the United States Government* compiles, under one cover, my Administration's regulatory programs, goals, and objectives for the year 1992–93. By providing a preview of significant regulatory activities, we reaffirm our unwavering commitment to agency accountability for improved regulation, intragovernmental coordination, and public and congressional access to our regulatory agenda and priorities. Our regulatory program constitutes a coherent, consistent, and constructive program with unity of purpose. Our purpose is to promote economic growth while maintaining this Administration's strong tradition of upholding health, safety, and environmental quality as top priority.

Federal regulations to implement the laws that safeguard the Nation's health and safety, environment, and economic well-being are essential to maintain and improve the public welfare. Excessively burdensome regulation, however, hampers the creativity and energy of the American people. Regulation should instead channel this creativity and energy to maximize social and economic benefits. The concepts of "efficiency" and "maximized net benefits" guide our regulatory program in promoting a strong economy and protecting our citizenry.

In my State of the Union Address, I called for a "top-to-bottom" review of Federal regulation. This occurred during our 90-day regulatory review and moratorium. That period was followed by a 120-day extension to implement significant reforms. During this 7-month period, we strove to eliminate many overly burdensome Federal regulations and have promulgated new regulations that will save American consumers and workers billions of dollars. We also extended the review and moratorium for an additional year.

The Federal regulatory environment must be dynamic and changing to reflect a changing world. It must be lean and focused on specific areas where Federal regulation contributes to the public good. An excessive or static regulatory system loses its ability to solve problems and instead creates them by forcing individuals, businesses, and State and local governments into expensive compliance exercises. We have "cleaned house" by scrapping obsolete and unduly burdensome regulations; by modifying and updating current rules; and by implementing new rules to release American capital and the Nation's competitive spirit.

Everyone pays for overly burdensome regulation. Regulatory costs must be reduced. This report embodies our efforts to aid in that quest.

GEORGE BUSH

THE WHITE HOUSE
January 15, 1993

PART I. OVERVIEW

PART I. OVERVIEW

This *Regulatory Program of the United States Government* is the third of the Administration of President Bush. It is the seventh to be issued since Executive Order No. 12498, signed by President Reagan, established the Regulatory Program planning process in January 1985. The purpose of this regulatory planning process is to promote sound government policy by improving Executive Branch regulatory decisionmaking and coordination. The process also provides Congress and the public with an advance view of the most important regulatory decisions for the year April 1, 1992, through March 31, 1993.

Part I, entitled "Overview," summarizes the Regulatory Program and the need for improving the management of the Federal Government's rulemaking process. The overview includes summaries of:

- This year's Regulatory Program;
- Presidential regulatory oversight under Executive Order No. 12291;
- The impact of regulation on U.S. competitiveness and the role of the Council on Competitiveness; and
- The results of the President's regulatory moratorium.

The overview also includes sections entitled "Economic Incentive Approaches to Regulation" and "Health-Health Analysis: A New Way to Evaluate Health and Safety Regulation."

Part II, entitled "The Regulatory Program by Agency," contains individual chapters for each regulatory agency. At the beginning of each chapter is a summary of the planned regulatory strategy and priorities of each agency, followed by a summary description of the significant regulatory actions (SRAs) planned by agencies for the next year.

This Year's Regulatory Program

Executive Order No. 12498 requires the annual publication of the *Regulatory Program of the United States Government*. The document outlines regulatory priorities and describes important actions of Executive Branch regulatory agencies. It also represents a process for planning and coordinating agency actions to ensure that they are consistent with both law and Presidential policies. The Regulatory Program allows Congress and the American people to understand the policy directions of the regulatory agencies and the Executive Branch as a whole. The actions listed in the Program represent the major initiatives of the regulatory agencies. These may, of course, be revised over time, after further data collection and analysis, and through Administration decisions to guide and coordinate these actions.

This year's Regulatory Program contains descriptions of 383 significant regulatory actions from 25 agencies. These include significant final rules, proposed rules, and prerulemaking activities that may lead to rulemaking in the future. The descriptions published below in Part II outline the issues agencies see as requiring immediate attention, as well as the steps each agency is taking to ensure the cost-effectiveness of the regulatory approach it proposes.

Below is a summary of the major regulatory agencies' significant regulatory activities.

DEPARTMENT OF AGRICULTURE

As part of the President's regulatory moratorium and review, the Secretary of Agriculture announced several initiatives that the Department has estimated will collectively reduce the regulatory burden on the economy by over $1 billion. Benefits include reducing the cost of food labeling and significantly modifying the food labeling approval program (saving $300 million in the first year, with total present value benefits of $860 million). Other Department activities involve Agricultural Marketing Service pesticide recordkeeping; commodity program rules to be issued by the Agricultural Stabilization and Conservation Service; Farmers Home Administration actions regarding multifamily housing assistance and housing for the rural homeless and migrant workers; Food and Nutrition Service rules regarding the Women, Infants, and Children (WIC) program; and Forest Service rules that will establish a below-cost timber sales policy.

DEPARTMENT OF COMMERCE

Commerce's Bureau of Export Administration (BXA) will be revising its regulations to implement the President's decision to free up exports of CoCom Dual-Use List items on the Munitions List unless significant national security interests would be jeopardized. BXA will also continue its revision of rules to implement international agreements. The Interna-

tional Trade Administration will be revising its antidumping and countervailing duty regulations. The National Oceanic and Atmospheric Administration (NOAA) will be revising its rules related to the management of the nation's fishery resources, including efforts to develop transferable permit systems in certain fisheries. NOAA will also be developing proposals to designate additional national marine sanctuaries. The Patent and Trademark Office will be considering a plan to provide for electronic processing of patent applications.

DEPARTMENT OF EDUCATION

The Secretary of Education's regulatory strategy focuses on supporting the President's AMERICA 2000 initiative, deregulation, and increasing program accountability and management of grant programs. For example, the Department is revising the regulations governing the Guaranteed Student Loan Program and is considering additional actions to reduce the unreasonably high student loan default rate. The Department will also revise, as appropriate, regulations to ensure the proper use of Federal funds and the achievement of specified program results.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

HHS has completed or is working on about 30 regulatory reform activities. These reforms have the potential of benefiting the American economy, improving the health of millions of Americans, relieving the burden on tens of thousands of small providers and small businesses, and facilitating future innovations by the private sector. For example, final Health Care Finance Administration (HCFA) rules have been published related to carrier jurisdiction for claims for durable medical equipment, reimbursement to federally qualified health centers, and coordination of Medicaid with the supplemental food program.

Also, HCFA rules will be issued which permit private organizations or State licensing programs to qualify as alternatives to the federally operated Clinical Laboratory Improvements Act program. Regulations of the Administration for Children and Families (ACF) will establish the at-risk child care program, allowing States to provide funds for child care for families at risk of becoming welfare recipients. Other ACF rules will be crafted to implement the child care and development block grant program. Other significant Department initiatives include accelerated approval of new drugs and biologics, a threshold for regulation policy for food additives, and the administrative waiver process for AFDC programs.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Most of HUD's current regulatory program reflects the continuing effort to implement the National Affordable Housing Act (NAHA). NAHA authorized seven Homeownership and Opportunity for People Everywhere (HOPE) programs (in addition to other new programs) and major changes to existing HUD authorities. The HOPE programs provide both economic independence and opportunities for self-sufficiency, as well as affordable housing, to low- income Americans. The HOPE programs include HOPE grants; family self-sufficiency; prepayment of low-income housing mortgages; HOPE for elderly independence; and shelter-plus care. Other programs created in the new Act include the HOME investment in affordable housing program.

DEPARTMENT OF THE INTERIOR

Interior regulations will meet statutory mandates while encouraging the functioning of competitive markets, minimizing regulatory burdens, and operating departmental programs efficiently and with fiscal responsibility. This next year, the Department will continue its review and possible revision of its natural resource damage asessment rules. The Bureau of Land Management's regulatory objectives will be to carry out requirements of the Federal Oil and Gas Royalty Management Act; to recover reasonable costs of operating programs that confer special benefits on identifiable members of the public; and to ensure a fair-market-value assessment for use of Federal land. The Minerals Management Service will continue to develop and revise regulations to promote safe and efficient operations on the Outer Continental Shelf and to provide the guidance needed to ensure full and timely collection and distribution of mineral bonuses, rents, and royalties. Major regulatory efforts by the Office of Surface Mining will include final rules concerning valid existing rights, and rules to implement the 1990 reauthorization of the Surface Mining Control and Reclamation Act. Finally, the Department's Fish and Wildlife Service will continue its regulatory responsibilities under the Endangered Species and Marine Mammal Protection Acts.

DEPARTMENT OF LABOR

In the coming year Labor will be working on more than 70 significant regulations. The Department's Employment Standards Administration (ESA) will be reviewing the regulations that define executive, administrative, and professional employees who are exempt from the Fair Labor Standards Act's minimum

wage and overtime provisions. ESA will also continue with rulemaking to eliminate the ban on employment of homeworkers in the women's apparel industry. The Employment and Training Administration expects rulemaking in several areas: these include employee benefits related to airline deregulation; prevailing practice determinations regarding temporary employment of aliens in agriculture; and limitations on longshore work by alien crewmembers. Mine Safety and Health Administration rulemaking will include efforts to implement statutory provisions such as the recent revision of the civil penalty regulations; improvement of health rules, such as updating standards for airborne contaminants; and development of new standards to address technological changes in the mining industry, such as the increased use of longwall mining in underground coal mines.

The Department's Occupational Safety and Health Administration (OSHA) will continue its work updating permissible exposure limit (PEL) standards. OSHA will consider the need for further regulation of the construction industry, including extending PELs and focusing on cranes, derricks, fall protection, scaffolds, and lockout-tagout. OSHA also plans rulemaking on MDA, cadmium, formaldehyde, and methods of compliance. Finally, the Pension and Welfare Benefits Administration will continue rulemaking to administer the provisions of the Employee Retirement Income Security Act.

DEPARTMENT OF STATE

State is primarily responsible for developing foreign policy and conducting foreign relations; consequently its regulatory responsibilities are limited and often specialized. During the coming year, the Department will be conducting rulemaking in two important areas. First, important modifications will be made to the International Traffic in Arms Regulations to simplifiy and clarify them, and to reduce their regulatory burden to exporters. Second, as a result of recent statutory changes, the Department must promulgate regulations which make substantial changes to the way in which applicants are selected in the diversity immigrant visa lotteries.

DEPARTMENT OF TRANSPORTATION

Transportation has been a leader in Federal efforts to reform and manage regulations. Responding to the President's regulatory moratorium and review of January 28, 1992, a Departmental team reviewed 682 regulations, and identified over 300 action items that will provide benefits to the economy. Long term economic growth benefits are likely to exceed $7.3 billion. Additional savings from reduced regulatory burden will very likely exceed $196 million per year. Outright eliminations of obsolete rules will delete 332 pages from the Code of Federal Regulations. DOT's rulemaking efforts for the next year will focus on both meeting statutory requirements, and instituting reforms identified during the moratorium.

The Federal Aviation Administration (FAA) will continue regulatory reviews of aircraft, maintenance, and rebuilding standards and of certification of pilots and flight instructors. FAA will also undertake rulemaking in areas such as international harmonization of standards and "open skies" agreements. Rulemaking by the Federal Highway Administration (FHWA) will focus on requirements for private motor carriers of passengers and commercial motor-vehicle driver licensing and testing. The National Highway Traffic Safety Administration (NHTSA) will be developing rules related to rollover protection, side-impact protection for light trucks and multipurpose passenger vehicles, and improved crash protection systems. In addition, NHTSA will continue rulemaking efforts in medium-and heavy-truck safety. The Research and Special Programs Administration (RSPA) will continue rulemaking related to the transportation of hazardous materials, including minimum thickness requirements for tank car tanks and revised requirements for head shields and thermal protection on tank cars. Also, RSPA will proceed with rulemaking to improve pipeline safety. The Federal Rail Administration (FRA) will develop rules to maintain safety while allowing railroads to establish more efficient operating practices. Finally, the Coast Guard will continue rulemaking to meet responsibilities mandated by the Oil Pollution Act of 1990.

DEPARTMENT OF THE TREASURY

Planned regulations of Treasury's Internal Revenue Service deal almost exclusively with measuring tax liability or administering, reporting, or collecting taxes. This year, principal regulatory actions will be to promulgate regulations interpreting and implementing the Tax Reform Act of 1986, the Revenue Act of 1987, the Technical and Miscellaneous Revenue Act of 1988, and the Revenue Reconciliation Acts of 1989 and 1990. The Financial Management Service will be issuing rules to implement the Cash Management Improvement Act, to facilitate the efficient flow of monies between the Federal Government and the States; and will review the Automated Clearing House (ACH) regulations, to provide a basis for broader and integrated use of the ACH network to meet the future payment, collection, and information needs of the Federal Government. A major regulatory goal of the Office of the Comptroller of the Currency will be to

implement the Federal Deposit Insurance Corporation Improvements Act of 1991 (FDICIA). The Office of Thrift Supervision will finalize revisions to its uniformly applicable capital regulations for savings associations and will also be implementing the various regulations mandated by the FDICIA. Finally, the Customs Service will undertake several regulatory actions that will affect the traveling and importing public, customs brokers, carriers, and commercial importers. Actions to improve the efficiency of Customs operations are also anticipated.

DEPARTMENT OF VETERANS AFFAIRS

Although Veterans Affairs is not primarily a regulatory agency, it does issue rules to implement laws providing for veterans' benefits. For example, this year the VA will proceed with rulemaking regarding claims based on exposure to herbicides containing dioxin and claims based on exposure to ionizing radiation.

ENVIRONMENTAL PROTECTION AGENCY

EPA will be developing and issuing rules during the next year across a wide range of areas to meet the requirements of numerous statutes, including the Clean Air Act Amendments of 1990. During the 90-day moratorium and review, EPA identified 97 regulatory and institutional reforms and initiatives which collectively will save the economy $4 to $8 billion per year. All of these actions are consistent with the Agency's legal mandates and environmental goals.

EPA will be attempting this year to set priorities and develop regulations based on several general principles, to the extent permitted by statute. Although EPA's mission is to reduce the level of risk that pollution poses to health and the quality of the environment, EPA will seek to control risks as efficiently and cost-effectively as possible and provide environmental protection while fostering continued economic growth. EPA will focus its limited resources on cases of greatest risk where solutions are reasonable and legal authority is clear. This policy requires sound scientific data, careful evaluation of all aspects of an environmental problem, and consideration of innovative solutions that maximize net benefits to society. EPA will make full use of innovative approaches involving economic incentives and market-based emissions trading programs to ensure that industries have the flexibility to achieve required pollution reductions at the lowest possible cost. EPA is also committed to improving its science base, since strong science lies at the heart of accurately assessing environmental risks.

Presidential Regulatory Oversight

President Bush seeks a regulatory structure that appropriately balances the benefits and costs of Federal regulations for the country's long-term well-being, and ensures that the regulatory activity of the Government produces net benefits for its citizens. Presidential regulatory oversight is a process necessary to ensure that agencies of the United States Government meet these challenges in a manner consistent with law and Administration policies. The Regulatory Program reflects the President's commitment to that process. The Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) and the Council on Competitiveness, chaired by the Vice President, have been charged by the President to serve as stewards of Presidential regulatory oversight.

Executive Order Nos. 12291 and 12498 establish principles of sound regulatory management for agencies to follow in developing regulations. The Orders combine with the Paperwork Reduction Act of 1980 to ensure that the paperwork and regulatory burdens the Government imposes are necessary and cost-effective.

Both Executive orders are the outgrowth of successive Presidents' efforts since the 1970s to establish procedures for Executive regulatory oversight. Executive Order No. 12291 sets out fundamental regulatory principles (see appendix I for the complete text). It directs agencies to justify the need for regulations, weigh their costs and benefits, and choose the most cost-effective regulatory options. It also directs OIRA to review the agencies' rationales and assumptions and to ensure that agency regulations are consistent with Presidential policies and statutory authority. Executive Order No. 12498, as noted above, established the *Regulatory Program of the United States Government* as a vehicle for agency regulatory planning and coordination (see appendix II for the complete text of the Order).

Taken together, the two Executive orders form a coherent framework for Federal regulation. Congress and the President, through the enactment of legislation, have charged agencies with the ultimate responsibility for regulating within their specific policy areas. Presidential regulatory oversight promotes a careful weighing of such actions, and also seeks to harmonize conflicts between competing agency mandates, fulfilling the President's Constitutional obligation to manage the Executive Branch. The establishment of a formal oversight process during the past decade has provided a method for coordinating the Federal Government's maze of regulatory require-

ments, and for increasing benefits and lowering costs. In the 1990s this process will guide the continuing evolution of regulations that are both effective and prudent.

Executive Order No. 12291

Executive Order No. 12291, which established the current process of Presidential regulatory oversight, provides agencies with basic tools and standards for evaluating the actions they contemplate. The Order requires review by OIRA of the policies and regulations that agencies develop to ensure consistency with the Order, with Presidential regulatory policies and principles, and with other agencies' mandates and actions.

Executive Order No. 12291 requires that OIRA review draft rules before they are issued for public comment, and again before they are published in final form. The Order defines "regulation" or "rule" broadly to include all agency policy guidance that affects the public, but excepts national security, management, and emergency rulemaking.

OIRA reviews these draft proposed and final rules to determine whether agencies have observed the principles contained in Executive Order No. 12291. Under these principles, agencies are to issue regulations that, consistent with law:

- Are based on adequate information;
- Do not conflict with other agencies' regulations and mandates;
- Provide maximum net benefits to society; and
- Conform to Administration policies and regulatory principles to the extent the law permits.

Also, regulations should conform to the more specific guidelines that the Task Force on Regulatory Relief issued in 1983, and to both broad and specific Presidential policies and principles. The principles call for:

- Issuing regulations only on evidence that the benefits would outweigh the costs;
- Avoiding regulation of prices and entry in competitive markets;
- Prescribing uniform standards for private goods and services only where products are needlessly unsafe, product variations are wasteful, or private standards have failed to correct problems;
- Basing health and safety regulations on scientific risk assessments and addressing risks that are real and significant rather than hypothetical or remote;
- Addressing ends not means in health, safety, and environmental regulations;
- Licensing and permitting new products swiftly, based on standards clearly defined in advance; and
- Encouraging unrestricted exchange of private rights or obligations that regulations create.[1]

All regulations must conform to statutory authorization and requirements. Agency proposals also need to be consistent with other agencies' policies and actions, to avoid conflicting requirements.

Agencies need to submit regulatory impact analyses (RIAs) to OIRA with all draft rules that the Order defines as "major."[2] The RIA needs to contain an explication of the rule's full social impact, quantified where possible as to costs and benefits. Agencies also must detail and similarly evaluate alternatives. Preparing an RIA allows agency heads to evaluate the need for and consequences of possible action. The analysis also helps them decide between alternative approaches to a rulemaking. The statement provides OIRA—and the public—with a broader understanding of the issues that may be involved. Detailed regulatory impact analysis guidance is included in appendix V.

OIRA PROCEDURES FOR IMPLEMENTING EXECUTIVE ORDER NO. 12291

OIRA recognizes the need to keep Congress and the public fully informed of its regulatory oversight activities under Executive Order No. 12291.[3] The Office has adopted a series of disclosure procedures that include maintaining public files and notifying agencies of outside contacts regarding those agencies' rulemakings. The Administrative Conference of the United States and the American Bar Association Section of Administrative Law and Regulatory Practice have both endorsed these procedures.

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[1] Report of the Presidential Task Force on Regulatory Relief, August 11, 1983, pp. 19–54. See also section 1(d), Executive Order No. 12498, January 4, 1985 (50 FR 1036, January 8, 1985).

[2] A rule is generally considered "major" if it is likely to result in an annual impact of more than $100 million, or in a major increase in costs or prices, or in significant effects on competition, employment, investment, productivity of a particular industry, or if it is designated as major by OIRA or by the agency.

[3] See appendix III, Memorandum for the Heads of Departments and Agencies Subject to Executive Order Nos. 12291 and 12498, entitled "Additional Procedures Concerning OIRA Reviews Under Executive Order Nos. 12291 and 12498 [Revised]," from Wendy L. Gramm, Administrator, OIRA, dated June 13, 1986, procedure #11 (hereinafter referred to as "OIRA Disclosure Procedures #11"). (See also May 30, 1985, memorandum entitled "OIRA Procedures #3", from the Deputy Administrator to OIRA staff, p.5, also in appendix III.)

In 1985 OIRA adopted provisions for maintaining two kinds of information in the public files relating to regulatory reviews. One includes all comments received from members of the public. The other consists of all final OIRA recommendation or action letters sent to agencies under Executive Order No. 12291. In 1986 OIRA amended these procedures to include public disclosure and release, upon request, and following publication of a rule, of all materials the agency provided for Executive Order No. 12291 review, including the draft rule itself.[4] The Freedom of Information Act does not require such documents to be released, on the grounds that they are deliberative and predecisional in nature, and that disclosure could chill the full and frank exchange of views between the President and appointees that is critical to an effective policymaking process. However, OIRA has instituted these voluntary disclosure procedures to ensure that members of the public can understand, if they so desire, the effects of OIRA's regulatory oversight.[5]

Furthermore, OIRA, as a matter of policy, limits contacts with parties outside the Federal Government regarding the substance of a rule under Executive Order No. 12291 review. Career policy analysts may have no such contacts. The OIRA Administrator and Deputy Administrator, and those specifically authorized by them, do so only rarely. And, since 1986, OIRA has agreed to disclose any such contacts with outside parties when the rule involves the Departments of Housing and Urban Development, Labor, Transportation, and the Treasury, or the Environmental Protection Agency.

Competitiveness and Regulation

U.S. competitiveness in an increasingly global economy depends on a dynamic and innovative private sector. The Federal Government can foster competitiveness by encouraging a vigorous and competitive market environment, both in this country and in the world economy. One of the more important steps the Federal Government can take in promoting a competitive market environment is to cut back and avoid unnecessary regulation.

Government regulation is important to advancing certain societal goals such as public health and safety and protection of the environment. Market forces alone often do not achieve such goals. But regulation imposes substantial costs—on businesses, State and local governments, and consumers. This hinders U.S. competitiveness both at home and abroad. Federal regulations directly influence business decisions: they can cause a company to change its production process or the wages it pays employees. They can also render a company's products uncompetitive in certain markets. By governing the manner in which business can be conducted, regulation alters the cost structure for producing goods.

The costs of Federal regulation are significant. Though estimates vary, current Federal regulations probably impose direct costs on the U.S. economy of several hundred billion dollars a year. The paperwork burden of Federal regulations alone has been conservatively estimated at nearly 7 billion person-hours a year. Because of the magnitude of the effect of regulation on the Nation's economy, it is important to assess, on a continuing basis, the need for both new and existing regulations; to balance the immediate objectives of such regulation with the broader objectives of promoting the Nation's welfare; and to promote a reliance on markets wherever such opportunities exist.

THE ROLE OF THE COUNCIL ON COMPETITIVENESS

To assist regulatory oversight, President Bush announced in *Building a Better America*, on February 9, 1989, that Vice President Quayle would chair the Council on Competitiveness:

> The Council will review regulatory issues, and such other issues as may be referred by the President, bearing on competitiveness. In reviewing regulatory matters, the Council will be continuing the work of the former President's Task Force on Regulatory Relief—chaired in the Reagan Administration by then Vice President Bush.

In June 1990 the President reaffirmed the role of the Council, "as the appropriate council to review issues raised in conjunction with the regulatory program under Executive Order 12498." The Council's permanent members, in addition to the Vice President, include the Secretary of the Treasury, the Attorney General, the Secretary of Commerce, the White House Chief of Staff, the Director of the Office of Management and Budget, and the Chairman of the Council of Economic Advisers. When the Council meets to discuss a regulatory issue, it invites the head of the agency responsible for issuing the regulation as well as the heads of those other agencies affected by or otherwise interested in the regulation.

[4] See OIRA disclosure procedures #1, #2, #3, and #10, in appendix III.

[5] For OMB's legal ability to withhold Executive Order No. 12291 review material under the Freedom of Information Act, see the Memorandum Opinion in *National Tank Truck Carriers* v. *OMB*, C.A. No. 82-93 (D.C.D.C., May 28, 1982).

During the past year the Council has worked to ensure that the burdens of regulation on the Nation are minimized and that America's competitiveness is encouraged, particularly as the country recovers from recession. In a meeting with agency heads last spring, Vice President Quayle reaffirmed the Administration's commitment to remove excessive regulatory burdens on the economy and to stop regulatory "creep."

The Council has worked with agencies, providing advice and guidance as they develop regulations, to ensure that they meet statutory requirements and minimize burdens on the job-producing sector (including small businesses), State and local governments, and individuals. The Council also coordinates interagency issues associated with regulation, ensuring that significant regulatory decisions are enriched by the active participation of representatives from across the Executive Branch.

The Council has, for example, worked with the Department of the Treasury on ways to simplify the income tax filing process; with the Food and Drug Administration on orphan drugs and the drug approval process; with the Department of Justice on "takings" (that is, regulatory taking of private property under the Fifth Amendment's just compensation clause) and on civil litigation reform; and with the Environmental Protection Agency on such issues as wetlands and lender liability. The Council has also chaired working groups on biotechnology and critical technologies, producing papers that articulate Administration policies in these areas.

Four goals guide the Council in its activities. These goals focus on maintaining and improving America's competitiveness and public welfare. The goals, more specifically, are as follows:

1. Reduced regulatory burdens on the free enterprise system through ensuring burden reduction and conducting ongoing efforts to identify opportunities to deregulate our free enterprise economy.

2. Development of human resources to provide for a knowledgeable, skilled, and flexible work force. The Council is on the cutting edge of education reform, advocating "choice" programs to provide a market basis for improving our Nation's educational system.

3. Reduced burdens on scientific and technological progress to help bring science to market. The Council examines policies regarding commercialization of Government research, Federal procurement, and Federal funding of research and development;

4. Free flow of investment capital necessary for economic growth and reduced tax burdens on investment capital.

Results of the President's Regulatory Moratorium

During his January 1992 State of the Union Address, President Bush announced a 90-day regulatory review and agency moratorium. He set aside a 3-month period in which designated Federal regulatory agencies would assess the efficacy and appropriateness of their current regulations, modifying or eliminating them as necessary. The President noted that the moratorium was to provide agencies with the opportunity to "carry out a top-to-bottom review of all regulations, old and new—to stop the ones that will hurt growth, and speed up those that will help growth." This initial 90-day period was extended an additional 120 days at the end of April 1992, and the moratorium was further extended for 1 year by the President in August 1992.

To promote passage of regulations providing net benefits and encouraging economic growth, the President outlined specific criteria for agencies to follow:

- The expected benefits to society of any regulation should clearly outweigh the expected costs it imposes on society;
- Regulations should be fashioned to maximize net benefits to society;
- To the maximum extent possible, regulatory agencies should setperformance standards instead of prescriptive command-and-control requirements, thereby allowing the regulated community to achieve regulatory goals at the lowest possible cost;
- Regulations should incorporate market mechanisms to the maximum extent possible; and
- Regulations should provide clarity and certainty to the regulated community and should be designed to avoid needless litigation.

By both conducting a review of current regulations and expediting passage of growth-promoting regulations, the Executive Branch worked both to spark the economy and to liberate it.

The Council on Competitiveness coordinated Executive Branch implementation of the 90-day regulatory review and moratorium. Offering guidance during the moratorium was a working group of the Council headed by the Counsel to the President and the Chairman of the Council of Economic Advisers. The Vice President referred agencies to OIRA as a first contact point concerning moratorium implementation. In addition, OIRA continued existing reviews under the Paperwork Reduction Act, Executive Order No. 12291, and Executive Order No. 12498 (the Regulatory Program).

Certain independent agencies included in the 90-day moratorium were also asked to participate in the moratorium. Normally delinked from Executive Order No. 12291 review, independents were asked to adhere to the regulatory review standards established in the President's moratorium memorandum.

The achievements of the first 90 days of the moratorium were identified by the President on April 29. It was estimated that $15 to $20 billion were saved as a result of actions taken or planned during the 90-day review.

Following are some of the most significant reforms completed or initiated during the 90-day review:

- Accelerating Approval of New Drugs: the FDA announced important reforms that will reduce by as much as 4 years the overall time it takes to develop breakthrough drugs. These reforms will give patients earlier access to drugs for diseases such as cancer, AIDS, Alzheimer's disease, depression, and cystic fibrosis.
- Protecting Workers' Rights: The President signed an Executive order requiring Federal contractors to inform employees of their rights under the Supreme Court's Beck Decision, helping to ensure that nonunion members are not forced, through mandatory union dues, to support political causes with which they disagree.
- Biotechnology: Under a new policy developed by the President's Council on Competetiveness, Federal regulators will exercise oversight only when a specific product poses an unreasonable risk. With the help of this new policy, the U.S. biotechnology industry is expected to grow from a $4 billion to a $50 billion a year industry by the year 2000.
- Reducing Financing Costs: The Office of Thrift Supervision issued a rule permitting nationwide branching by savings associations. This change will foster safe, sound operations and will result in savings to borrowers and lenders of up to $1.5 billion annually.
- Helping Small Businesses Raise Capital: The Securities and Exchange Commission has made it possible for thousands of small businesses to use streamlined securities registration forms. These changes could save more than $180 million in legal and accounting fees if used by only one-quarter of the eligible small businesses.
- Reducing Transportation Costs: The Interstate Commerce Commission initiated a proceeding to eliminate unnecessary regulations on some 52,000 small trucking companies. The Department of Transportation has implemented an "open skies" policy, to open access to U.S. markets for European countries willing to permit U.S. air carriers access to their markets. Increased competition will lead to lower fares and increased spending by foreign visitors to the U.S.
- Implementing the National Energy Strategy: The Federal Energy Regulatory Commission has implemented reforms in the natural gas pipeline industry which will reduce utility bills for the 50 million households that use natural gas heat.
- Creating More Competitive Communications Markets: The Federal Communications Commission took steps to allow greater competition among international communications satellite systems, resulting in lower prices for the more than 1 billion phone calls made each year between the U.S. and other countries.
- Meeting Environmental Goals in a Cost-Effective Manner: The Adminstration has developed several innovative, market-based approaches to reduce the costs of meeting the Clean Air Act's standards. One such initiative, known as "Cash for Clunkers," will help businesses meet the standards of the Act by giving them emission reduction credits if they take older, high-polluting automobiles off the road.

To begin the second phase of his deregulatory, progrowth initiative, on April 30, the President signed Executive Order No. 12803 promoting private investment in local infrastructure. As he observed, this order will lead to greater financial flexibility for State and local governments to sell or lease infrastructure assets obtained with Federal assistance.

The President also extended the moratorium for another 120 days. Specifically, he requested applicable departments and agencies to "make every effort to implement as quickly as possible those proposals that will create jobs and enhance economic growth without endangering public health and safety." The 120-day extension permitted departments and agencies to continue their review of current regulations and make progrowth changes where possible. These initiatives are summarized below at the beginning of the chapter for each agency.

Economic-Incentive Approaches to Regulation

Market incentives and minimal restrictions on voluntary exchange improve economic efficiency and strengthen our economy. President Bush has reaffirmed his long-standing commitment to the reliance on market mechanisms to the maximum extent possible.

A number of Federal programs involve the allocation and distribution of valuable rights or resources among private parties, either as a primary purpose or as a necessary result. For example, the Federal Government allocates to private parties access to natural resources under its control, e.g., mineral deposits, forests, grazing lands, fisheries, and offshore mineral rights. Some regulatory programs actually create rights and then allocate them among private parties: for example, takeoff and landing rights at congested airports, and radio or television broadcast licenses. The Bush Administration has sought to allocate such rights and resources more efficiently through the use of markets and market forces.

Market incentives provide individuals and firms with direct information on the incremental costs of using scarce resources and incentives to economize by changing their behavior to meet regulatory goals in less costly ways. They allow individuals and firms—acting in their own self interest—to promote the general well-being through their independent actions, without the inefficiencies of a centralized regulatory mandate that directs the actions of each and every party subject to regulation.

Markets provide incremental rewards to those who find ways to achieve desired outcomes using fewer resources. If the government allows firms and individuals to profit in achieving regulatory goals, they will invest in pursuit of those goals. True market incentives also force those who use such resources or rights to pay no more and no less than the full social cost associated with their use.[6] They do so automatically without the need to settle the matter in court.

Our Nation's limited experience with "market-incentive" approaches to regulation bears this out. For example, the market incentives associated with two of EPA's regulatory programs (emissions trading and lead phasedown) have saved between $1 billion and $12 billion in regulatory costs over the past 10 years.[7]

This chapter uses selected examples of past and current market incentives to illustrate the future direction of such approaches. The first section outlines the advantages of incorporating market incentive approaches within regulatory programs. Also, it summarizes estimates of potential cost savings from several market incentive programs.

The second section examines our Nation's experience to date with selected examples of market incentives that are already in place, and our expectations with respect to certain market incentives that are about to be put into place. It then considers a few areas in which market incentives have not yet been applied, but where the promise for savings is great.

The third section draws on both theory and experience to develop some principles and characteristics (i.e., some important "do's" and "don'ts") necessary for market-incentive systems to achieve their full potential.

ADVANTAGES OF MARKET-INCENTIVE APPROACHES

When properly structured, economic incentives offer two great advantages over such approaches to regulation as command-and-control. First, they allow business and others to achieve a given regulatory goal in the least costly manner. Second, market incentive approaches provide rewards for those who reduce costs or provide greater levels of control through innovation and technical change.

Lower Costs

Command-and-control approaches to regulation usually apply uniformly, imposing the same requirements—even the same equipment designs—across a broad array of covered firms and activities. Such standards are likely to impose widely different incremental costs per unit of benefit since compliance costs rarely are equal at the margin across all regulated firms and activities. It is precisely this difference in incremental costs that produces the gains

[6] The discussion in this chapter is limited to marketable or tradable "rights," permits, and obligations to achieve regulatory goals. This includes "averaging" and "banking" or "carrying forward" of credits for future use. (In effect, averaging is simply a trade within a firm or plant during a given regulatory control period and banking is a trade within a firm across control periods.) The reasons for this are twofold: (1) most of the U.S. experience to date and for the forseeable future is in this area, and (2) the limitation serves to simplify the exposition with no serious loss in applicability of the points made to market incentives more generally.

This chapter also does not question whether the underlying regulatory goals (to which any economic incentive discussed herein may be applied) enhance the Nation's welfare. Although, in a broader context, the desirability of a given regulatory objective is the most crucial question in regulatory policy, it is beyond the scope of this discussion. Furthermore, it has been addressed at length in previous issues of the *Regulatory Program*. Thus, the reader should not infer from any of the examples chosen that there is a correlation between the desirability of the market incentive and the desirability of the underlying objective.

[7] Robert W. Hahn and Gordon L. Hester, *Marketable Permits: Lessons for Theory and Practice*, Ecology Law Quarterly, Vol. 16, pp. 361–406.

from exchange.[8] However, non-market-incentive approaches usually prohibit such exchange from ever taking place. Furthermore, command-and-control requirements normally do not respond to changed circumstances without costly and time-consuming new regulatory action.

By contrast, economic incentives (such as marketable permits) generally help to minimize the overall costs of achieving any given regulatory objective. They accomplish this by allowing the high-compliance-cost parties to fall short of the standard and to make up the difference by purchasing permits from low-cost parties. With time, the relative cost advantages one party may have over another may change. A system of marketable permits provides the flexibility to allow adjustments within the regulated community to changing circumstances.

Innovation

While market incentives reward innovation, command-and-control regulations, particularly technology-based standards, provide little or no incentive for regulated parties to seek less costly or more effective means of achieving a particular standard. Market incentives provide a strong incentive not only to find a cheaper means to meet a given standard, but to develop ways to surpass the minimum requirements. Under a market-incentive approach, the rewards (i.e., cost savings or net revenues from the credits generated by going beyond the requirements) accrue directly to those who are able to find low-cost ways of meeting and exceeding regulatory requirements.

Table 1 lists selected examples of regulatory programs that have employed or will employ economic incentives, empirical estimates of cost savings attributable to these incentives, and a qualitative judgment of the effect of the incentives programs on achieving regulatory goals.

Table 1

Program	Cost savings (millions of dollars)	Effect on regulatory goal
Lead phasedown	$250	Slightly positive
Emissions trading	$825–$12,000	Slightly negative
Acid rain allowance trading	$660–$950/yr.	Neutral
Phaseout of "stage 2" aircraft.	Up to $140	Neutral

Notes:
All savings estimates are net present value, except for the acid rain program estimates, which are annual figures. "Slightly negative" means that the market incentive is estimated to have resulted in a slight increase in the level of emissions over what emissions they would have been in the absence of the incentive.

Sources: Emissions Trading and Lead Phasedown: Hahn and Hester, op. cit.; Acid Rain: EPA's Final Regulatory Impact Analysis; Stage 2 Aircraft: 56 FR 48649, September 25, 1991.

EXAMPLES OF MARKET INCENTIVES

Existing Market-Incentive Programs

Lead trading: Among the most successful market-incentive mechanisms to date is EPA's trading and banking program for lead. Prior to 1983, EPA's regulatory program to limit the amount of lead in gasoline was essentially a command-and-control regime. The rules set different lead levels for different refiners, but allowed no flexibility for refiners to meet EPA's overall lead-reduction goal.

Beginning in 1983, EPA set a uniform lead-content standard and allowed trading of lead credits among gasoline refiners and importers. Refiners and importers generated lead credits by reducing the average lead content below the relevant limit. Initially all credits expired at the end of the calendar quarter in which they were generated. In 1985 EPA extended the useful life of lead credits by allowing them to be "banked" (i.e., saved for future use) or traded until the end of 1987.

The lead banking program was extremely popular and produced large benefits. It allowed EPA to accelerate the phaseout of lead because refiners who needed more time could bank lead credits. Over 10 billion grams of lead credits (representing about 35 percent of available credits) were banked, generating an estimated $250 million in savings. The lead-trading market also saw a high level of activity between refiners. For example, in 1985 more than half of the refineries made at least one purchase or sale of credits. About 15 percent of the total lead rights were traded.

Lead-credit trading and banking transactions were generally unrestricted. Trades did not require prior government approval, and reporting requirements were simple and did not require the generation of new information. These reporting requirements were, however, sufficient for EPA to match individual sales and purchases, and to verify whether total sales equaled total purchases, thus allowing EPA to investigate and enforce against trades involving bogus credits.

[8] It is a fundamental economic truth that differences in incremental costs furnish the basis for gains from exchange. When incremental costs are unequal, the total cost (summed across all parties) of achieving any level of benefit can be reduced if the low-marginal-cost firms assume a greater share of the burden of achieving a regulatory goal and the high-marginal-cost firms assume a correspondingly smaller share.

Emissions trading: Stationary emission sources (e.g., refineries, chemical plants, etc.) in nonattainment areas are subject to stringent emission limits. Under EPA's emissions trading program, a stationary source may exceed the applicable emission limits if the increase is offset by a decrease in emissions from other sources. Firms can trade such emission-reduction credits while achieving the same overall level of pollution control as would result from having each source meet the specified emission level. EPA's emissions-trading program includes the following four components:

- A "bubble" policy which treats a given plant site as a unit instead of requiring each of the individual emissions sources within the plant to meet separate standards. This allows plant managers to operate the plant, including pollution control equipment, at maximum efficiency. According to EPA, pre-1986 bubbles were estimated to save $300 million (net present value). (Estimates of additional cost savings from post-1986 bubbles are not available.) Bubbles may involve more than one firm; however, only 5 percent of federally approved bubbles have done so.
- A "netting" policy, which exempts modified or new facilities from cumbersome regulatory requirements if the plant reduces emissions from other existing facilities within the plant so that the net emissions from the plant are not increased. Emission sources have engaged in an estimated 5,000 to 12,000 netting transactions since 1980, resulting in savings of between $525 million and $12 billion.
- An "offsets" policy, which requires new sources to offset new emissions by reducing emissions from existing sources. According to EPA, about 2,500 offset transactions have taken place: 10 percent of these were inter-firm and 90 percent intra-firm.
- A "banking" policy, which allows firms that reduce emissions by more than required by their emissions standards to earn and save these emission reduction credits for later use, facilitating bubble and offset transactions. Firms have made little use of banking, with only an estimated 100 transactions through 1986.

The emissions-trading program is, however, subject to several restrictions that deter active participation in the program. These restrictions raise compliance costs while offering no corresponding incremental environmental benefits.

First, because of legal distinctions between new and existing pollution sources under the Clean Air Act, many potential trades between new and existing sources are prohibited. Second, the emissions trading rules require "discounts" on credits under the bubble and offset programs whereby buyers of emissions rights must acquire more than one unit of emission rights to offset a unit of emission increase. The discounts vary depending on the severity of the local air-quality problem and are set by the States. Third, with the exception of netting, the emissions-trading program is subject to substantial regulatory oversight and consequently to complications and uncertainty. For example, federally approved bubbles are subject to State, EPA regional office, and EPA headquarters review.

The future value of credits generated through the emissions trading program is by no means guaranteed. The limits against which emission sources generate credits are subject to further reductions if the area in which they operate does not come into attainment. Such reductions would effectively result in the confiscation of the property rights to at least some of the emission credits. The effect of such uncertainty is to reduce the current value of credits and to diminish the number of credits that are traded or banked. Trades have only averaged less than 1 percent of potentially tradable emissions. The risk of confiscation is particularly severe in the context of banking, which may help explain its extremely limited use.

Heavy-duty truck engine emissions: Under a program that began in earnest with the 1990 model year, EPA allows manufacturers of heavy-duty engines to average, bank, and trade oxides of nitrogen (NOx) and particulate matter (PM) emission credits for certification purposes. In the event that an engine family's emissions fall below the standard, a manufacturer may generate credits that it may either average with another engine family in the same model year, bank for use in a subsequent model year, or trade to another manufacturer.

The program is restricted in three important ways: (1) banked credits expire 3 years from the year in which they were generated, (2) banked and traded credits are subject to an automatic 20 percent discount before they can be used, and (3) credits generated by gasoline ("otto cycle") engines may not be used to meet the diesel engine standards and vice versa.[9]

[9] EPA is considering allowing trading across fuel types, but not between engine-cycle types. For example, otto cycle engines that run on compressed natural gas could generate credits for use in meeting the standards for otto cycle engines that use gasoline, but not for use in meeting standards for diesel engines, regardless of fuel type. EPA is also considering adopting an averaging, trading, and banking program for carbon monoxide and hydrocarbon emissions in its Clean Fuel Vehicle program.

Manufacturers have made substantial use of the banking provisions. For example, as of August 31, 1992, of the 191 diesel engine "families" (i.e., groupings of similar engines) certified since the 1991 model year, 24 percent have generated PM credits for banking and 32 percent have used previously banked PM credits for certification. Over the same period, 11 percent have generated NO_x credits for banking and 17 percent have used previously banked NO_x credits for certification. However, the manufacturers of only 1 percent and 3 percent of diesel engine families have made use of the PM and NO_x averaging programs, respectively. Furthermore, to date, no manufacturers have bought or sold credits.

There are several possible reasons why manufacturers have not traded credits. It may be that, when added to the transaction cost of trading, one or more of the restrictions reduces the value of credits to the point where trades are uneconomic. It may also be that manufacturers are sufficiently wary of their ability to comply with the substantially more stringent PM emission limits set to take effect with the 1994 model year that they prefer to hold their banked credits as a form of insurance against this risk. Once manufacturers have gained experience with the 1994 and subsequent model years, the second hypothesis can be tested.

Airport slots: In December 1985 the Department of Transportation issued a final regulation to allow the sale of takeoff and landing rights ("slots") at four "high-density" airports (Chicago's O'Hare, New York's La Guardia, New York's Kennedy, and Washington's National). The number of slots at each of these airports is restricted below the number desired by airlines for several reasons, especially noise restrictions and limited air traffic control capacity. Under the so-called "buy-sell" rule, which became effective in April 1986, these restricted slots can be exchanged for any reason. Prior to this time, a slot could not be sold (to a new airline, for example), but could only be traded, one for one, for another slot at the same airport.

The buy-sell program improved the previous methods of allocating slots through quotas or on a first-come, first-served basis. At the four high-density airports, a total quota of some 3,500 air carrier slots was originally allocated by airline scheduling committees. These committees met twice a year and were required by the Federal Aviation Administration (FAA) to reach unanimous agreement on the allocation of slots. Incumbent and new-entrant airlines served on these committees, often resulting in deadlocks that inhibited the efficient use of slots. In addition, the quota system imposed considerable restraints upon new entrants.

The 1986–87 Regulatory Program predicted that the introduction of a slot market would also improve airline competition and reduce fares on routes serving the high-density airports.[10] This prediction appears to be borne out by the slot experience to date. A recent study by Riker and Sened presents empirical evidence on the relative efficiency of the slot market.[11] In comparing, for example, hubs that utilize the slot market (O'Hare and Washington National) with those that continue to allocate on a first-come, first-served basis (Atlanta and Los Angeles), Riker and Sened have observed greater efficiencies (in terms of load factors) and smaller levels of fare increase. They also note a lesser degree of service diminution (to smaller communities) and considerable market activity (in the sale and leasing of slots).[12]

Despite the general efficiency and competitive improvements associated with the buy-sell program, critics continue to maintain that the buy-sell rules prevent new entrants from competing with incumbent airlines.[13] Consequently, airlines holding slots are faced with a persistent threat that their slots will be withdrawn and reallocated to other users. For example, the 1990 Aviation Safety and Capacity Expansion Act directed the FAA to initiate a rulemaking that would improve access and competitive entry for smaller carriers.[14] Although these initiatives are intended to encourage the transfer of slots from larger incumbents to smaller incumbents and new-entrant air carriers, the net effect may be only to force carriers to use their slots in less efficient ways. Previous attempts to reallocate slots through a lottery had this unintended result.

[10] *Regulatory Program of the United States Government, April 1, 1986–March 31, 1987,* pp. xxix–xxx.

[11] William Riker and Itai Sened, "Common Property and Private Property: The Case of Airport Slots," unpublished manuscript, University of Rochester, 1991.

[12] See Riker and Sened, op. cit., chapter 3. See also "A Political Theory of the Origin of Property Rights: Airport Slots," *American Journal of Political Science,* November 1991.

[13] "Airline Competition: Industry Operating and Marketing Practices Limit Market Entry," General Accounting Office (GPO/RCED–90–147, August 1990.)

[14] See Federal Aviation Administration, "High-Density-Traffic Airports Slot Allocation and Transfer Methods," 57 FR 37308, August 18, 1992. The rule raises the minimum "use-or-lose" requirement that a carrier use the slot 80 percent (up from 65 percent) of the time or forfeit the slot to the FAA for allocation to another carrier.

Despite their objective of encouraging new entry, these new FAA rules impose costs in terms of market efficiency. To the extent that property rights in slots are attenuated, the resulting uncertainty distorts the value of slots and reduces incentives for their efficient allocation. The redistribution of slots to new entrants, for example, may have the unintended effect of reducing the efficiency of the market without resulting in actual increased use of slots by the new entrants (who may merely resell them to larger incumbents).

Furthermore, the mere threat of a reallocation of some slots may induce carriers to hold slots they do not value highly (rather than sell them to other carriers who value them more highly) as a form of "insurance" that their most highly valued slots will not be withdrawn. Accordingly, some observers believe that the market would be improved by giving airlines a clear property right in slots on a permanent basis. This action may eliminate the incentive under the current rules to make "in-kind" trades or to hold low-valued slots as insurance and may help to put smaller airlines on a more equal footing in bidding for slots.[15]

New Uses of Market Incentives

Acid rain allowance trading: The Clean Air Act Amendments of 1990 set a cap of 8.95 million tons of sulfur dioxide (SO_2) emissions per year (a 10-million-ton-per-year reduction from 1980 emission levels) from the Nation's power plants. This cap is to be achieved in two phases. Each existing emission source subject to the program will be required to reduce its emissions by a specified amount and will be granted "allowances" based on its historical usage. During the first phase, which runs from 1995 to 1999, EPA will allocate about 6.4 million allowances per year. (Each allowance is for one ton of SO_2 emissions.) During phase 2, which covers many more sources, EPA will allocate about 9.7 million allowances annually between the years 2000 and 2009 and 8.95 million allowances per year thereafter.

Sources may use allowances to meet current requirements, bank them for future use, or sell them. Banked and traded allowances will not be subject to a discount. There will be no geographic restrictions on trades, nor will there be any restrictions on who can purchase or hold allowances. Trades will not require the prior approval of EPA but may be subject to State public utility regulation. EPA has estimated that the program could reduce compliance costs by nearly $1 billion per year, or about one-fourth of the total cost of achieving the 10-million-ton reduction in the absence of allowance trading.

The market for SO_2 allowances promises to be very active and could well become the most successful of the market-incentive programs. For example, before final rules regarding trading were issued, three trades involving a total of between 50,000 and 60,000 allowances were announced. Two of the trades involve the same source in Wisconsin; one is with a source in Tennessee and the other with a source in Pennsylvania. The third trade is between sources in Ohio and Indiana and involves allowances through the year 1999.

Also, in a first for market-incentive programs, the Commodity Futures Trading Commission has designated the Chicago Board of Trade (CBOT) as a contract market in "clean air futures." This will permit the CBOT to trade futures contracts in SO_2 emission allowances. As it has done with other commodities, the futures market will enhance the SO_2 trading program by allowing utilities to reduce price risks associated with unanticipated changes in the supply of and demand for SO_2 allowances.[16]

Surf clams and quahogs: In September 1990 the National Marine Fisheries Service (NMFS) implemented an individual transferable quota (ITQ) system for surf clams and ocean quahogs in the New England and Mid-Atlantic fisheries. ITQs assign the rights to harvest certain amounts of surf clams and quahogs to individual vessel owners, rights which owners can use or transfer to others.

These New England and Mid-Atlantic fisheries were first regulated in 1977, in response to a severe biological crisis in the surf clam population that was a direct result of overfishing. From 1977 to 1990 fishery management had relied upon the following practices: (1) a moratorium on the entry of new vessels, (2) quotas setting the total allowable take each year, (3) limits of surf clam and quahog size, and (4) stringent limits on fishing hours and days.

Although a well-enforced quota system can in theory achieve conservation of the resource, the sheer number of vessels involved (despite the moratorium on new entry) made a quota system difficult to enforce. In addition, the quota system used prior to 1990 set catch limits for the fishery as a whole but not for individual vessels. Thus the industry remained unable to take advantage of existing economies of scale and to organize the harvest in an economically efficient manner.[17]

[15] See Andrew Kleit, "Competition Without Apology," *Regulation*, Summer 1991, p. 72.

[16] See Susan Dudley, "The Future of Clean Air Futures," in *Public Utilities Fortnightly*, August 1, 1992.

[17] The moratorium and quota system as implemented did not address the "common property resource" problem discussed more generally

The ITQ system allocates shares of the quahog and surf clam quotas to individual vessel owners based on historical catch. Since its inception in 1990, the ITQ market has been fairly active, which, like the lead trading program, suggests that it has generated substantial efficiency gains. For example, the approximately 90 owners of quahog ITQs engaged in 20 or more trades (permanent sales or temporary leases of ITQs) each month in 11 of the most recent 14-month period for which NMFS has data. Over the same period, the approximately 120 owners of surf clam ITQs engaged in 20 or more trades in each of ten different months.

The ITQ system appears to have helped solve the enforcement problem as well. For example, since 1990 there has been a measurable consolidation of the fleet, particularly for vessels harvesting exclusively surf clams, where the number of vessels involved has diminished from 77 to 29. Despite the concerns of some who fear that this consolidation may have diminished competition, the market price of surf clams has remained relatively stable throughout the period of transition.[18]

Phaseout of Stage 2 aircraft: The Airport Noise and Capacity Act of 1990 (ANCA) bans the operation of the noisier passenger jets (so-called Stage 2 airplanes) in the United States after December 31, 1999. The ANCA also requires the FAA to establish a phaseout schedule for Stage 2 airplanes. In 1991, the FAA issued a final rule that requires carriers to reduce their Stage 2 fleets by 25 percent by 1995, 50 percent by 1997, 75 percent by 1999 and 100 percent by the year 2000.[19] The final rule allows operators who phase out their Stage 2 airplanes ahead of the schedule to generate "carry forward" credits for use in meeting the later requirements. Carry forward credits thus can be banked for use up until 1999. However, the rule does not allow for credits to be traded.

The carry-forward credit provision has the potential to generate substantial savings with no appreciable loss in noise-reduction benefits. The FAA has estimated that, in the absence of carry-forward credits, the phaseout schedule would have imposed costs of about $300 million over the decade. The carry-forward option has the potential to reduce the cost of the rule to about $120 million.[20] The FAA was unable to estimate the potential for additional savings from the addition of a credit trading program.

Potential Future Applications of Market Incentives

Mobile/stationary source trading: cash for clunkers: One area under active consideration by EPA that holds the potential for substantial savings is trading of emission rights and credits between mobile and stationary sources. Current mobile-source and stationary-source market-incentive programs, such as the emissions-trading and heavy-duty-engine programs described above, do not allow such exchanges.

Required stationary-source emission reductions of some pollutants, such as hydrocarbons and NO_x, are becoming quite expensive per incremental ton of emission reduction, particularly in certain areas of the Nation, such as Los Angeles. At the same time many of these areas contain large fleets of older, low-value vehicles that are responsible for a relatively large fraction of these same emissions. A program that allowed stationary sources to obtain emission credits by buying up and destroying these vehicles could achieve emission reductions much more cheaply than through stationary source controls.

A recent demonstration program (called "SCRAP"), conducted by Unocal in the Los Angeles area, illustrated that a so-called "cash for clunkers" program can be successfully implemented. Over a 4-month period in 1991, the SCRAP program removed 8,376 pre-1971 vehicles from the area at a cost of $700 per vehicle. Unocal estimated these vehicles accounted for over 6,000 tons of emissions (hydrocarbons, NO_x, and carbon monoxide) per year.

Fisheries: With the notable exception of the ITQ program in the surf clam and quahog fisheries discussed above,[21] fishery management measures designed to maintain the American fisheries have generally established a set of perverse incentives that threaten the economic health and perhaps even the viability of the fishing industry. The use of marketable permits to establish tradable property rights to the resource would establish a more efficient and en-

below. As a result, substantial overcapitalization of the fishery, (i.e., too many boats and too much effort expended chasing too few surf clams and quahogs) remained a problem.

[18] The price of quahogs has recently risen somewhat. According to fishery officials, however, the increase appears to be a result of a recent increase in the demand for quahogs rather than as a result of any anticompetitive behavior resulting from the ITQ system.

[19] See 56 FR 48628, September 25, 1991. The final rule allows operators to choose an alternative to this phaseout schedule, but it is not relevant to the discussion at hand.

[20] It appears from the FAA analysis that $40 million of the $180 million difference is attributable to a waiver provision included in the rule. Consequently, the savings attributable to carry-forward credits in Table 1, above, is only $140 million.

[21] Currently there are a handful of new ITQ at various stages of implementation involving such fisheries as the wreckfish fishery in the South Atlantic and the sable and halibut fisheries off Alaska.

vironmentally sound management framework for these valuable resources.

Fishing in the U.S. Exclusive Economic Zone is regulated under the Magnuson Act (16 U.S.C. 1801), which provides a mechanism for the implementation of comprehensive fishery management measures. The Act created regional fishery management councils (FMCs), composed of members who are knowledgeable in the fisheries, to manage each region's fisheries. The FMCs draft fishery management plans (FMPs), which must be approved by the Secretary of Commerce, to manage the fisheries under their jurisdiction.

In order to conserve a fishery, FMCs generally impose a total allowable catch (TAC). The TAC is a quantity of fish which the FMC has determined may be caught within a fishery without harming the resource. Each participant is generally allowed to fish in the fishery on a first-come, first-served free-for-all approach which allows all participants in the fishery to fish until the TAC for the season is reached.

It is well documented that this system results in wasted effort and resources because it encourages "racing," since each participant knows that whatever portion of the TAC not taken today may not be available tomorrow. For example, the system has in many instances resulted in overcapitalization by firms within these fisheries. The current system also rewards investment in expedient (technologically efficient) capital, which is not necessarily economically efficient capital. The result is not only an inefficient use of resources in the fisheries, but also a less desirable pattern of supply for consumers, with gluts of fresh fish during brief periods and an absence of fresh fish during the remainder of the year.

In an attempt to address these problems, the FMCs have developed four basic types of restrictions on fishing activity: (1) moratoria on new entrants into a fishery; (2) gear and vessel restrictions, which prohibit or limit the use of certain types of vessels or equipment, such as nets; (3) trip limits, which specify the maximum length of a trip or total catch per trip; and (4) closures of areas or fisheries.[22] In one manner or another, all of these actions work to increase the real resource cost of fishing with fewer fish caught for each unit of effort. The measures have also not been completely successful at preventing overfishing and, to the extent that they have succeeded, they have done so only at the expense of making fishing economically less efficient.

The institution of a marketable permit system, granting individuals exclusive and transferable rights to catch a specific percentage of the TAC, would be an efficient mechanism through which to create property rights. With such a system in place, those with high harvesting costs would have an incentive to sell their permits to those with lower cost, once they realize that they can make more money by selling the permit than by using it.

In theory, fishery participants, who have marketable permits ensuring the right to harvest a portion of the resource, will have an incentive only to spend the resources necessary to catch the allocation in an economically efficient manner. A marketable permit system would remove the incentive to invest in the additional capital previously necessary to support the "racing" behavior to catch the fish before the TAC was reached. It would increase the incentive to spread the catch more evenly (and efficiently) throughout the season, since fish not caught today would still be there tomorrow. Finally, by allowing the elimination of many layers of constraints, such as gear restrictions, it would very likely encourage innovation.

DESIGNING MARKET-INCENTIVE PROGRAMS THAT WORK

Regulatory agencies need to take great care in designing and implementing market-incentive approaches. Without such care, agencies can severely impair promising market incentives, or even worse, cause them to operate at cross purposes to the basic regulatory goal. For example, Hahn and Hester have made a case that the differences in restrictions on the lead and emissions-trading programs probably explain to a large extent the differences in their overall perceived success.[23]

Market Incentive "DOs"

First, the right or set of rights which a permit conveys must be clearly defined and accurately specified (e.g., the quantity and period for which the permit is valid). Lack of a clear definition of associated property rights introduces uncertainty which, in turn, reduces the value and inhibits exchange of the rights. Second, the permit must provide clear title. Again,

[22] Other types of restrictions include fish-size limits, time-of-day and season restrictions, bag limits for recreational fishing, and other restrictions on the type of fish taken (e.g., no egg-bearing females).

[23] It is not accurate to attribute all of the differences in the relative success of the two programs to differences in their cumbersomeness. For example, the lead program involved only refineries, many of which had prior experience transacting with each other. By contrast, the emissions-trading program involves a much wider array of sources, with correspondingly higher transaction costs in finding, negotiating, and executing potential trades.

uncertainty as to title reduces the value of the right and inhibits exchange. Third, the permit must be freely transferable to any party that can be held accountable for its proper use.

Market Incentive "DON'Ts"

Unnecessary oversight: All regulations that impose costs need to be adequately enforced in order to have any beneficial effect. However, regulatory oversight is itself not without costs and burdens. If these costs and burdens are to be borne by the regulated entities, they should be the minimum necessary for the agency to ensure that the rules are being followed.

While this principle applies to all forms of regulation, including command-and-control regulation, it is particularly important with market incentives. There appears to be a strong tendency for agencies to overenforce where market incentives are concerned. Unnecessary oversight increases what may already be substantial transaction costs (both in terms of bureaucratic hurdles and uncertainty associated with delays in approval). These transaction costs can act as a major deterrent to trading activity. Where transactions costs are too burdensome, trades will not be consummated and the potential gains of a marketable permit system—reduced costs and greater efficiency—will not be realized. As noted above, substantial transaction costs imposed by regulation may be at least partly responsible for the relatively low level of trading activity in EPA's emissions-trading program.

Arbitrary restrictions on the nature and extent of exchange and obligations: First, there should be no arbitrary discounts on averaging, trading, and banking activities. Trading and averaging should be done on a one-for-one basis with respect to the actual harm done by the regulated activity. This requires information concerning the harm, including how, why, and where it may vary. EPA's regulation of chlorofluorocarbons (CFCs) provides a good example. In this case, the relative risk of the various CFCs in terms of ozone depletion potential (ODP) are fairly well understood, and these risks are independent of the location of the release of the CFCs (i.e., there are no potential "hot spots"). Trading of consumption or production rights across substances is denominated (adjusted) by the ODP to reflect the relative harm associated with the release of each.

Unfortunately, there are numerous instances where trading is allowed only on a greater than one-for-one basis (i.e., where more than one credit must be generated for each credit sold). Many of these examples involve arbitrarily set discounts. Regardless of their alleged purposes, such discounts amount to a tax on each transaction and in effect serve only to diminish the use and value of the market incentive.

There should be no arbitrary restrictions on those allowed to transact. Trading should be open to all regulated entities and across all regulated activities, provided that there is adequate information under the one-for-one principle described above. The acid rain trading program is a good example of the proper application of this principle. However, the CFC trading program is lacking on this score. CFCs and other ozone-depleting substances are divided into two classes based on ODP. While trading is generally allowed between substances within classes, it is prohibited between classes.

There should be no arbitrary restrictions on banking. Generally, it is better for regulatory goals to be attained sooner rather than later. Banking of unused permits for future use provides regulated parties with an incentive to accomplish this. Arbitrary or unnecessary restrictions on banking diminish the incentive to achieve the regulatory goal sooner rather than later.

Unnecessary risk of forfeiture or reduction in the future value of the regulatory right: The agency should define clearly the exact nature of the right or asset that is subject to the market incentive. The agency should also ensure that, regardless of the initial means of allocating the right, the system conveys clear ownership rights which holders are free to use, bank, or trade as they see fit. One critical source of uncertainty is the threat of future forfeiture of regulatory rights. In the discussion above of the emissions-trading program and airport slot market, we saw that the uncertainty these threats generate can seriously inhibit the level of trading activity. In the case of the airport slot market, the use-or-lose provision, while intended to promote usage, can also provide incentives for the inefficient use of slots.

Command-and-control in disguise: Probably the most insidious abuse of the market-incentive approach is the false labeling of a command-and-control approach as a market-based incentive. It is important that command-and-control approaches not be mistaken for—or misrepresented as—market incentives. This can result in regulatory schemes that are in fact substantially less efficient than they appear. Agencies need to preserve the term "market incentive" for only those programs that truly create or involve markets. This avoids giving a bad name to market-incentive approaches because of the poor performance of regulatory requirements that are incorrectly portrayed as market incentives.

For example, merely linking a regulatory requirement to an otherwise voluntary market transaction, such as a requirement that home sales be contingent upon the seller providing radon or drinking-water test results to prospective buyers, does not constitute a market incentive. Such a mandate does not allow for

any meaningful choice, nor does it provide any market benefits as such.

Health-Health Analysis: A New Way To Evaluate Health and Safety Regulation

This section discusses a new analytic framework that can be used to evaluate regulations intended to improve human health and safety, including environmental regulations, and solicits comments on the approach. The approach has been termed health-health analysis to distinguish it from risk-risk analysis.[24] Health-health analysis differs from traditional benefit-cost analysis required by Executive Order No. 12291 and described in the Regulatory Impact Analysis Guidelines (see appendix V). Health-health analysis computes the unintended risk increase attributable to the decline in spending on other risk reduction efforts that results when resources are shifted to comply with a regulation aimed at specific risks. Regulations have these unintended risk-increasing effects because families and other entities spend less on such items as health care, nutritious diets, and home and auto safety devices when their incomes decline. Health-health analysis then compares this risk increase with the direct risk reduction that is estimated to result from the regulation.

HEALTH-HEALTH ANALYSIS: AN OVERVIEW

Health-health analysis postulates a systematic relationship between people's wealth, or their command over goods and services, and their health, including their annual risk of death and overall life expectancy. Compliance with costly regulations affects the consumption of risk-reducing goods and services and investment in better medical care in a manner similar to an income decline. As people spend money to comply with a regulation, they necessarily have less disposable income to spend on all other goods and services. The effective size of the pie being smaller, less of it is put to all uses, including the purchase of health and safety. This argument is the conceptual basis of health-health analysis.

People face choices about the risks of mortality and morbidity in their consumption of a variety of goods and services and in their personal activities. The risk-reducing characteristics of these goods and services are quite varied. For example, while antismoking programs, health-club memberships, and regular medical check-ups have delayed effects, such things as antilock brake systems, airbags, and bicycle safety helmets immediately affect safety risks. Daily exercise requires some time but little money, while traveling by plane instead of auto between nearby cities requires money but saves time. Some means of reducing risk, for example regular medical check-ups and precautionary medical tests, reduce both mortality and morbidity.

Direct Effects. Individuals may be expected to choose the degree of risk reduction appropriate for their particular circumstances including their income level. As wealth increases, ability to pay for goods and services generally, and those that reduce risks to health and safety in particular, rises. Further, the data show that actual consumption of risk-reducing goods and services generally rises as wealth rises.

Greater income or wealth makes it possible for smokers to afford joining antismoking programs. Similarly, with increased wealth more drivers acquire cars with air-bags and antilock brakes, and more families purchase smoke detectors and fire extinguishers and get annual medical checkups. With rising incomes, people find purchases of safer goods and services less burdensome; they also have more resources to devote to developing healthier and safer lives. With lower incomes, people are more inclined to skimp not only on frills but also on the goods and services that reduce risk. Mortality and morbidity among higher income groups are lower than among lower income groups.[25]

Indirect Effects. As our national income rises, our society as a whole has more resources to allocate towards the development of more effective cancer treatments, better medical diagnostic devices, and new drug therapies. Support for prenatal clinics,

[24] Lester Lave (1981) defined risk-risk analysis (RRA) as an analysis that examines either (1) the risks posed by the direct substitutes of a regulated product, e.g., banning asbestos brake linings, or (2) the indirect risks inherent in the production and maintenance of the control technologies needed to comply with the regulation, e.g., comparing the construction risks associated with building extra-safe nuclear power plants with the direct risk reduction achieved by the regulation. Although health-health analysis could be considered a third type of RRA, it is broader and analytically superior to RRA because it applies to all risk regulation. RRA applies only on an ad hoc basis when the specific situation calls for it.

[25] An Environmental Protection Agency (EPA) publication, *Environmental Equity, Reducing Risk for All Communities*, published in June 1992, shows that chronic respiratory conditions for whites and blacks alike are more prevalent among low-income people than among high-income people. If health-health analysis is conducted without explicitly quantifying the effects of income changes on morbidity, estimates of willingness-to-spend in calculating the adverse health effects of compliance with costly regulations will underestimate the increases in risk. It is known that income losses are associated with increases in the prevalence of various diseases.

nutritional education, and fitness training is easier with higher incomes. Since these health benefits of higher income are independent of the direct effects of income on individual behavior described above, they should be enjoyed by all, even people whose behavior is determined primarily by habit rather than by rationality in the face of scarcity. These effects show up in time series studies of per capita income and mortality.

Differences Between Cost-Benefit Analysis and Health-Health Analysis

Cost-benefit analysis provides the best framework for analyzing whether particular government actions may be expected to make people better off. It strives to enumerate and to quantify the effects, both positive and negative, of a particular action, taking account of how the action may change the behavior of individuals. Finally, it values both positive and negative effects according to the valuations implicit in people's behavior. If benefits exceed costs then the action provides gains to members of society that together are valued more highly than the losses attributable to the action.

In some cases, however, it may not be possible to carry out cost-benefit analysis, for example, where statutes specifically prohibit consideration of such analysis in rulemaking, or where significant gaps in data prevent an evaluation of important categories of benefits or costs. Where this occurs, health-health analysis may provide an alternative framework for assessing the effects of a government action. Because health-health analysis focuses on a single dimension of public policy—that is, reduction of health and safety risk—it is inherently inferior to a framework that considers the full range of factors that affect social welfare. In effect, only those opportunity costs related to the policy objective are compared with direct benefits. Health-health analysis establishes, however, a minimum necessary condition—that government action yield a net reduction in health and safety risk. If government actions directed toward reducing risks nevertheless result in a net increase in health risks, then it is unlikely that they might ever yield net social benefits.

Health-health analysis, by pointing out the potentially adverse effects of health and safety regulations, makes an important contribution to our understanding of the application of cost-benefit comparisons in evaluating government actions. In the past, a number of advocates of government regulatory actions have argued that such actions are needed and appropriate even when they impose costs per premature death avoided that significantly exceed generally accepted estimates of the willingness-to-pay for risk reduction. Such arguments point to the need to include a margin of safety because of uncertainties in the magnitude of the health risk, or because of involuntary aspects of individuals' exposure to risk. Quite apart from the legitimacy of such objections to cost-benefit approaches, health-health analysis shows that accepting such margins of safety within a cost-benefit framework may result in government actions that perversely increase the health and safety risks that they are intended to reduce. In particular, health-health analysis identifies the point at which promulgating regulations that fail a benefit-cost test may be expected to result in detrimental effects on health and safety.

Health-health analysis, because it avoids the trade-off between dollars and human life that is explicit in cost-benefit analysis and found objectionable by many of its critics, may offer a new—though second-best—means of balancing efficiency concerns with respect for human life. Douglas MacLean, one of the leading philosophers writing about health and safety issues, points to Robert Solow's observation that "civilized people find it morally repugnant to view life as routinely exchangeable for other benefits" (MacLean, 1990, page 102). MacLean argues that human life is sacred and that even secular societies need collectively held beliefs in rituals and sacred values to strengthen social integration.

MacLean realizes that if lives are not compared to other benefits, through systematic analysis, fewer lives will be prolonged. While that fact in itself poses moral problems, MacLean has no solution to the dilemma. He concludes that it is important to use analysis to make decisions more consistent and efficient, and at the same time to realize that different values may have to be treated differently. "It is this fact, and not measurement problems, that makes value comparisons in environmental policymaking so difficult" (page 104).

Since health-health analysis compares lives with lives and thus assures that there is a net increase in lives saved, it offers a possible way out of the dilemma. If regulations that aim to save lives in fact do not, then they cannot be beneficial to society unless the few lives saved are worth more than the many that are lost—a difficult proposition to defend. A policy tool that tries to ascertain simply whether the objective of the policy is likely to be obtained is difficult to criticize. Health-health analysis is thus a potentially powerful tool in policy debates. This observation may explain the heated reactions that accompanied its introduction into the policy arena.

HEALTH-HEALTH ANALYSIS: DEVELOPMENT AND USE

Academic Research

The empirical relationship between wealth and health has long been known and has been an important focus of study both in the fields of public health and economic development.[26] In his popular book, *Risk By Choice*, Viscusi (1983) presents strong empirical evidence that accidental death rates decline with rising per-capita income. He attributes this to a combination of increasing income causing a rising willingness to pay to avoid risk and the development of safer technologies induced by an increasing willingness-to-pay (pages 45–53).

Aaron Wildavsky (1980, 1988) was the first to draw attention to the negative effects on public health of the opportunity costs of government programs and regulations intended to improve the public health.[27] He argues that economic growth and not government regulation has been the primary means by which life expectancy and health status have been improved, and that government policies formulated without taking into account the scarcity of resources often do more harm than good. Ralph Keeney (1990) was the first to quantify the indirect negative effects of regulatory costs on mortality rates. He used, in part, the results of Kitagawa and Hauser (1973) relating mortality to 1960 census data. He estimated that, depending upon the incidence of the costs of regulatory compliance, for every $3.14 million to $7.25 million in loss (in 1980 dollars) to gross domestic product (GDP), an increase of one fatality would result.

Use of Health-Health Analysis in Regulatory Policy

Judge Williams, in a case decided in July 1991 by the U.S. Court of Appeals for the D.C. Circuit, applied the Wildavsky-Keeney approach in a public policy context for the first time.[28] In a concurring opinion, he argued that the Occupational Safety and Health Administration (OSHA) should have used either cost-benefit analysis, what is termed health-health analysis, or some other analysis that reflects the opportunity costs of compliance with regulations to design a safety standard to protect workers from accidental start-ups of hazardous machinery. He specifically cited Keeney's upper estimate to illustrate his point.

On March 10, 1992, the Office of Management and Budget (OMB) wrote a letter to the Department of Labor (DOL) suspending review under Executive Order No.12291 of an OSHA draft proposed rule that set permissible exposure levels (PELs) for more than 600 workplace air contaminants. OMB discussed in the letter the Wildavsky and Keeney articles and Judge Williams' concurring opinion. The letter pointed out that the OSHA regulation could cause workers to suffer declines in real income. To the extent that firms were unable to reduce labor costs by the amount of compliance costs, increases in product prices would reduce workers' incomes as consumers. The letter illustrated the potential significance of the effect of income on health by using the Keeney estimate as cited by Judge Williams to calculate that the draft OSHA rule in question might actually cause 8 to 14 fatalities per year over and above any deaths avoided as a result of the rule. The estimate of 8–14 net deaths was calculated by dividing the $163 million in regulatory cost by Keeney's $7.5 million estimate to produce the estimate of unintended induced fatalities. This estimate of unintended fatalities was then subtracted from OSHA's estimate of expected direct benefits (8–13 deaths avoided) to get the net benefit estimate.

After discussions with OMB, DOL agreed to consider the usefulness and legality of the OMB approach. In the preamble to the proposed rule, DOL asked for comments on the legality and appropriateness of health-health analysis and published a preliminary set of estimates of the relationship between income and mortality risk that OMB had calculated from existing studies.

The OMB letter was the subject of great interest with Congress, the press, and various academics and interest groups. The General Accounting Office (GAO) was asked to report on the validity and legality of the analysis in the context of the OSHA rulemaking. The GAO report was completed 4 months later (U.S. General Accounting Office, 1992). The report concluded that the OMB analysis was really cost-benefit

[26] A recent article in the *American Journal of Public Health* (Smith & Egger, 1992) reports that the socioeconomic differences in mortality for Britain were first published by E. Chadwick in 1842. He also notes that these differences have been the subject of investigations for many decades in the United States. Irma Adelman (1963) discussed the reasons why increased wealth leads to lower morality rates in developing countries (p. 321).

[27] In 1984 the Joint Economic Committee published a report prepared by Harvey Brenner, an epidemiologist, that attempted to estimate the increase in mortality and morbidity caused by the decline in per-capita income and the unemployment associated with the 1973–1974 recession. The Committee was intent upon showing the importance of stabilization policies. These findings have been cited in popular textbooks on economic principles, e.g., Wonnacott and Wonnacott (1990, p. 115).

[28] See *UAW* v. *OSHA*, U.S. Court of Appeals for the D.C. Circuit, No. 89–1559.

analysis. The GAO report stated that the OMB analysis was not risk-risk analysis, which (based on Lave's definition) would balance "the risk posed to workers by the installation of exhaust hoods or fans against the risk posed by air contaminants in the workplace." As pointed out above, health-health analysis does not fit neatly into one of the two forms of risk-risk analysis defined by Lave (1981). Rather, it compares the overall health benefits of a standard with the health costs of a standard, not just in the workplace but also as a result of reduced income.

GAO also said that OMB's analysis "would compare the health benefits attributed to the proposed standard with the monetary costs to industry or society" (p. 5). This characterization reflects a similar misunderstanding. Health-health analysis comparisons represent only a fraction of the costs of the standard to society. Health-health analysis further differs from cost-benefit analysis in that it uses health status (e.g., mortality rates) as the unit of comparison rather than dollars.

The debate about the merits of the health-health analysis approach has been vigorous, in part because the stakes in terms of influencing regulatory outcomes appear to be high. The GAO report did not investigate the theoretical merits or empirical evidence about the income-health effect.[29] It focused on whether the health-health analysis approach is a form of cost-benefit analysis. If it is, then arguably under case law OSHA could not use it to design health standards (U.S. General Accounting Office, 1992, appendix II). The problem is that GAO was only able to come to that conclusion by mischaracterizing the analysis set out in OMB's letter.

HEALTH-HEALTH ANALYSIS: IMPROVING KEY ESTIMATES

A critical ingredient of expanded use of health-health analysis is the estimates of the relationship between GDP growth and deaths averted. The discussion which follows surveys the current state of knowledge. The remarkable similarity of a variety of different studies and international comparisons suggests a range of $4–$12 million in GDP growth producing one avoided death. The survey also shows that health-health analysis can provide an important tool for evaluating whether a rule will in fact save or cost lives.

Lutter and Morrall have recently shown (*Journal of Risk and Uncertainty*, forthcoming) that the "value of life" number used in cost-benefit analysis will be less than a "value of life" number used in health-health analysis. This finding implies that more regulations will pass health-health analysis than will pass cost-benefit analysis. The criterion used in cost-benefit analysis to measure the life-saving benefits of regulations is what beneficiaries would be willing to pay for the risk reduction. The number used in health-health analysis to determine whether a regulation actually saves lives is the amount of increased income that on average results in saving a life, that is, what might be called society's willingness to spend to save lives. It can be shown that these two numbers are related by the marginal propensity to spend on risk-reducing activities out of an additional dollar of income. Specifically, willingness-to-spend (WTS) equals willingness-to-pay (WTP) divided by marginal propensity to spend. Since the marginal propensity to spend on risk reduction out of an additional dollar of income will be less than 1, WTS will be greater than WTP. This theoretical relation between WTS and WTP provides a means of verifying the reliability of estimates of either WTS or WTP.

Existing studies on the relation between income and mortality are reviewed here with three objectives. The first is to show that observed correlations between income or wealth and mortality seem largely to represent causal relations. The second is to demonstrate that differences in WTS by income level or other demographic characteristics may be sufficiently small to permit health-health analysis to be conducted at an aggregate level. The third objective is to derive a range of likely estimates for WTS that may be appropriate for U.S. regulatory decisionmaking.

Table 2 summarizes selected studies of the relation between income and mortality. The studies represent work by demographers and public health specialists as

[29] The GAO report simply asserted that "Although an association between increased wealth and improved health is well established, evidence is lacking that health improves if, and only if, wealth increases." (p.6) OMB is not suggesting that wealth increases are *necessary* for health to improve, but only that wealth contributes to health. The report also asserts that there is a shortage of empirical evidence to confirm the connection between wealth and health. One might ask, If there is a shortage of empirical evidence to confirm the connection, how can the "association" as stated above be well established? The report goes on to say that the data cited in support suggest that the income-health relationship exists only for small segments of the population, and "proves" it by a misleading graph of an exponential equation fitted by Keeney from 3 data points. The graph shows the relationship between family income level and mortality from annual incomes of $0 to $85,000 in 1980 dollars. The graph flattens out at a point at about $25,000 to $85,000, or for about 76 percent of the horizontal axis, thereby "proving" the "... wealth-health relationship exists only for small sgemtns of the population." This statement is incorrect; over 70 percent of households had income below $25,000 in 1980. Finally, the GAO report ignores the dozen of so other studies that were cited in the material that GAO reviewed, for example, in OMB's testimony before the Senate Government Affairs Committee, its letter to DOL, and its review of the literature published by DOL in the *Federal Register*, 57 FR 27005.

Table 2. Summary of Selected Studies on Income and Health

Dollar amounts in millions

Study	Data	Implicit income gains necessary to avert one death	Comments
Keeney (1990)	Used income and mortality correlations from Kitagawa and Hauser, (1960) data, and others.	$12.3	Cited in *UAW* v. *OSHA*, as $7.25 1980 dollars. Represents an upperbound.
Joint Economic Committee (1984)	Aggregate U.S. income, employment, mortality, and morbidity; 1950–1980	$1.8 to $2.7	Reflects income loss from recession of 1974–75.
Anderson and Burkhauser (1985)	4878 male workers over 10 years, 1969–1979	$1.9 (wages), $4.3 (other income)	Older workers aged 58–63. Measured effects of wages and of value of one's home on mortality.
Duleep (1986)	9618 white married male workers aged 35–64 over 6 years, 1973–1978	$2.6	Controls for prior disability and educational attainment.
Duleep (1989)	13,954 white married male workers aged 25–64 over 6 years, 1973–1978	$6.5	Finds income effects at all income levels.
Duleep (1991)	9618 white married male workers aged 35–64 over 6 years, 1973–1978	$3.9	Controls for prior disability, educational attainment, and exposure to occupational hazards.
Keeney (1990)	Used income and mortality correlations from Kitagawa and Hauser, (1960) data, and others.	$12.3	Cited in *UAW* v. *OSHA*, as $7.25 1980 dollars. Represents an upperbound.
Wolfson (1992)	500,000 Canadian workers, over 10–20 years	$6	Investigates longevity rather than mortality. Finds income effects at highest quintiles of income.
National Institutes of Health (1992)	1,300,000 Americans, all ages, 1979–1985	$12.4	Estimate reflects effect of income changes on family mortality. Study does not use multiple regression, does not control for prior health status or education.
Chirikos and Nestel (1991)	5,020 men aged 50–64 studied during 1971–1983.	$3.3 [a]	Uses two measures of health endowments.
Chapman and Hariharan (forthcoming)	5,836 older men over 10 years	$1.3	Uses four distinct controls for prior health conditions.
Graham, Hung-Chang and Evans (1992)	38 years of age-adjusted mortality and income data for the U.S.	$4.0	Distinguishes effects of permanent income from those of transitional income.

well as economists. More importantly, the estimates of the relationship between income and mortality exhibit a rough similarity. These estimates of WTS range from $1.3 million to $12.3 million in increased GDP equaling one death averted. This rough similarity exists despite important differences in samples, in estimation techniques, and in the degree to which the method of estimation controls for confounding variables such as health-care technology, educational achievement, and prior health status.[30]

Are Relationships Between Income and Mortality Causal?

To estimate a causal relation between income and mortality it is necessary to control for prior health status, a potentially important confounding variable. Observed correlations between income and mortality that fail to correct for initial health may overestimate the causal relation from income to health to the extent that poor health causes reductions in wages and other earned income, and is directly associated with higher

[30] Many of the estimates of WTS that appear in this table are taken from a summary of selected studies on the relation of income to mortality that was published by OSHA in the *Federal Register* on June 12, 1992, as part of its PEL rule. Note that in several instances the WTS estimates were calculated by OMB staff using the estimated effects of income on mortality that were reported by the authors.

mortality risk. Overestimates of the correlations between income and health in turn result in underestimates of WTS.

The first study to consider the effect of income on health controlling for the effect of initial health status was Harriet Duleep's (1986, 1991). Using a sample of 9,618 white married men, Duleep held constant both whether the workers were initially disabled, and their educational achievement and found a significant effect of income on mortality risk. Chirikos and Nestel (1991) found significant effects of income on mortality, holding constant both a measure of parents' longevity, and a time-varying index of physical and emotional impairment. Chapman and Hariharan (1992) showed that including controls for prior health status reduces by a factor of two the magnitude of the effect of wealth on mortality risk. Their measures of prior health status are the most comprehensive and include information on the longevity of the respondents' parents, each respondent's rating of his own health, the value of medical bills in the year prior to the start of the study, and a measure of health-related limits to the ability to work. While Chapman and Hariharan succeeded in illustrating the importance of controls for prior health status, even their WTS estimate, $1.3 million in increased GDP for every death averted, may still depend in part on unmeasured variations in health.[31]

Does the Distribution of Regulatory Costs Matter?

If WTS differs significantly across different demographic groups, and if the regulatory costs are not borne uniformly by such groups, then health-health analysis should be conducted on a disaggregated basis. In particular it should identify which groups bear what parts of the total regulatory costs and calculate the induced mortality effects using the WTS appropriate for each group. Thus, if regulatory costs are borne exclusively by the very wealthy, and WTS for this group is very high, then the mortality consequences of regulatory spending are much lower than if the regulatory costs were borne primarily by the poor. If, however, WTS varies little with income, or if regulatory costs are borne uniformly by the U.S. population, then health-health analysis may be conducted at a more aggregate level, using a WTS estimate that is representative of the U.S. population as a whole.

Neither Duleep (1991), nor Chapman and Hariharan showed that income effects on mortality risk differ significantly by income level, after taking initial health status into account. Wolfson, *et al.*, (*Journal of Gerontology*, forthcoming), on the other hand, showed that longevity differs significantly between the highest income quintile and the next highest income quintile. Although the Wolfson study does not control for initial health status, it demonstrates that income continues to be associated with lower mortality risk at fairly high income levels. Keeney, using in part the relation between mortality and income provided by Kitagawa, provided estimates of aggregate WTS for different assumptions about the regressivity of regulatory costs. He cited several studies that found that lower income people ended up bearing a greater share of regulatory costs than their share of income, that is, the incidence of regulatory costs was regressive. Using reasonable assumptions about regressivity, Keeney calculated WTS estimates of less than half of his $7.25 million in increased GDP for every death averted (a figure which assumed that regulatory costs were borne proportionately to income).

Thus differences in regressivity of the regulatory burden appear to affect estimates of aggregate WTS by only 50 percent. Discrepancies of this magnitude are small relative to the uncertainties in risk assessment generally, and, for example, cancer risk assessments in particular (U.S. OMB, 1990–1991, pp. 13–26); Gold, *et al.* 1992).[32] Conventional assessments of cancer risk attributable to exposure to suspected or known carcinogens are typically reliable only up to an order of magnitude. Thus application of health-health analysis in the aggregate may similarly offer an acceptable approximation.

What Are the Best Estimates of Aggregate WTS?

The WTS estimates (implicit in studies like those by Chapman and Hariharan, Duleep, and Wolfson, et al.), which rely on samples of older men, may be biased relative to the WTS for the U.S. population as a whole. First, these studies ignore the fact that many men born during a certain period may already have died before data collection began. Excluding these prema-

[31] To the extent that some of these are intrinsically unobservable to an econometrician, the best means of estimating the effects of income on mortality in future research may be to exploit data in which income variations are entirely independent of health, e.g., lottery winnings. Extensions of the results of studies of lottery players to the population as a whole may be problematic if lottery players are not representative of the population as a whole.

[32] Gold, *et al.*, argue in a recent article in *Science* that widespread exposures to naturally occurring rodent carcinogens may cast doubt on the relevance to human cancer of far lower exposures to synthetic rodent carcinogens. They conclude that regulatory policy designed to reduce human cancer risks needs rethinking, in part because economic and health-related tradeoffs may make current regulatory policies counterproductive.

ture deaths from the study may reduce the measured association between income and mortality. On the other hand, measured associations between income and health may be large later in life because the poor health of poorer older people is a consequence of their earlier low incomes. Second, by focusing on wage income, rather than on family income, the studies introduce measurement error that tends to bias towards zero the estimated coefficients, and therefore bias the WTS estimate upwards. Third, some evidence indicates that the effects of income on health are less for women than for men.[33] These WTS estimates, while valid for the samples from which they are derived, are thus not necessarily representative of WTS of the population as a whole.

One indication of the sensitivity of WTS estimates to the choice of population may be developed by comparing the above estimates with those available through a recently released National Institutes of Health study (USHHS, 1992). This study reports annual risk of death by family income for individuals of various ages, races and sexes. It may be used to derive an estimate of the WTS that is appropriate for populations of various demographic compositions. For example, if all families were composed of a man aged 35–44, a woman aged 35–44, a boy aged 15–24 and a girl aged 0–14, then an increase in GDP of $12.4 million would be associated with an increase of one additional premature death.[34] From failing to correct for causal effects of health on income, this estimate may be too low, although this possible bias is mitigated by the focus on multiple family members. Contributing to a possible upward bias is the reported exclusion of some mortality among infants and children aged 0–14.

To derive estimates of WTS appropriate for the population as a whole, it may be useful to consider data on the entire U.S. population. Graham, Hung-Chang, and Evans (1992) exploit almost 40 years of aggregate data for the United States and distinguish the effects of secular changes in income, that is, permanent income, from changes associated with transitory income. Measuring permanent income as consumption expenditure, they find that age-adjusted mortality rates are significantly (negatively) correlated with income. Their analysis holds constant the aggregate unemployment rate, a proxy for transitory income, and finds that deaths from heart disease, cerebrovascular causes, and infant mortality are all related to income. Their results lead to a WTS for the United States of $4.0 million.[35] This estimate reflects links between mortality and national income (e.g., better medical research) that are independent of family behavior. This estimate, which is implicitly valid for the age distribution of the United States as a whole, is close to estimates derived from other data sources using other methods.

Another means of assessing the effect of changes in income on changes in health status is to compare income and health across different countries. Data on gross domestic product per capita, adjusted for purchasing power parity and expressed in terms of 1980 international prices, are provided for years up to 1985 by Summers and Heston (1988). The World Bank provides age-adjusted longevity estimates for the years 1965 and 1986, as well as crude birth and death rates.[36] While the World Bank estimates show differences in longevity between the sexes, this discussion uses a simple average of male and female longevity at birth as a summary measure of life expectancy.

Figure 1 shows the experience of selected countries during a recent 21-year interval. For the seven largest economies in the Organization of Economic Cooperation and Development (OECD), gains in longevity were achieved only with substantial gains in income. The data are thus consistent with the notion that gains in life expectancy above about 70 years require increases in income. Further, the association of income changes with longevity gains for this group of wealthier countries appears consistent and predictable.[37]

Statistical analysis of the effect of GDP on longevity reveals that an increase in GDP per capita within a country during the 2 decades ending in 1985 is

[33] These studies concentrate on the relation between male mortality and wages because the labor force participation of men is higher, and because male mortality risk is higher, thus permitting a smaller sample to be utilized.

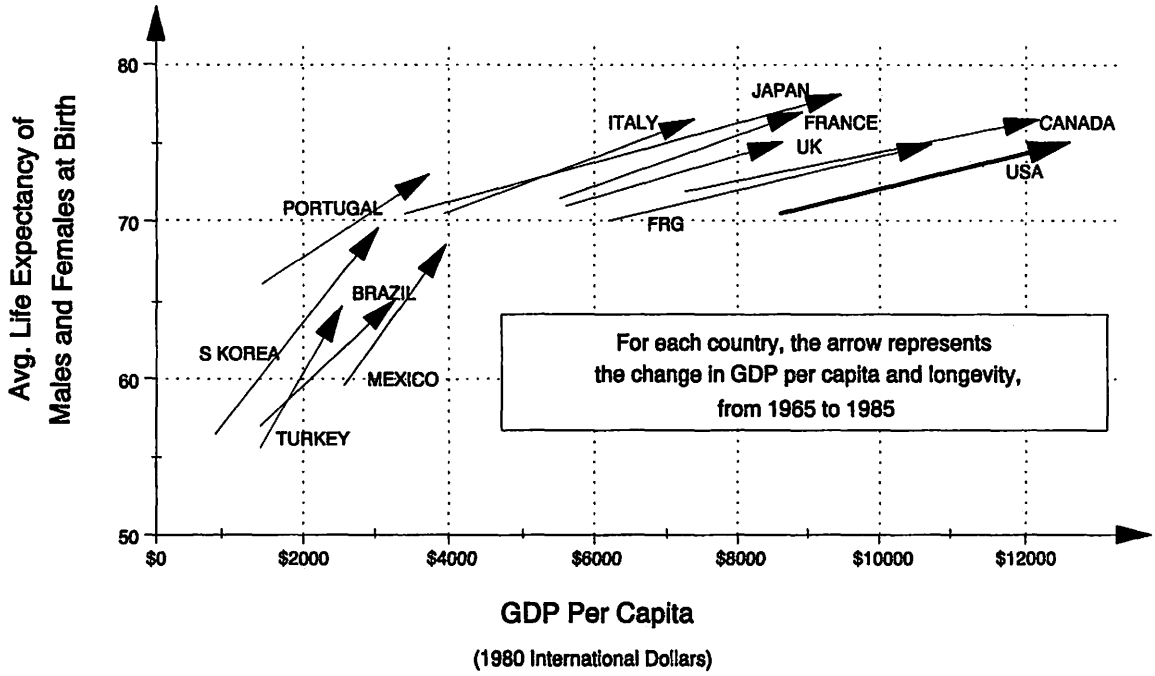
[34] This estimate is derived by assuming that the income change is from about $7,500 to about $37,500, in 1980 dollars. See p. 206 of the NIH study for more details.

[35] They report that the effect of a dollar increase in permanent income, measured in 1982 dollars, on the age-adjusted mortality rate, in deaths per 100,000 per year, is −.034. The WTS is thus 100,000/.034, or $2.9 million. Correcting to current dollars using the GNP deflator gives $4.0 million as an estimate of WTS.

[36] See the World Development Indicators, from the *World Development Report*, for various years.

[37] Analyses relying on international data are commonly subject to confounding resulting from the inadvertent omission of relevant variables. For example, the greater longevity of Norwegians relative to Americans may be due not to income differences but rather to consumption of more fish, less meat, and exposure to less ultraviolet sunlight. To correct for all such factors which vary across countries but are constant over time, the analysis conducted here relies on the relation between income within a country over time and longevity within a country over time. This approach thus controls for all potentially confounding variables such as the distribution of income or the quality of education among adults to the extent that these are constant within countries during the period of the sample.

Figure 1. Changes in Longevity and Per Capita GDP
Selected Countries



Sources: Longevity: World Development Indicators, The World Bank;
GDP: Summers and Heston (1988).

associated with increases in longevity equal to 8.4 divided by the level of GDP per capita.[38] Thus, for the United States, an increase of $100 in 1991 GDP per capita would be expected to have resulted in longevity gains of about 3.7 percent of a year (3.7%=100 5 8.4/22611), or about 14 days. Put differently, of the annual real income gains per capita experienced during recent periods in the United States, 1 percent, may be expected to be associated with annual increases in life-expectancy at birth of a bit more than a month.

To calculate WTS requires an estimated relation between income and mortality. Statistical analysis indicates that a 1 percent rise in income within a country is on average associated with a .32 percent decline in mortality risk.[39] Given this estimate WTS may be calculated as GDP/(.321 5 mortality). For the United States, this formula implies that WTS today is about $8 million. This is well within the range of the estimates made by Keeney (1990) and Graham, et al. (1992).

Thus, the data on GDP growth and vital statistics (such as longevity and mortality) suggest that WTS should be between $4 and $12 million for the United States.

The relationship between WTS and WTP provides an independent check of the estimates of WTS. In particular, one may solve for the marginal propensity to spend on risk-reducing activities using the existing

[38] The model assumes that longevity is linear in the (natural) logarithm of GDP (per capita). This assumption is consistent with the existence of biological limits to the duration of life. In particlar, as income grows without bound, the effect of an additional dollar of income on longevity goes to zero. The standard error for this estimate of 8.4 is 1.28. The R^2 = .918, and the number of observations is 202. The sample consists of GDP and longevity data for each of 101 countries in 1965 and in 1985–1986.

[39] The sample consists of mortality rates and income for 101 countries in 1965 and in 1985–1986. The standard error for this estimate of the elasticity of gross mortality with respect to GDP per capita is .0688, indicating that a 95 percent confidence interval for the true elasticity extends from about −.18 to −.45. Although this estimate assumes that a 1 percent change in income has a constant percentage change in gross mortality rates, alternative assumptions yield similar results.

estimates of WTS and WTP and then determine whether the derived estimate of marginal propensity to spend is reasonable. WTP estimates of the value of life are used in cost-benefit analysis of health and safety regulations and programs, so there is an extensive literature on WTP. The marginal propensity to spend for risk-reducing activities is a new concept and inherently difficult to measure. The unobservability of the risk-reducing properties of many expenditures renders difficult the task of obtaining satisfactory estimates of marginal propensity to spend.[40] Although expenditures on health care and safety equipment are mostly aimed at improving health and reducing risks, some portion of spending on food, shelter, and transportation is also aimed at reducing risks, as are private investments in new manufacturing plants and equipment and public investment in defense, education, infrastructure, and fighting crime.

In a recent survey of the literature on WTP to reduce risks, Fisher, *et al.* (1989) find a range of $1.6 million to $9 million (in 1986 dollars) but conclude that the estimates at the lower end are the most likely. This study was originally done for use by EPA in its Regulatory Impact Analyses. After reviewing the estimates, the Department of Transportation chose a value of life number of $1.5 million for some of its regulatory programs. Viscusi (1992a) states that "... most of the reasonable estimates of the value of life are clustered in the $3 to $7 million range [in 1990 dollars]" (page 73). These estimates are based on hedonic wage equations that estimate the premium or risk differential that workers demand for engaging in hazardous activities.

Using $3 million as the best estimate for WTP and an estimate of WTS of around $12 million implies that the marginal propensity to spend is about 0.25, or well within the expected range of between 0 and 1.[41] Furthermore, since health-care expenditures as a percent of GDP are more than 12 percent and growing, the marginal propensity to spend is at least that amount and very likely twice that when non-health-care expenditures to reduce risks are added. Thus 0.25 or higher may be a reasonable estimate for the marginal propensity to spend.

CONCLUSIONS AND IMPLICATIONS

Table 3 reproduces Table 2 from last year's Regulatory Program. It ranks selected regulations on the basis of their cost-effectiveness in saving lives. If the upper estimate of WTS, $12 million, is used, 21 of the least cost-effective regulations would have failed and 32 of the most cost-effective would have passed the health-health analysis test. If, on the other hand, the lower estimate of WTS, $4 million, is used, 26 regulations would have failed and 27 would have passed. Using this approach could have saved more lives at less cost and might have assured that the regulations that were issued would have had their intended effect—saving lives.

The estimate of $4 million to $12 million for WTS is still rough, and further refinements are needed. It is important to note, however, that policymakers cannot justify use of a high estimate of WTS by a desire to err on the side of safety. To see this, suppose for example that the critical income loss that generates one premature mortality per year is $15 million. Policymakers who are unaware of this wealth-health relation are willing to impose costs of up to $50 million per death avoided in the interests of erring on the side of safety. Promulgation of a regulation that costs, say, $30 million annually and is expected to save only one life per year through reduced exposure to hazardous chemicals will in fact have a perverse overall effect on mortality risk—on net increasing mortality risk by one fatality per year.

Although the theoretical notion that higher incomes enable people to avoid health and safety risks is persuasive, further efforts to compile careful econometric evidence of the magnitude of the causal link are needed. Existing evidence, however, is sufficient to substantiate claims that WTS is in this range. Furthermore, these estimates appear to be more reliable than conventional assessments of cancer risks, for example, which are accurate only up to an order of magnitude. It is incumbent on policy analysts to consider the implications of health-health analysis and, in particular, the notion that health and safety regulations that are less cost-effective than some threshold, may in fact be counterproductive, and not have their intended effect on health and safety.

OMB welcomes comments on the issues raised in this section. In particular, we are interested in whether our Regulatory Impact Analysis Guidance should be modified to take into account this new approach (see appendix V).

[40] Viscusi (1992b) estimates the marginal propensity to spend at between .1 and .3, based on the assumption that the marginal propensity to spend for risk-reducing activities lies between what is spent on health care and health care plus food in OECD countries.

[41] This calculation assumes that the WTS and WTP estimates are for the same population. In fact, many WTP estimates reflect wage premiums received by middle-aged men for occupational safety risks. Comparisons of these estimates to WTS estimates that reflect aggregate, economy-wide effects requires an assumption that WTP does not vary significantly by demographic characteristics such as age and sex. Additional evidence is necessary to determine whether such variations are significant.

Table 3. Risks and Cost-Effectiveness of Selected Regulations

[From the Budget for Fiscal Year 1992—Table C–2, Part 2, p. 370]

Regulation [1]	Year Issued	Health or Safety?	Agency	Baseline Mortality Risk per Million Exposed	Cost per Premature Death Averted ($Millions 1990)
Unvented Space Heater Ban	1980	S	CPSC	1,890	0.1
Aircraft Cabin Fire Protection Standard	1985	S	FAA	5	0.1
Auto Passive Restraint/Seat Belt Standards	1984	S	NHTSA	6,370	0.1
Steering Column Protection Standard [2]	1967	S	NHTSA	385	0.1
Underground Construction Standards [3]	1989	S	OSHA-S	38,700	0.1
Trihalomethane Drinking Water Standards	1979	H	EPA	420	0.2
Aircraft Seat Cushion Flammability Standard	1984	S	FAA	11	0.4
Alcohol and Drug Control Standards [3]	1985	H	FRA	81	0.4
Auto Fuel-System Integrity Standard	1975	S	NHTSA	343	0.4
Standards for Servicing Auto Wheel Rims [3]	1984	S	OSHA-S	630	0.4
Aircraft Floor Emergency Lighting Standards	1984	S	FAA	2	0.6
Concrete & Masonry Construction Standards [3]	1988	S	OSHA-S	630	0.6
Crane Suspended Personnel Platform Standard	1988	S	OSHA-S	81,000	0.7
Passive Restraints for Trucks & Buses (Proposed)	1989	S	NHTSA	6,370	0.7
Side-Impact Standards for Autos (Dynamic)	1990	S	NHTSA	NA	0.8
Children's Sleepwear Flammability Ban [4]	1973	S	CPSC	29	0.8
Auto Side Door Support Standards	1970	S	NHTSA	2,520	0.8
Low-Altitude Windshear Equipment & Training Standards	1988	S	FAA	NA	1.3
Electrical Equipment Standards (Metal Mines)	1970	S	MSHA	NA	1.4
Trenching and Excavation Standards [3]	1989	S	OSHA-S	14,310	1.5
Traffic Alert and Collision Avoidance (TCAS) Systems	1988	S	FAA	NA	1.5
Hazard Communication Standard [3]	1983	S	OSHA-S	1,800	1.6
Side-Impact Stds for Trucks, Buses, and MPVs (Proposed)	1989	S	NHTSA	NA	2.2
Grain Dust Explosion Prevention Standards [3]	1987	S	OSHA-S	9,450	2.8
Rear Lap/Shoulder Belts for Autos	1989	S	NHTSA	NA	3.2
Standards for Radionuclides in Uranium Mines [3]	1984	H	EPA	6,300	3.4
Benzene NESHAP (Original: Fugitive Emissions)	1984	H	EPA	1,470	3.4
Ethylene Dibromide Drinking Water Standard	1991	H	EPA	NA	5.7
Benzene NESHAP (Revised: Coke Byproducts) [3]	1988	H	EPA	NA	6.1
Asbestos Occupational Exposure Limit [3]	1972	H	OSHA-H	3,015	8.3
Benzene Occupational Exposure Limit [3]	1987	H	OSHA-H	39,600	8.9
Electrical Equipment Standards (Coal Mines) [3]	1970	S	MSHA	NA	9.2
Arsenic Emission Standards for Glass Plants	1986	H	EPA	2,660	13.5
Ethylene Oxide Occupational Exposure Limits [3]	1984	H	OSHA-H	1,980	20.5
Arsenic/Cooper NESHAP	1986	H	EPA	63,000	23.0
Haz Waste Listing for Petroleum Refining Sludge	1990	H	EPA	210	27.6
Cover/Move Uranium Mil Tailings (Inactive Sites)	1983	H	EPA	30,100	31.7
Benzene NESHAP (Revised: Transfer Operations)	1990	H	EPA	NA	32.9
Cover/Move Uranium Mill Tailings (Active Sites)	1983	H	EPA	30,100	45.0
Acrylonitrile Occupational Exposure Limit [3]	1978	H	OSHA-H	42,300	51.5
Coke Ovens Occupational Exposure Limit [3]	1976	H	OSHA-H	7,200	63.5
Lockout/Tagout [3]	1989	S	OSHA-S	4	70.9
Asbestos Occupational Exposure Limit [3]	1986	H	OSHA-H	3,015	74.0
Arsenic Occupational Exposure Limit [3]	1978	H	OSHA-H	14,800	106.9
Asbestos Ban	1989	H	EPA	NA	110.7
Diethylstilbestrol (DES) Cattlefeed Ban	1979	H	FDA	22	124.8
Benzene NESHAP (Revised: Waste Operations)	1990	H	EPA	NA	168.2
1,2-Dichloropropane Drinking Water Standard	1991	H	EPA	NA	653.0
Haz Waste Land Disposal Ban (1st 3rd)	1988	H	EPA	2	4,190.4
Municipal Solid Waste Landfill Standards (Proposed)	1988	H	EPA	<1	19,107.0
Formaldehyde Occupational Exposure Limit [3]	1987	H	OSHA-H	31	86,201.8
Atrazine/Alachlor Drinking Water Standard	1991	H	EPA	NA	92,069.7
Haz Waste Listing for Wood-Preserving Chemicals	1990	H	EPA	<1	5,700,000.0

[1] 70-year lifetime exposure assumed unless otherwise specified.

[2] 50-year lifetime exposure.

[3] 45-year lifetime exposure.

[4] 12-year exposure period.

NA=Not available.

Agency Abreviations. CPSC: Consumer Product Safety Commission; MSHA: Mine Safety and Health Administration; EPA: Environmental Protection Agency; NHTSA: National Highway Traffic Safety Administration; FAA: Federal Aviation Administration; FRA: Federal Railroad Administration; FDA: Food and Drug Administration; OSHA-H: Occupational Safety and Health Administration, Health Standards; OSHA-S: Occupational Safety and Health Administration, Safety Standards.

Source: John F. Morrall, III, "A Review of the Record," *Regulation*, Vol. 10, No. 2 (1986), p. 30. Updated by the author, *et al.*

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APPENDIX IV

Executive Order No. 12291
Annual Report for 1991

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I. INTRODUCTION

This report provides information on the implementation of Executive Order No. 12291 for the year ending December 31, 1991. It also describes trends in regulatory activity during the past eleven years.

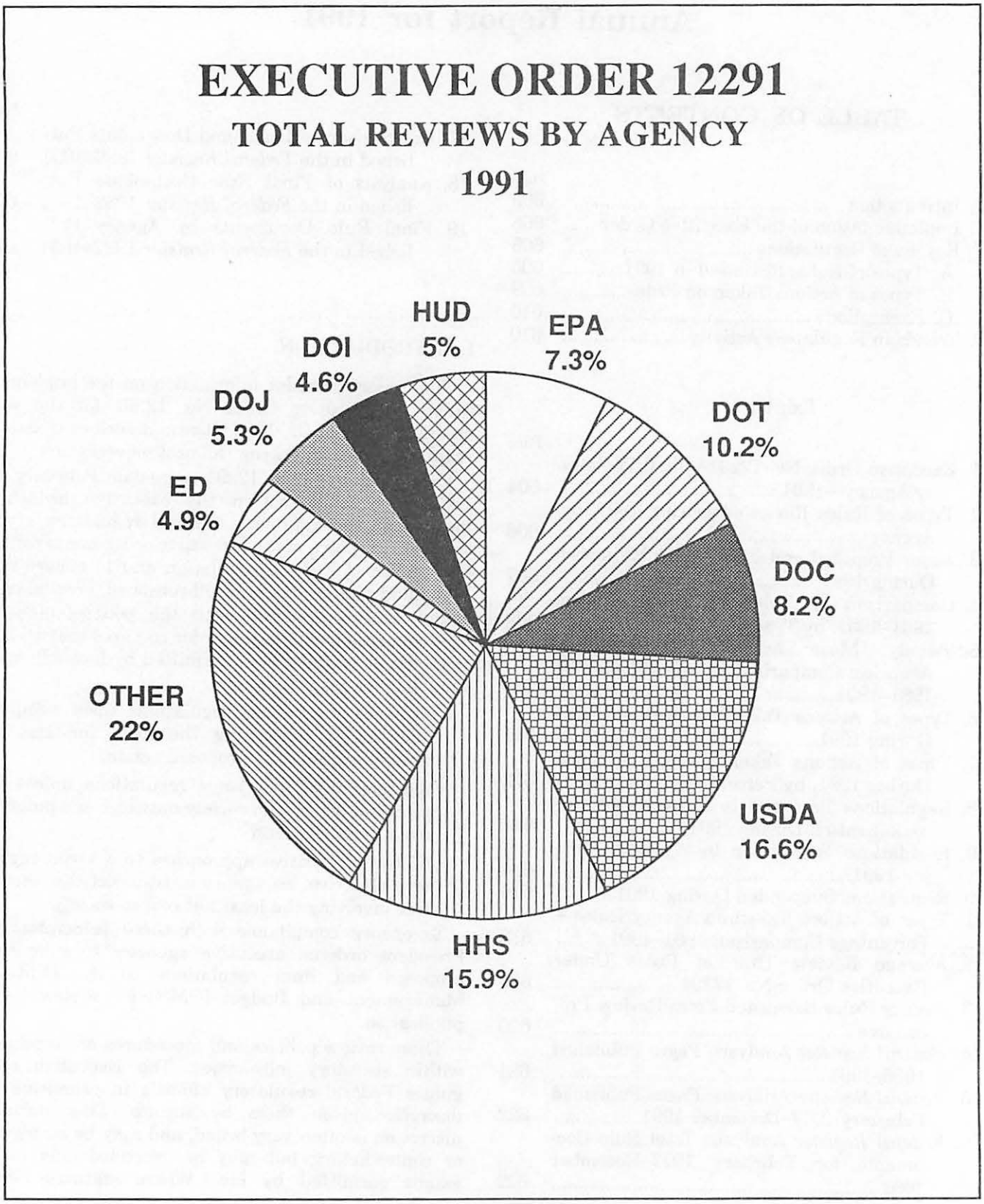
Executive Order No. 12291, signed on February 17, 1981, established within the executive branch a mechanism for improving Federal regulatory activities. The purposes of the Executive order are to control the growth of Federal regulation and to ensure that individual regulations are well-reasoned, economically sound, and coordinated with the policies of other agencies. In particular, the order requires that all new regulations, to the extent permitted by law, adhere to the following principles:

- Agencies must base regulations upon adequate information concerning the need for and the consequences of the proposed action;
- Agencies must not issue regulations unless the potential benefits to society outweigh the potential costs to society; and
- Of the alternative approaches to a given regulatory objective, an agency must select the alternative involving the least net cost to society.

To ensure compliance with these principles, the President ordered executive agencies to submit all proposed and final regulations to the Office of Management and Budget (OMB) for review before publication.

These review policies and procedures are conducted within statutory authorities. The Executive order guides Federal regulatory officials in exercising the discretion given them by statute. This statutory discretion is often very broad, and may be ambiguous or contradictory, but may be exercised only to the extent permitted by law. Where statutes clearly

EXHIBIT 1.


EXECUTIVE ORDER 12291
TOTAL REVIEWS BY AGENCY
1991
HUD 5%
EPA 7.3%
DOI 4.6%
DOJ 5.3%
DOT 10.2%
ED 4.9%
DOC 8.2%
OTHER 22%
USDA 16.6%
HHS 15.9%

exclude economic considerations, by their terms, any Executive order policies to the contrary are overridden. The order applies to general policymaking, such as "informal rulemaking" under the Administrative Procedure Act. It does not apply to adjudicatory proceedings.

This is the eleventh annual report on the order's implementation. Section II describes the requirements and procedures of the order. Section III presents detailed information on the types of rules reviewed and the types of actions taken by OMB in 1991. Comparisons are then made between 1991 data and those of 1981 through 1990. Section IV examines the nature and extent of regulatory activity since 1977 by analyzing certain statistics of *Federal Register* activity.

II. IMPLEMENTATION OF THE EXECUTIVE ORDER

The Office of Information and Regulatory Affairs (OIRA) in OMB oversees agency compliance with Executive Order No. 12291. OIRA seeks to ensure, on a day-to-day basis, that agency regulatory activity reflects the President's regulatory policies described in the order.

OIRA reviews "major" regulations with special attention. Regulations so designated have economic costs of over $100 million annually, or are projected to have significant effects on employment, inflation, or industry viability. A regulatory impact analysis (RIA) must accompany major regulations at both proposed and final rulemaking stages. An RIA assesses the costs and benefits of the action and its alternatives. OMB may waive the RIA requirements in special cases; for example, in order to expedite publication of an emergency regulation. Agencies must submit major proposed rules to OMB at least 60 days before publication, and major final rules at least 30 days before publication.

Executive agencies must transmit nonmajor regulations to OMB at least 10 days prior to planned publication. Executive Order No. 12291 does not require agencies to ensure that their nonmajor rules are consistent with the Executive order's principles to the extent permitted by law. Many agencies perform an initial analysis of the economic impact of nonmajor rules if they believe the rule will have a significant effect, or if it will be useful in assessing the impact.

III. REVIEW OF REGULATIONS

A. Types of Rules Reviewed in 1991

OMB reviewed 2,523 agency rules in 1991 under Executive Order No. 12291. Exhibit 1 shows that nine agencies accounted for 78 percent of the rules reviewed. These agencies were: the Department of Agriculture (418 rules), the Department of Health and Human Services (402), the Department of Transportation (257), the Department of Commerce (208), the Environmental Protection Agency (185), the Department of Justice (133), the Department of Housing and Urban Development (125), the Department of Education (124), and the Department of the Interior (115).

Exhibit 2 shows the number of rules reviewed during 1991 by each agency. Rules are classified as either major or nonmajor, and either proposed (NPRM) or final. Of the rules OMB reviewed in 1991, 3 percent were major proposed rules and 2.7 percent were major final rules. Nonmajor rules constituted 94.4 percent of all rules. The Departments of Agriculture and Health and Human Services had the largest number of nonmajor proposed rules. These two departments also had the largest number of nonmajor final rules.

Exhibit 3 lists by name all major proposed and final regulations reviewed in 1991.

Exhibit 4 displays changes over the last 11 years in the types of rules reviewed. The total number of rules OMB reviewed in 1991 increased 18 percent from 1990 and was 9.9 percent lower than the number reviewed in 1981. The number of proposed rules in 1991 increased 38.3 percent from 1990 and increased 20 percent from 1981. The number of final rules reviewed in 1991 increased 4 percent from 1990 and decreased 25 percent from 1981.

Exhibit 5 shows, by agency, the number of rules reviewed during each of the last 11 years, for the 20 most active rule-producing agencies. Comparing 1991 with 1981, the greatest percentage decline in the total number of rules reviewed occurred at the Environmental Protection Agency (-74.8 percent), the Department of Energy (-37.7 percent), and the Department of Agriculture (-36.3 percent). The Defense Department experienced the largest percentage increase since 1981 (525 percent), followed by the State Department (253.8 percent), Health and Human Services (243.6 percent), Small Business Administration (240 percent), Department of Justice (150.9 percent) and the Office of Personnel Management (128.9 percent).

EXHIBIT 2. TYPES OF RULES REVIEWED DURING 1991, BY AGENCY

Agency	Total rules	Nonmajor		Major	
		NPRM	Final	NPRM	Final
Agriculture	418	192	191	15	20
Health and Human Services	402	174	191	26	11
Transportation	257	114	129	6	8
Commerce	208	77	131	0	0
Environmental Protection Agency	185	92	68	17	8
Justice	133	51	80	0	2
Housing and Urban Development	125	63	57	1	4
Education	124	63	61	0	0
Interior	115	60	52	1	2
Office of Personnel Management	87	33	54	0	0
Veterans Affairs	71	33	38	0	0
Treasury	52	29	22	1	0
Labor	47	20	23	1	3
State	46	26	20	0	0
General Services Administration	37	5	32	0	0
Small Business Administration	34	11	17	2	4
Energy	33	18	13	1	1
Defense	25	13	11	0	1
Railroad Retirement Board	21	11	10	0	0
Federal Emergency Management Agency	19	12	7	0	0
National Aeronautics and Space Administration	15	0	15	0	0
National Archives and Records Administration	7	1	6	0	0
Pension Benefit Guaranty Corporation	7	1	6	0	0
United States International Development Cooperation Agency	7	1	6	0	0
Architectural and Transportation Barriers Compliance Board	6	0	0	3	3
Equal Opportunity Employment Commission	6	3	2	1	0
Panama Canal Commission	6	1	5	0	0
United States Information Agency	6	5	1	0	0
National Science Foundation	5	2	3	0	0
National Indian Gaming Commission	3	2	1	0	0
Office of Government Ethics	3	1	2	0	0
ACTION	2	1	1	0	0
Committee for Purchase from the Blind and Other Severely Handicapped	2	1	1	0	0
National Endowment for the Arts	2	1	1	0	0
Federal Financial Institutions Examination Council	1	1	0	0	0
Federal Mediation and Conciliation Service	1	0	1	0	0
Institute of Museum Services	1	0	1	0	0
James Madison Memorial Fellowship Foundation	1	1	0	0	0
Office of Management and Budget	1	0	1	0	0
Other Temporary Commissions	1	0	1	0	0
Peace Corps	1	1	0	0	0
Total	2,523	1,120	1,261	75	67
Percentage of total	100.0	44.4	50.0	3.0	2.7

EXHIBIT 3. MAJOR PROPOSED AND FINAL RULES REVIEWED DURING 1991

Major Proposed Rules

UNITED STATES DEPARTMENT OF AGRICULTURE
- Export Enhancement Program
- Targeted Export Assistance Program
- Export Enhancement Program
- Targeted Export Assistance Program
- 1990 Common Program Provisions for Wheat, Feed Grains
- Dairy Products
- Animal Welfare (Part 3)
- Animal Welfare Standards

DEPARTMENT OF HEALTH AND HUMAN SERVICES
- Respiratory Protective Devices
- Hepatitis B Vaccination Acceptance Among Adolescents
- Medicare Coverage of Adult Liver Transplants
- Inpatient Hospital Prospective Payment System and Fiscal Year 1991 Rates
- Additional Safe Harbors Provisions
- Food Labeling—Mandatory Status of Nutrition Labeling
- Implementing the Clinical Laboratory Improvement Amendments of 1988

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- Community Development Block Grant—State Program

DEPARTMENT OF LABOR
- Occupational Exposure to Cadmium
- Occupational Exposure to Asbestos, Tremolite, etc.
- Vehicle Safety
- Process Safety Management of Highly Hazardous Chemicals
- Respiratory Protection Standard
- Hazard Communication
- Walking and Working Surfaces

DEPARTMENT OF TRANSPORTATION
- Nondiscrimination on the Basis of Handicap in Federally Assisted Mass Transit Programs
- Small Airplane Worthiness Review Program, Notice 4
- Extension of Automatic Crash Requirements to Light Trucks
- Light Trucks Average Fuel Economy Standards, Model Years 1992–1994
- Center High-Mounted Stop Lamp on Vehicles Other Than Passenger Cars

TREASURY DEPARTMENT
- Liability of Common Carriers To Prevent Unmanifested Narcotics

ENVIRONMENTAL PROTECTION AGENCY
- Drinking Water Regulations, Synthetic Organic Chemicals—Phase V
- National Sewage Sludge Study
- Drinking Water, Lead, and Copper
- Effluent Guidelines & Standards, Offshore Subcategory
- VOC Monitoring and Aldicarb MCLGs/MCLs
- Corrective Action for Solid Waste Management Units
- Surface Impoundments
- South Coast Air Basin—Plans for Ozone & Carbon Monoxide
- Surface Impoundments

SMALL BUSINESS ADMINISTRATION
- Small Business Investment Companies

Major Final Rules

UNITED STATES DEPARTMENT OF AGRICULTURE
- 1990 Upland Cotton Program
- 1990 Feed Grains Program
- Wool and Mohair Support Prices for Marketing Year 1990
- Emergency Livestock Assistance
- 1990 Program Provisions for Rice
- 1990 Crop Sugar Beet and Sugarcane
- 1990 Crop Soybean Loan and Purchase Rate
- Community Program Guaranteed Loans
- Egg Research and Promotion Order

DEPARTMENT OF HEALTH AND HUMAN SERVICES
- Monthly Supplementary Medical Insurance Premium
- 1990 Mid-Year Changes to the Inpatient Hospital Prospective Payment System
- Clinical Laboratory Improvement Act: Fee Collection
- Inpatient Hospital Prospective Payments—Fiscal Year 1991
- Determining Disability for a Child Under Age 18
- OIG Anti-Kickback Provisions
- Safe Harbors for Protecting Health Plans

DEPARTMENT OF THE INTERIOR
- 1990–1991 Migratory Game Bird Hunting Regulations
- Incidental Take of Marine Mammals, Definition of Citizen of the United States
- Final Framework for Early-Season Migratory Bird Hunting

DEPARTMENT OF LABOR
- Attestation-Health Care Facilities Seeking To Employ Non-immigrant Nurses
- Training Wage Provision of the FLSA Amendments of 1989
- Minimum Wage Provisions of FLSA 1989 Amendments in Puerto Rico
- Minimum Wage Provisions of FLSA 1989 Amendments in Puerto Rico
- Electrical Safety-Related Work Practices

DEPARTMENT OF TRANSPORTATION
- Nondiscrimination on the Basis of Handicap
- Light Truck Fuel Economy Standard for Model Year 1992
- Side Impact Protection (Main Notice)
- Reporting Compliance With Phasing In of Dynamic Side Impact Requirements
- Side Impact Protection—Anthropomorphic Test Dummy
- Side Impact Protection—Moving Deformable Barrier

ENVIRONMENTAL PROTECTION AGENCY
- NPDES Permit Application for Storm Water Discharges
- National Primary & Secondary Water Regulations—35 Contaminants
- National Oil and Hazardous Substances Pollution Contingency Plan
- Toxicity Characteristic
- Land Disposal Restrictions for Third Third Scheduled Wastes
- Hazardous Waste Management System—Reportable Quantities Petroleum

EXHIBIT 3 (continued)

Hazardous Waste Management System—Wood Preservatives
NESHAP for Benzene
Protect Stratospheric Ozone
Volatility Regulations for Gasoline and Alcohol Blends Sold in Calendar Year 1992 and Beyond
Fuel Quality for Diesel Fuel Sold in 1993 and Later

Ohio New Source Review

SMALL BUSINESS ADMINISTRATION
Surety Bond Guarantee Program

EXHIBIT 4. COMPARISON OF RULES REVIEWED DURING 1981–1991, BY TYPE

Type of rule	Number of rules										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Nonmajor	2,705	2,559	2,422	2,055	2,155	1,934	2,246	2,280	2,141	2,057	2,381
Proposed	970	1,026	1,045	951	1,050	784	1,056	1,293	921	825	1,120
Final	1,735	1,533	1,377	1,104	1,105	1,150	1,190	987	1220	1232	1,261
Major	60	79	63	60	60	73	70	83	79	82	142
Proposed	25	29	22	33	21	25	40	43	32	39	75
Final	35	50	41	27	39	48	30	40	47	43	67
Total Proposed	995	1,055	1,067	984	1,071	809	1,096	1,336	953	864	1,195
Total Final	1,770	1,583	1,418	1,131	1,144	1,198	1,220	1,027	1,267	1,275	1,328
Total*	2,800	2,639	2,485	2,115	2,215	2,007	2,316	2,363	2,220	2,139	2,523
	Percent change										
	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87	1987–88	1988–89	1989–90	1990–91	1981–91
Nonmajor	-5.4	-5.4	-15.2	4.9	-10.3	16.1	1.5	-6.1	-3.9	15.8	-12.0
Proposed	5.8	1.9	-9.0	10.4	-25.3	34.7	22.4	-28.8	-10.4	35.8	15.5
Final	-11.6	-10.2	-19.8	0.1	4.1	3.5	-17.1	23.6	1.0	2.4	-27.3
Major	31.7	-20.3	-4.8	0.0	21.7	-4.1	18.6	-4.8	3.8	73.2	136.7
Proposed	16.0	-24.1	50.0	-36.4	19.0	60.0	7.5	-25.6	21.9	92.3	200.0
Final	42.9	-18.0	-34.1	44.4	23.1	-37.5	33.3	17.5	-8.5	55.8	91.4
Total Proposed	6.0	1.1	-7.8	8.8	-24.5	35.5	21.9	-28.7	-9.3	38.3	20.1
Total Final	-10.6	-10.4	-20.2	1.1	4.7	1.8	-15.8	23.4	0.6	4.2	-25.0
Total*	-5.8	-5.8	-14.9	4.7	-9.4	15.4	2.0	-6.1	-3.6	18.0	-9.9

*These totals include, in addition to the total of proposed and final rules, 35 rules in 1981 and 1 rule in 1982 to which Executive Order 12291 was not applicable, representing a 97.1 percent increase in rules of that type in 1981–82 and a 100 percent reduction in 1982–83.

EXHIBIT 5. TWENTY MOST ACTIVE RULE-PRODUCING AGENCIES: COMPARISON OF RULES REVIEWED 1981–1991

Agency	Number of rules										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
USDA	656	695	552	483	407	418	420	441	405	333	418
HHS	117	272	294	199	212	281	315	320	283	354	402
DOT	283	226	225	218	252	196	203	258	250	242	257
DOC	162	147	121	107	113	130	134	145	195	244	208
EPA	734	341	268	303	305	197	205	210	201	173	185
DOJ	53	51	72	46	78	46	84	52	100	78	133
HUD	74	130	112	108	90	68	64	105	78	63	125
ED	77	53	50	106	108	99	174	123	82	66	124
DOI	147	249	240	133	161	144	186	152	97	102	115
OPM	38	49	65	45	69	72	97	74	53	52	87
VA	69	70	69	70	65	62	67	82	95	87	71
TREAS	34	32	53	44	26	21	29	37	47	64	52
DOL	62	49	49	35	38	56	64	77	60	58	47
GSA	56	62	85	63	85	41	59	57	61	35	37
SBA	10	16	20	32	19	30	16	37	39	35	34
DOE	53	49	34	25	19	16	20	20	19	14	33
DOD	4	9	13	7	17	9	17	12	6	8	25
FEMA	16	6	29	16	26	24	26	30	29	25	19
NASA	10	11	13	11	25	15	15	17	16	9	15
STATE	13	10	3	4	7	4	19	17	15	9	46
	Percentage of change										
	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87	1987–88	1988–89	1989–90	1990–91	1981–91
USDA	5.9	-20.6	-12.5	-15.7	2.7	0.5	5.0	-8.2	-17.8	25.5	-36.3
HHS	132.5	8.1	-32.3	6.5	32.5	12.1	1.6	-11.6	25.1	13.6	243.6
DOT	-20.1	-0.4	-3.1	15.6	-22.2	3.6	27.1	-3.1	-3.2	6.2	-9.2
DOC	-9.3	-17.7	-11.6	5.6	15.0	3.1	8.2	34.5	25.1	-14.8	28.4
EPA	-53.5	-21.4	13.1	0.7	-35.4	4.1	2.4	-4.3	-13.9	6.9	-74.8
DOJ	-3.8	41.2	-36.1	69.6	-41.0	82.6	-38.1	92.3	-22.0	70.5	150.9
HUD	75.7	-13.8	-3.6	-16.7	-24.4	-5.9	64.1	-25.7	-19.2	98.4	68.9
ED	-31.2	-5.7	112.0	1.9	-8.3	75.8	-29.3	-33.3	-19.5	87.9	61.0
DOI	69.4	-3.6	-44.6	21.1	-10.6	29.2	-18.3	-36.2	5.2	12.7	-21.8
OPM	28.9	32.7	-30.8	53.3	4.3	34.7	-23.7	-28.4	-1.9	67.3	128.9
VA	1.4	-1.4	1.4	-7.1	-4.6	8.1	22.4	15.9	-8.4	-18.4	2.9
TREAS	-5.9	65.6	-17.0	-40.9	-19.2	38.1	27.6	27.0	36.2	-18.8	52.9
DOL	-21.0	0.0	-28.6	8.6	47.4	14.3	20.3	-22.1	-3.3	-19.0	-24.2
GSA	10.7	37.1	-25.9	34.9	-51.8	43.9	-3.4	7.0	-42.6	5.7	-33.9
SBA	60.0	25.0	60.0	-40.6	57.9	-46.7	131.3	5.4	-10.3	-2.9	240.0
DOE	-7.5	-30.6	-26.5	-24.0	-15.8	25.0	0.0	-5.0	-26.3	135.7	-37.7
DOD	125.0	44.4	-46.2	142.9	-47.1	88.9	-29.4	-50.0	33.3	212.5	525.0
FEMA	-62.5	383.3	-44.8	62.5	-7.7	8.3	15.4	-3.3	-13.8	-24.0	18.8
NASA	10.0	18.2	-15.4	127.3	-40.0	0.0	13.3	-5.9	-43.8	66.7	50.0
STATE	-23.1	-70.0	33.3	75.0	-42.9	375.0	-10.5	-11.8	-40.0	411.1	253.8

B. Types of Actions Taken on Rules

Exhibits 6 through 10 summarize the actions taken on agency rules under Executive Order No. 12291 during 1991. Exhibit 11 compares OMB's actions during 1991 with actions in previous years.

Exhibit 6 shows the number of rules by type of OMB action during 1991. Of the 2,523 rules reviewed during 1991, OMB found that 63.2 percent were consistent with the principles of the Executive order as submitted, 27.2 percent were consistent with the order after the agency adopted changes during the review period, 1.1 percent were inconsistent with the order and returned to the agency for reconsideration, 2.8 percent were withdrawn by agencies, and 2.7 percent were suspended. Emergency rules and rules subject to statutory or judicial deadlines constituted 3.0 percent of all 1991 rules, and 0.1 percent were sent improperly or were exempt.

Exhibit 7 shows the percentage of rules in each category for the 21 most active rulemaking agencies in 1991.

Exhibit 8 lists by name each of the 28 rules returned for reconsideration in 1991. Exhibit 9 lists by name each of the 70 rules withdrawn by agencies during OMB review in 1991. OMB may return regulations for reconsideration if it finds them to be inconsistent with the principles of the Executive order. Agencies may withdraw rules during review because they have concluded that the rules are inconsistent with the Executive order or for other reasons. An agency may, for example, wish to incorporate newly acquired information into a rule.

Exhibit 10 lists by name each of the 69 rules suspended in 1991. OMB may suspend rules, if agencies have not responded in a timely fashion to requests for information needed to complete a review.

Exhibit 11 compares OMB actions on agency rules during the past 11 years. The percentage of rules OMB found consistent with the Executive order declined rather steadily from 87.3 percent in 1981 to 68.3 percent in 1986, then remained stable until 1991, when it decreased to 63.2 percent. At the same time, the percentage of rules OMB found consistent after change increased sharply from 4.9 percent in 1981 to 23.7 percent in 1987 and increased to 27.2 percent in 1991. The percentage of rules that agencies withdrew through 1985 increased to 3.1 percent from 1.8 percent in 1981, then declined to 2.4 percent in 1988 and was 2.8 percent in 1991. The percentage of rules that OMB returned for agency reconsideration has fluctuated over the years but reached a low point of 0.4 percent in 1987 compared to a high of 2.7 percent in 1984. In 1991 the number returned for reconsideration moderated to 1.1 percent. The percentage of rules suspended in 1991 was 2.7 percent. The percentage of rules issued by agencies under emergency, statutory, or judicial deadlines has varied from 1.2 in 1985 to 4.3 the following year; in 1991 it was 3.0 percent.

Exhibit 12 shows OMB's average regulatory review time by agency from 1981 to 1991 for all major and nonmajor rules. Generally, review time for major rules is longer than for nonmajor rules because of their greater complexity and importance. In 1981 OMB's average review time for all major rules was 13 days; in 1991 it was 39 days. OMB's average review time in 1981 for nonmajor rules was 9 days, as compared with an average of 29 days in 1991. The 1991 average review time for all rules was 29 days.

C. Exemptions

Executive Order No. 12291 authorizes the Director of OMB to exempt classes of regulations from any or all of the requirements of the order. The exemptions granted by OMB fall into four broad categories: (1) rules that are essentially nonregulatory; (2) rules that delegate regulatory authority to States; (3) rules that largely or entirely affect individual entities and that do not involve broader policy issues; and (4) rules for which delay of even a few days could impose substantial costs and that are unlikely to involve significant policy issues.

At the end of 1991 OMB had granted a total of 29 exemptions (some covering more than one of the categories above) to eight agencies. Exhibit 13 lists these exemptions. Most of the exemptions were established during the initial years of the operation of the Executive order. In each case, OMB determined that the exempted regulations, as a class, were consistent with the goals and requirements of the Executive order. OMB continues to review all "major" rules as defined by the Executive order regardless of class exemptions. OMB may request that agencies submit specific rules within an exempt class and may revoke exemptions at any time.

IV. TRENDS IN REGULATORY ACTIVITY

Because there are no precise or agreed-upon measures of regulatory activity, the precise effect Executive Order No. 12291 has had on regulatory activity cannot be measured. It is useful, however, to compare the number of pages and the number of total rule documents (proposed rule documents plus final rule documents) published in the *Federal Register* during different time periods.

Exhibit 14 shows the number of pages published in the *Federal Register* from its inception in 1936 through 1991. There was little year-to-year change until the 1970s when the size of the *Federal Register* increased dramatically. But in 1981, the year Executive Order No. 12291 went into effect, the growth in the *Federal Register* ended.

In fact, the exhibit shows that from 1981 to 1986 the size of the *Federal Register* declined steadily on an annual basis. From 1981 through 1984, the number of pages published in the *Federal Register* decreased—there were 41.1 percent fewer pages in the *Federal Register* in 1984 than in 1980. In 1985 the number of pages rose modestly by 4.87 percent over 1984 levels. But in 1986 the number of *Federal Register* pages declined 11.3 percent to its lowest level since 1974. The number of published pages increased in the years 1987 through 1989 before declining modestly in 1990. In 1991 the number of pages increased again; nevertheless, the overall trend of the past 9 years is downward.

Exhibit 15 further depicts the effects of Executive Order No. 12291 on the size of the *Federal Register*. It does this by showing the number of pages published in the *Federal Register* each month since 1977. The

dramatic break with the upward trend in the 1970s is clearly evident.

Exhibit 16 depicts the total number of proposed and final rule documents published since 1977. This chart parallels the exhibit for pages published. It also indicates that since Executive Order No. 12291 was issued, Federal regulatory activity as represented by documents issued has decreased.

Exhibits 17, 18, and 19 provide various measures of regulatory activity since 1980.

EXHIBIT 6. TYPES OF ACTIONS TAKEN ON AGENCY RULES DURING 1991

Agency	Total reviews	Found consistent without change	Found consistent with change	Withdrawn by agency	Returned for reconsideration	Returned, sent improperly	Suspended	Emergency	Statutory or judicial deadline
Agriculture	418	283	92	11	7	1	4	6	14
Health and Human Services	402	256	108	8	5	0	17	7	1
Transportation	257	204	31	1	1	0	5	0	15
Commerce	208	166	31	6	0	0	2	3	0
Environmental Protection Agency	185	62	80	4	8	0	12	2	17
Justice	133	99	29	1	1	0	2	0	1
Housing and Urban Development	125	41	69	6	2	0	6	1	0
Education	124	32	76	5	2	0	9	0	0
Interior	115	88	20	1	0	0	4	0	2
Office of Personnel Management	87	50	31	6	0	0	0	0	0
Veterans Affairs	71	61	6	2	1	0	1	0	0
Treasury	52	43	4	5	0	0	0	0	0
Labor	47	25	15	1	0	0	2	0	4
State	46	25	16	2	0	0	2	0	1
General Services Administration	37	28	8	0	1	0	0	0	0
Small Business Administration	34	22	10	2	0	0	0	0	0
Energy	33	18	11	0	0	0	3	1	0
Defense	25	18	7	0	0	0	0	0	0
Railroad Retirement Board	21	15	6	0	0	0	0	0	0
Federal Emergency Management Agency	19	7	6	5	0	1	0	0	0
National Aeronautics and Space Administration	15	14	0	1	0	0	0	0	0
National Archives and Records Administration	7	5	1	1	0	0	0	0	0
Pension Benefit Guaranty Corporation	7	3	3	1	0	0	0	0	0
US International Development Cooperation Agency	7	5	2	0	0	0	0	0	0
Architectural and Transportation Barriers Compliance Board	6	0	6	0	0	0	0	0	0
Equal Opportunity Employment Commission	6	4	2	0	0	0	0	0	0
Panama Canal Commission	6	6	0	0	0	0	0	0	0
United States Information Agency	6	5	0	1	0	0	0	0	0
National Science Foundation	5	2	3	0	0	0	0	0	0
National Indian Gaming Commission	3	1	2	0	0	0	0	0	0
Office of Government Ethics	3	1	2	0	0	0	0	0	0
ACTION	2	0	2	0	0	0	0	0	0
Committee for Purchase from the Blind	2	0	2	0	0	0	0	0	0
National Endowment for the Arts	2	0	2	0	0	0	0	0	0
Federal Financial Institutions Examination Council	1	1	0	0	0	0	0	0	0
Federal Mediation and Conciliation Service	1	1	0	0	0	0	0	0	0
Institute of Museum Services	1	1	0	0	0	0	0	0	0
James Madison Memorial Fellowship Foundation	1	0	1	0	0	0	0	0	0
Office of Management and Budget	1	1	0	0	0	0	0	0	0
Other Temporary Commissions	1	0	1	0	0	0	0	0	0
Peace Corps	1	1	0	0	0	0	0	0	0
Total	2,523	1,594	685	70	28	2	69	20	55
Percentage of Total	100.0	63.2	27.2	2.8	1.1	0.1	2.7	0.8	2.2

*Because percentages are rounded, they do not add up to 100 percent.

EXHIBIT 7. TYPES OF ACTIONS TAKEN ON AGENCY RULES DURING 1991, BY PERCENTAGE

Agency	Total reviews	Found consistent without change (%)	Found consistent with change (%)	Withdrawn by agency (%)	Returned for reconsideration (%)	Returned, sent improperly (%)	Suspended (%)	Emergency or statutory/ judicial deadline (%)
Agriculture	418	67.7	22.0	2.6	1.7	0.2	1.0	1.4
Health and Human Services	402	63.7	26.9	2.0	1.2	0.0	4.2	1.7
Transportation	257	79.4	12.1	0.4	0.4	0.0	1.9	0.0
Commerce	208	79.8	14.9	2.9	0.0	0.0	1.0	1.4
Environmental Protection Agency	185	33.5	43.2	2.2	4.3	0.0	6.5	1.1
Justice	133	74.4	21.8	0.8	0.8	0.0	1.5	0.0
Housing and Urban Development	125	32.8	55.2	4.8	1.6	0.0	4.8	0.8
Education	124	25.8	61.3	4.0	1.6	0.0	7.3	0.0
Interior	115	76.5	17.4	0.9	0.0	0.0	3.5	0.0
Office of Personnel Management	87	57.5	35.6	6.9	0.0	0.0	0.0	0.0
Veterans Affairs	71	85.9	8.5	2.8	1.4	0.0	1.4	0.0
Treasury	52	82.7	7.7	9.6	0.0	0.0	0.0	0.0
Labor	47	53.2	31.9	2.1	0.0	0.0	4.3	0.0
State	46	54.3	34.8	4.3	0.0	0.0	4.3	0.0
General Services Administration	37	75.7	21.6	0.0	2.7	0.0	0.0	0.0
Small Business Administration	34	64.7	29.4	5.9	0.0	0.0	0.0	0.0
Energy	33	54.5	33.3	0.0	0.0	0.0	9.1	3.0
Defense	25	72.0	28.0	0.0	0.0	0.0	0.0	0.0
Railroad Retirement Board	21	71.4	28.6	0.0	0.0	0.0	0.0	0.0
Federal Emergency Management Agency	19	36.8	31.6	26.3	0.0	5.3	0.0	0.0
National Aeronautics and Space Administration	15	93.3	0.0	6.7	0.0	0.0	0.0	0.0
Other	69	53.6	42.0	4.3	0.0	0.0	0.0	0.0
Total	2,523	63.2	27.2	2.8	1.1	0.1	2.7	3.0

EXHIBIT 8. REGULATIONS RETURNED TO AGENCIES FOR RECONSIDERATION DURING 1991

Agency/Title of regulation	Type	Received	Reviewed
UNITED STATES DEPARTMENT OF AGRICULTURE			
Emergency Livestock Assistance—7 CFR Part 1475	FINAL	10/03/90	02/04/91
Poundage Quota and Marketing Assessments for the 1991–1995 Peanut Crops	NPRM	02/19/91	04/04/91
Peanuts—Peanuts Warehouse Storage Loans, Contract 1991–1995 Crops	NPRM	03/12/91	04/05/91
Use of Tocopherol ND Citric Acid in Various Meat Products	NPRM	09/23/91	12/19/91
Nutrition Labeling of Meat and Poultry Products	NPRM	10/15/91	10/24/91
Use of Tricalcium Phosphate in Mechanically Deboned Chicken	NPRM	11/27/91	12/19/91
Food Stamp Program: Allowing the Use of More Than One Denomination for Changemaking	NPRM	09/05/91	12/09/91
DEPARTMENT OF EDUCATION			
Perkins Loan, College Work-Study, and Supplemental Educational Opportunity	NPRM	09/20/90	01/14/91
Education Department General Administrative Regulations	NPRM	02/07/91	05/08/91
DEPARTMENT OF HEALTH AND HUMAN SERVICES			
BPD–689–P—Uniform Electronic Cost Reporting System for Hospitals	NPRM	09/28/90	01/10/91
Medicare Coverage of Home Health Services, Supervision and Discharge Planning	NPRM	11/28/90	03/11/91
Optional Payment System for Low Medicare Volume Skilled Nursing Facilities	NPRM	06/14/91	11/07/91
Income—Parent-to-Child Deeming, 20 CFR Part 416, Subpart K	NPRM	04/25/91	07/01/91
Runaway and Homeless Youth Program	NPRM	01/29/91	03/26/91
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
Real Estate Settlement Procedures Act	FINAL	03/08/91	03/28/91
Community Development Block Grant Funded Code Enforcement	NPRM	06/12/91	10/03/91
DEPARTMENT OF JUSTICE			
Aliens Fleeing Coercive Family Planning Policies	FINAL	06/19/91	09/17/91
DEPARTMENT OF TRANSPORTATION			
Emergency Position-Indicating Radio Beacons (EPIRB'S)	FINAL	04/24/91	08/01/91
DEPARTMENT OF VETERANS AFFAIRS			
LIne of Duty	NPRM	04/19/91	08/06/91
ENVIRONMENTAL PROTECTION AGENCY			
Procedures for Planning and Implementing Off-Site Response Actions	FINAL	12/05/90	04/09/91
Groundwater Monitoring at Hazardous Waste Facilities	FINAL	05/02/91	08/08/91
Reportable Quantities: The Designation Final Rule	FINAL	05/16/91	07/09/91
Reportabel Quantity (RQ) Adjustment (Final Rule)	FINAL	05/16/91	07/09/91
Reportable Quantity (RQ) Adjustment (Final Rule)	FINAL	07/29/91	11/22/91
Reportable Quantitities: The Designation Final Rule	FINAL	07/29/91	11/22/91
Current Draft of Modification of the Hazardous Waste Recycling Regulations	NPRM	08/05/91	10/22/91
Audit Testing Procedures, Amendments to 40 CFR Part 60.533 of Subpart AAA	NPRM	03/29/91	07/15/91
GENERAL SERVICES ADMINISTRATION			
Assignment and Utilization of Space	FINAL	11/20/90	03/01/91

EXHIBIT 9. REGULATIONS WITHDRAWN BY AGENCIES DURING 1991

Agency/Title of regulation	Type	Received	Withdrawn
UNITED STATES DEPARTMENT OF AGRICULTURE			
Collection of 1988 and A 1989 Advance Deficiency Overpayments	FINAL	03/06/91	03/26/91
Notice of Final Determinations—1990 Crop Honey Price Support Program SUPPORT PROGRAM	FINAL	03/19/91	04/25/91
General Crop Insurance Regulations: Forage Seeding Endorsement	NPRM	11/08/91	11/13/91
ALLOCATION OF INSURED ELECTRIC LOANS, REVISION OF REA LOAN DOCUMENT	NPRM	07/22/91	10/10/91
Borrow Eligibility for Different Types of Loans	FINAL	07/22/91	10/10/91
Receiving and Processing Applications, Authorizations, and Appraisals of Single Family Residential	NPRM	01/16/91	02/26/91
Establishment of Wetland Conservation Easements on FmHA Inventory	NPRM	06/18/91	06/27/91
Technical Assistance and Training Grants—7 CFR 1942–J	NPRM	07/23/91	07/26/91
Great Plains Conservation Program	FINAL	05/14/91	05/30/91
Finished Products Inspection	NPRM	05/16/91	06/21/91
Determination of Eligivility for Free Meals by Summer Food Service Program Sponsors	FINAL	01/15/91	03/22/91
DEPATMENT OF COMMERCE			
State of Harvest Disclosure and Seed Filing Rquirements for Exports of Eastern Hardwood Timber	FINAL	06/20/91	08/27/91
MBDA Policy Statement To No Longer Accept Unsolicited Proposals for Funding	FINAL	02/14/91	05/14/91
Sea Turtle Conservation, Shrimp Trawling Requirements	NPRM	06/28/91	08/30/91
Condition Renewal of Permits for the Atlantic Swordfish Fishery	FINAL	08/30/91	09/06/91
Revisions to the Special License Procedures, Elimination of Supplement No. 1 to Part 773	FINAL	04/08/91	04/17/91
Revisions to the Commodity Control List—Inertial Navigation Systems	FINAL	08/13/91	08/23/91
DEPARTMENT OF EDUCATION			
Notice of Proposed Prioity for Fiscal Year 1992—State Vocational In-Service Training	08/13/91	09/11/91	
Notice of Proposed Selection Criteria—Business and Education Standards Program	NPRM	07/31/91	11/07/91
Student Assistance General Provisions, Subpart E (Verification of Student Aid Application)	FINAL	12/14/90	03/28/91
Disposal and Utilization of Surplus Federal Real Property for Educational Purposes	FINAL	08/05/91	09/23/91
Education Department General Administrative Regulations	FINAL	08/21/91	11/13/91
DEPARTMENT OF HEALTH AND HUMAN SERVICES			
National Health Service Corps Loan Repayment	FINAL	05/07/91	05/08/91
National Data Bank for Adverse Informational Data Bank for Adverse Information on Physicians, Dentists, and Other Health Care . . .	NPRM	05/08/91	05/08/91
Cooperative Agreements for Area Health Education Center Programs	FINAL	11/12/91	12/11/91
Area Health Education Centers Special Initiatives	FINAL	11/12/91	12/11/91
Faculty Development in Family Medicine	FINAL	11/20/91	12/09/91
Payment for Durable Medical Equipment and Orthopedic and Prosthetic Devices	FINAL	09/14/90	01/03/91
Contributions for Support—Regulations No. 4, Subpart D	NPRM	08/05/91	11/04/91
What is Not Income—20 CFR Part 416	FINAL	10/18/91	11/18/91
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
Mortgage Approval Reform and Direct Endorsement Expansion	NPRM	04/22/91	05/22/91
RESPA Amendments (Regulation X)	FINAL	01/08/91	02/05/91
Expansion of Operating Loss Loan Program—FR–2892	NPRM	05/06/91	07/08/91
Auction of Section 221 Multifamily Mortgages	NPRM	06/19/91	08/11/91
Fair Housing Initiatives Program—Proposed Amendments	NPRM	11/06/91	12/12/91
Indian Housing—Revised Consolidated Program Regulations	FINAL	09/30/91	11/18/91
DEPARTMENT OF THE INTERIOR			
Program Requirements, Federal Aid in Sport Fish and Federal Aid in Wildlife Restoration	FINAL	04/25/91	07/01/91

EXHIBIT 9. REGULATIONS WITHDRAWN BY AGENCIES DURING 1991—Continued

Agency/Title of regulation	Type	Received	Withdrawn
DEPARTMENT OF JUSTICE			
Aliens Fleeing Coercive Family Planning Policies	FINAL	01/08/91	01/23/91
DEPARTMENT OF LABOR			
Policy on Selection and Referral Techniques for Employment and Training Programs	FINAL	06/03/91	09/17/91
STATE DEPARTMENT			
Amendment to the International Traffic in Arms Regulations	NPRM	04/04/91	07/12/91
Amendment to the International Traffic in Arms Regulations	NPRM	09/11/91	09/18/91
DEPARTMENT OF TRANSPORTATION			
Occupant Crash Protection	NPRM	10/03/91	10/07/91
DEPARTMENT OF THE TREASURY			
Savings Association Membership in the Federal Home Loan Bank System	NPRM	04/22/91	07/03/91
Federal Savings Associations: Operating Subsidiaries and Service Corporations	NPRM	07/08/91	10/24/91
Savings Association Membership in the Federal Home Loan Bank System	NPRM	08/14/91	12/03/91
Bonds for Directors, Officers, Employees, and Agents, Form and Amount of Bonds	NPRM	08/22/91	12/03/91
Insider Transactions and Conflicts of Interest	NPRM	12/10/91	12/12/91
DEPARTMENT OF VETERANS AFFAIRS			
Operation of Child Care Centers at Veterans Administration Facilities	FINAL	04/29/91	07/10/91
Disability or Death from Hospitalization, Medical, or Surgical Treatment	FINAL	11/22/91	12/03/91
ENVIRONMENTAL PROTECTION AGENCY			
Consideration of Information Relating to Air and Water Discharge As Emission of Effluent Data	FINAL	09/19/90	01/04/91
Recovery of Costs for CERCLA Response Actions	NPRM	11/21/90	08/19/91
The Chicago and East St. Louis Sulfur Dioxide Conttrol Strategy	NPRM	08/01/91	08/29/91
The Illinois Sulfur Dioxide SIP for the Peoria Area	NPRM	08/01/91	08/29/91
FEDERAL EMERGENCY MANAGEMENT AGENCY			
Crisis Counseling Assistance and Training	NPRM	01/02/91	04/02/91
Duplication of Benefits	NPRM	06/21/91	09/05/91
Tool Trigger Order Program Guidance	NPRM	12/14/90	03/13/91
Emergency Health and Medical Occupations	FINAL	12/14/90	03/13/91
National Security Emergency Exercise Program	NPRM	12/14/90	03/13/91
NATIONAL ARCHIVES AND RECORDS ADMINISTRATION			
Demonstrations at the National Archives Building	FINAL	05/30/91	07/19/91
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION			
'Privacy Act—NASA Regulations' (14 CFR 1212)	FINAL	11/15/91	12/11/91
OFFICE OF PERSONNEL MANAGEMENT			
Federal Employees Health Benefits Program—Waiving the Partcipation Requirement	FINAL	12/13/90	03/14/91
Cost-of-Living Allowances and Post Differentials	NPRM	01/22/91	02/12/91
Political Activity of Federal Employees	NPRM	02/20/91	03/15/91
Voting Rights Program	FINAL	02/25/91	02/28/91
Proposed Reduction in Force Regulations—Longer Notice	NPRM	06/25/91	06/27/91
Repayment of Student Loans	NPRM	06/27/91	07/18/91
PENSION BENEFIT GUARANTY CORPORATION			
Notice of Determination of Plan Sufficiency and Termination of Sufficient Plans	FINAL	08/01/91	09/16/91
SMALL BUSINESS ADMINISTRATION			
Business Loans, Referral Fees to Third Partice	FINAL	11/01/90	01/14/91
Small Business Investment Companies—Management and Private Capital Requirements	FINAL	03/11/91	03/20/91

EXHIBIT 9. REGULATIONS WITHDRAWN BY AGENCIES DURING 1991—Continued

Agency/Title of regulation	Type	Received	Withdrawn
UNITED STATES INFORMATION AGENCY			
Secondary School Students, Exchange Visitor Program	NPRM	11/18/91	11/18/91

EXHIBIT 10. REGULATIONS SUSPENDED DURING 1991

Agency/Title of regulation	Type	Received	Reviewed
UNITED STATES DEPARTMENT OF AGRICULTURE			
Rural Emergency Assistance Loans—1942-B	NPRM	07/22/91	10/03/91
User Fees—Agricultural Quarantine and Inspection Services, Phtyosanitary Certificates	FINAL	11/25/91	12/06/91
Recordkeeping Requirements for Certified Applicators of Federally Restricted Use Pesticides	FINAL	09/23/91	11/22/91
Preventing Cross-Contamination of Meat Products Heat Processed in 130 Degrees or Higher	FINAL	01/10/91	03/21/91
DEPARTMENT OF COMMERCE			
Proposed Olympic Coast National Marine Sanctuary	NPRM	12/19/90	01/28/91
Summer Flounder Fishery	NPRM	01/10/91	01/25/91
DEPARTMENT OF EDUCATION			
The State Vocational Rehabilitation Services	NPRM	08/24/90	01/03/91
Student Assistance General Provisions—Subpart I Immigration Status Confirmation	NPRM	11/20/90	03/07/91
Institutional Eligibility Under the Higher Education Act	NPRM	02/19/91	06/05/91
Pell Grant Program—Final Regulations	FINAL	03/05/91	05/30/91
Guaranteed Student Loan Programs Default Reduction	FINAL	04/04/91	07/09/91
Student Assistance General Provisions Subpart E	FINAL	04/10/91	09/06/91
Education Department General Administrative Regulations	NPRM	09/17/90	01/03/91
State-Administered Programs (Accountability Initiative)	NPRM	11/02/90	02/08/91
General Education Provisions Act—Enforcement	NPRM	05/16/91	07/26/91
DEPARTMENT OF ENERGY			
Draft Energy Conservation Interim Voluntary Performance—Non-Federal Residential Buildings	NPRM	06/20/91	10/29/91
Criteria and Procedures for DOE Contractor Employee Protection Program	FINAL	11/02/90	01/09/91
Workplace Substance Abuse Programs at the DOE Facilities	NPRM	01/14/91	05/28/91
DEPARTMENT OF HEALTH AND HUMAN SERVICES			
Senior Biomedical Research Service	Final	08/05/91	11/08/91
Expanded Availablilty of Investigational New Drugs Through a Parallel Track Mechanism	Final	08/12/91	10/23/91
Proposal To Establish Procedures for the Safe Processing of Smoked Fish	NPRM	07/02/91	10/25/91
Investigational New Drug, Antibiotic and Biological Application, Clinical Hold and Termination	Final	08/12/91	10/23/91
Medicare and Medicaid Programs: Changes to Long-Term Care Facility Survey Process	NPRM	09/14/90	01/03/91
HSQ-179-P—Enforcement Procedures for Laboratories	NPRM	11/05/90	02/08/91
Survey and Enforcement Requirements for Home Health Agencies	NPRM	01/30/91	06/06/91
'Confined to the Home' Requirement for Home Health Service—Medicare	NPRM	02/20/91	06/06/91
Survey and Certification of Skilled Nursing Facilities and Nursing Facilities	NPRM	06/04/91	09/05/91
Cost Report Settlement Adjustment Factors—Cost Limits for Skilled Nursing Facilities	NPRM	07/01/91	11/07/91

EXHIBIT 10. REGULATIONS SUSPENDED DURING 1991—Continued

Agency/Title of regulation	Type	Received	Reviewed
DEPARTMENT OF HEALTH AND HUMAN SERVICES—Continued			
Medicare: Self-Implementing Coverage and Payments Provisions	FINAL	07/26/91	11/07/91
Preadmission Screening and Annual Resident Review	FINAL	08/05/91	11/07/91
Requirements for Coverage of Seats	NPRM	08/05/91	11/07/91
Resident Assessment in Long-Term Care Facilities	NPRM	08/16/91	12/06/91
Resources and Exclusions, Definition of Resources	NPRM	09/18/90	01/17/91
Representation of Claimants for Benefits Under Title II or Title XVI	NPRM	01/28/91	04/16/91
Residence and Citizenship, 20 CFR PART 416	FINAL	02/26/91	06/06/91
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
Government Debarment and Suspension and Governmentwide Drug Free Workplace	NPRM	08/22/91	11/08/91
Manufactured Home Construction and Safety Standards	NPRM	10/11/90	01/07/91
Mortgagee Approval Reform and Direct Endorsement Expansion	NPRM	12/12/90	03/07/91
Expansion of Operating Loss Loan Program	NPRM	04/02/91	07/12/91
Manufactured Home Procedural and Enforcement Regulations	NPRM	04/26/91	10/03/91
Changes to the Minimum Property Standards	FINAL	07/16/91	10/25/91
DEPARTMENT OF THE INTERIOR			
Coal Management—General, Exploration Licenses, Competitive Leasing	NPRM	11/23/90	02/25/91
Onshore Oil and Gas Order No. 8, Well Completions/Workovers/Abandonments	NPRM	11/23/90	02/25/91
Mining Claims Under the General Mining Laws, Surface Management	NPRM	12/10/90	03/13/91
Increase the Amount of Surety Bond Coverage of OCS Lessees	FINAL	07/25/91	10/25/91
DEPARTMENT OF JUSTICE			
Nonimmigrant Classes—Treaty Aliens, E Classification	NPRM	05/16/91	08/15/91
Nonimmigrant Classes—Students, F & M Classifications	FINAL	09/18/91	09/30/91
DEPARTMENT OF LABOR			
Attestations by Employers for Off-Campus Work Authorizations for Students	NPRM	07/01/91	09/05/91
Occupational Exposure to 2-Methoxyethanol, 2-Ethoxyethanol and Their Acetates	NPRM	05/06/91	09/06/91
STATE DEPARTMENT			
Amendments to the International Traffic in Arms Regulations, Category XII.	NPRM	05/03/91	08/12/91
Amendments to the International Traffic in Arms Regulations, Category VIII	NPRM	05/03/91	08/12/91
DEPARTMENT OF TRANSPORTATION			
Emergency Position Inidicating Radio Beacons (EPIRB'S) on Uninspected Vessels	FINAL	08/29/91	11/21/91
High Density Traffic Airports Slot Allocation and Transfer Methods	NPRM	04/01/91	08/01/91
Motor Vehicle Theft Prevention: Selection of Lines Subject to Theft Prevention Program, NPRM	09/11/90	01/11/91	
Capital Leases, Final Rule	FINAL	02/26/91	05/28/91
Pre-Award and Post-Delivery Audits of Rolling Stock Purchases	FINAL	04/03/91	07/12/91
DEPARTMENT OF VETERANS AFFAIRS			
Loan Guaranty: Credit Underwriting Standards and Procedures—Specially Adapted Housing	FINAL	09/21/90	01/08/91
ENVIRONMENTAL PROTECTION AGENCY			
Notice of Draft General Permit for Storm Water Discharges—Industrial Activity	NPRM	11/28/90	04/05/91
State Hazardous Waste Enforcement and Compliance Monitoring Requirements	NPRM	10/24/90	02/05/91
Phase One Revisions to the Oil Pollution Prevention	NPRM	12/21/90	02/25/91
Hazardous Waste Management System: Land Disposal Restriction "No Migration Variance"	NPRM	02/22/91	09/06/91
Repotable Quantities—the Designation Final Rule	FINAL	03/26/91	05/06/91
Reportable Quantity (RQ) Adjustment Final Rule	FINAL	03/26/91	05/06/91
National Oil and Hazardous Substances Pollution Contingency Subpart K Federal Facilities	NPRM	05/24/91	08/28/91

EXHIBIT 10. REGULATIONS SUSPENDED DURING 1991—Continued

Agency/Title of regulation	Type	Received	Reviewed
ENVIRONMENTAL PROTECTION AGENCY—Continued			
Ground-Water Protection Standards for Inactive Uranium Tailings Sites	FINAL	05/13/91	09/06/91
Pesticide Status of Products Affecting Soil Bacteria Responsible for Loss of Soil Nitrogen	FINAL	02/04/91	05/10/91
Proposal to Delete Phosphoric Acid and Add a Phosphates Category to Section 313A List	NPRM	05/07/91	08/30/91
Worker Protection Standards, 40 CFR Part 170	NPRM	06/12/91	10/01/91
Worker Protection Standards, 40 CFR Parts 156 and 170	FINAL	06/12/91	10/01/91

EXHIBIT 11. TYPES OF ACTIONS TAKEN ON AGENCY RULES—PERCENTAGE COMPARISON 1981–1991

Action taken	Percentage										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Found consistent without change	87.3	84.1	82.3	78.0	70.7	68.3	70.5	70.9	73.8	71.8	63.2
Found consistent with change	4.9	10.3	12.7	15.1	23.1	22.9	23.7	21.9	19.4	19.3	27.2
Withdrawn by agency	1.8	1.2	1.6	2.4	3.1	2.8	2.5	2.4	2.7	2.5	2.8
Returned for reconsideration	1.6	2.1	1.3	2.7	1.5	1.4	0.4	1.2	1.3	1.0	1.1
Suspended	NA	NA	NA	NA	NA	NA	NA	NA	0.7	2.7	2.7
Sent improperly or exempt	3.1	0.9	0.0	0.0	0.3	0.2	0.2	0.1	0.4	0.2	0.1
Emergency, statutory or judicial deadline	1.4	1.4	2.0	1.7	1.2	4.3	2.5	3.5	1.6	2.5	3.0
Total*	100.1	100	99.9	99.9	99.9	99.9	99.8	100	99.9	100	100.1
	Percentage change										
	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87	1987–88	1988–89	1989–90	1990–91	1981–91
Found consistent without change	-3.2	-1.8	-4.3	-7.3	-2.4	2.2	0.4	2.9	-2	-8.6	-24.1
Found consistent with change	5.4	2.4	2.4	8.0	-0.2	0.8	-1.8	-2.5	-0.1	7.9	22.3
Withdrawn by agency	-0.6	0.4	0.8	0.7	-0.3	-0.3	-0.1	0.3	-0.2	0.3	1.0
Returned for reconsideration	0.5	-0.8	1.4	-1.2	-0.1	-1	0.8	0.1	-0.3	0.1	-0.5
Suspended	NA	NA	NA	NA	NA	NA	NA	NA	2	0	NA
Sent improperly or exempt	-2.2	-0.9	0.0	0.3	-0.1	0	-0.1	0.3	-0.2	-0.1	-3.0
Emergency, statutory or judicial deadline	0.0	0.6	-0.3	-0.5	3.1	-1.8	1	-1.9	0.9	0.5	1.6

*Percentages may not add to 100.0 percent due to rounding. NA = Not Applicable.

EXHIBIT 12. AVERAGE REVIEW TIME OF RULES UNDER EXECUTIVE ORDER 12291
(in days)

Agency	1981–91			1991			1990			1989		
	Major	Non-major	All	Major	Non-major	All	Major	Non-major	All	Major	Non-major	All
USDA	22	16	17	23	23	23	65	27	29	31	18	19
DOC	46	15	16	NA	15	15	NA	16	16	6	15	15
DOD	14	29	29	28	22	22	NA	52	52	NA	92	92
ED	42	23	23	NA	43	43	NA	39	39	NA	33	33
DOE	49	20	22	110	35	39	NA	28	28	52	98	92
HHS	36	31	31	19	36	34	50	39	40	46	36	36
HUD	35	24	25	88	42	42	57	34	34	83	29	31
DOI	11	18	18	26	33	33	3	23	23	3	30	29
DOJ	11	12	12	19	22	22	NA	11	11	1	12	12
DOL	102	41	48	49	25	27	75	38	46	179	71	86
STATE	28	18	18	NA	30	30	NA	14	14	NA	11	11
DOT	36	22	23	24	21	21	20	19	19	71	23	24
TREAS	51	20	21	8	41	41	204	28	31	NA	28	28
VA	NA	22	22	NA	24	24	NA	20	20	NA	17	17
EPA	72	28	29	99	44	51	65	36	40	104	49	52
Other agencies	43	20	21	30	25	25	13	24	24	28	25	25
All government	41	22	23	39	29	29	56	27	28	59	28	29
	1988			1987			1986			1985		
USDA	13	19	19	19	19	19	13	18	18	15	19	19
DOC	144	35	36	NA	19	19	127	15	15	NA	12	12
DOD	NA	22	22	4	12	11	30	28	28	NA	30	30
ED	NA	32	32	NA	15	15	14	13	13	NA	16	16
DOE	125	42	47	NA	24	24	34	15	17	30	7	8
HHS	48	32	33	162	36	37	19	37	36	74	46	47
HUD	21	31	31	35	21	22	44	32	33	NA	27	27
DOI	32	22	23	4	20	19	7	11	11	5	19	19
DOJ	NA	17	17	2	6	6	NA	8	8	NA	9	9
DOL	133	84	87	132	46	54	76	47	49	173	55	61
STATE	NA	20	20	NA	12	12	NA	5	5	NA	16	16
DOT	58	41	41	21	32	31	32	19	19	80	34	36
TREAS	NA	17	17	NA	16	16	NA	7	7	16	13	13
VA	NA	30	30	BA	38	38	NA	44	44	NA	23	23
EPA	51	48	49	49	35	37	41	41	41	78	33	35
Other agencies	66	28	28	42	26	26	74	24	25	105	23	25
All government	44	32	32	29	24	24	29	24	24	64	26	27
	1984			1983			1982			1981		
USDA	11	19	19	15	13	13	17	10	10	22	8	8
DOC	316	14	17	5	11	11	22	9	10	8	8	8
DOD	NA	30	30	NA	16	16	NA	6	6	NA	9	9
ED	39	18	19	NA	11	11	32	12	13	NA	8	8
DOE	77	9	12	45	7	9	26	6	7	7	7	7
HHS	3	33	33	35	18	19	21	10	11	8	7	7
HUD	10	18	17	12	15	15	NA	11	11	NA	14	14
DOI	7	17	17	12	17	17	13	10	10	6	8	8
DOJ	NA	10	10	BA	14	14	NA	7	·7	NA	6	6
DOL	NA	43	43	121	18	29	37	10	12	26	6	9
STATE	NA	5	5	28	10	16	NA	7	7	NA	9	9
DOT	42	20	21	24	15	15	37	12	12	8	8	8
TREAS	17	18	18	NA	12	12	60	13	14	1	8	8
VA	NA	15	15	NA	15	15	NA	11	11	NA	10	10
EPA	58	30	31	14	22	22	88	17	19	12	9	9
Other agencies	26	20	20	35	14	14	40	13	14	5	10	10
All government	31	22	22	28	15	16	28	11	12	13	9	9

EXHIBIT 13. AGENCY RULES EXEMPTED FROM REVIEW PROCEDURES

DEPARTMENT OF AGRICULTURE

Food and Nutrition Service—Special Nutrition program notices that revise reimbursement rates and eligibility criteria for the School Lunch, Child Care Food, and other nutrition programs.

Food and Nutrition Service—Food Stamp program notices that set eligibility criteria and deduction policies.

Agricultural Marketing Service—Regulations that establish voluntary standards for grading the quality of food.

Animal and Plant Health Inspection Service—Rules and notices concerning quarantine actions and related measures to prevent the spread of animal and plant pests and diseases.

Animal and Plant Health Inspection Service—Rules affirming actions taken on an emergency basis if no adverse comments were received.

Rural Electrification Administration—Rules concerning standards and specifications for construction and materials.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration—Certain time-sensitive preseason and inseason Fishery Management Plan regulatory actions that set restrictions on fishing seasons, catch size, and fishing gear.

DEPARTMENT OF ENERGY

Power Marketing Administrations—Regulations issued by various power administrations relating to the sale of electrical power that they produce or market.

DEPARTMENT OF THE INTERIOR

Office of Surface Mining—Actions to approve, or conditionally approve, State regulatory mining actions or amendments to such actions.

Office of Surface Mining—Approval of State mining reclamation plans or amendments.

Office of Surface Mining—Cooperative agreements between OSM and States.

United States Fish and Wildlife Service—Certain parts of the annual migratory bird hunting regulations.

DEPARTMENT OF TRANSPORTATION

All Offices of DOT—Amendments that postpone the compliance dates of regulations already in effect.

Coast Guard—Regatta regulations, safety zone regulations, and security zone regulations.

Coast Guard—Anchorage, drawbridge operations, and inland waterways navigation regulations.

Coast Guard—Regulations specifying amount of separation required between cargoes containing incompatible chemicals.

Federal Aviation Administration—Standard instrument approach procedure regulations, en route altitude regulations, routine air space actions, and airworthiness directives.

National Highway Traffic Safety Administration—Federal Motor Vehicle Safety Standard 109 table of tire sizes.

DEPARTMENT OF THE TREASURY

Internal Revenue Service, Bureau of Alcohol, Tobacco, and Firearms, and Customs Service—Revenue rulings and procedures, Customs decisions, legal determinations, and other similar ruling documents. Major legislative regulations are covered fully.

ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticides and Toxic Substances—Actions regarding pesticide tolerances, temporary tolerances, tolerance exemptions, and food additives regulations, except those that make an existing tolerance more stringent.

Office of Pesticides and Toxic Substances—Unconditional approvals of TSCA section 5 test marketing exemptions, and of experimental use permits under FIFRA.

Office of Pesticides and Toxic Substances—Decision documents defining and establishing registration standards; decision documents and termination decisions for the RPAR process; and data call-in requests made under section 3(c)(2)(B) of FIFRA.

Office of Air, Noise, and Radiation—Rules that unconditionally approve revisions to State Implementation Plans.

Office of Air, Noise, and Radiation—Unconditional approvals of equivalent methods for ambient air quality monitoring and of NSPS, NESHAPS, and PSD delegations to States; approvals of carbon monoxide and nitrogen oxide waivers; area designations of air quality planning purposes; and deletions from the NSPS source categories list.

Office of Water—Unconditional approvals of State Water Standards.

Office of Water—Unconditional approval of State underground injection control programs; delegations of NPDES authority to States; deletions from the 307(a) list of toxic pollutants; and suspensions of Toxic Testing Requirements under NPDES.

Office of Solid Waste and Emergency Response—Unconditional approvals of State authorization under RCRA of State solid waste management plans and of hazardous waste delisting petitions under RCRA.

PENSION BENEFIT GUARANTY CORPORATION

Interest Rates—Changes in interest rates on late premium payments and delinquent employer liability payments under sections 6601 and 6621 of the Internal Revenue Code as amended by the Tax Equity and Fiscal Responsibility Act of 1982.

GOVERNMENTWIDE

Office of Federal Procurement Policy—All regulations, except those concerning acquisition of automatic data processing and telecommunications equipment; those implementing and supplementing Federal Acquisition Regulation subparts 15.6 (Source Selection) and 32.5 (Progress Payments Based on Costs); and those implementing and supplementing the Competition in Contracting Act of 1984 (Public Law 98–3691), the Defense Procurement Reform Act of 1984 (Title XII, Public Law 98–525), and the Small Business and Federal Procurement Competition Enforcement Act of 1984 (Public Law 98–577).

EXHIBIT 14

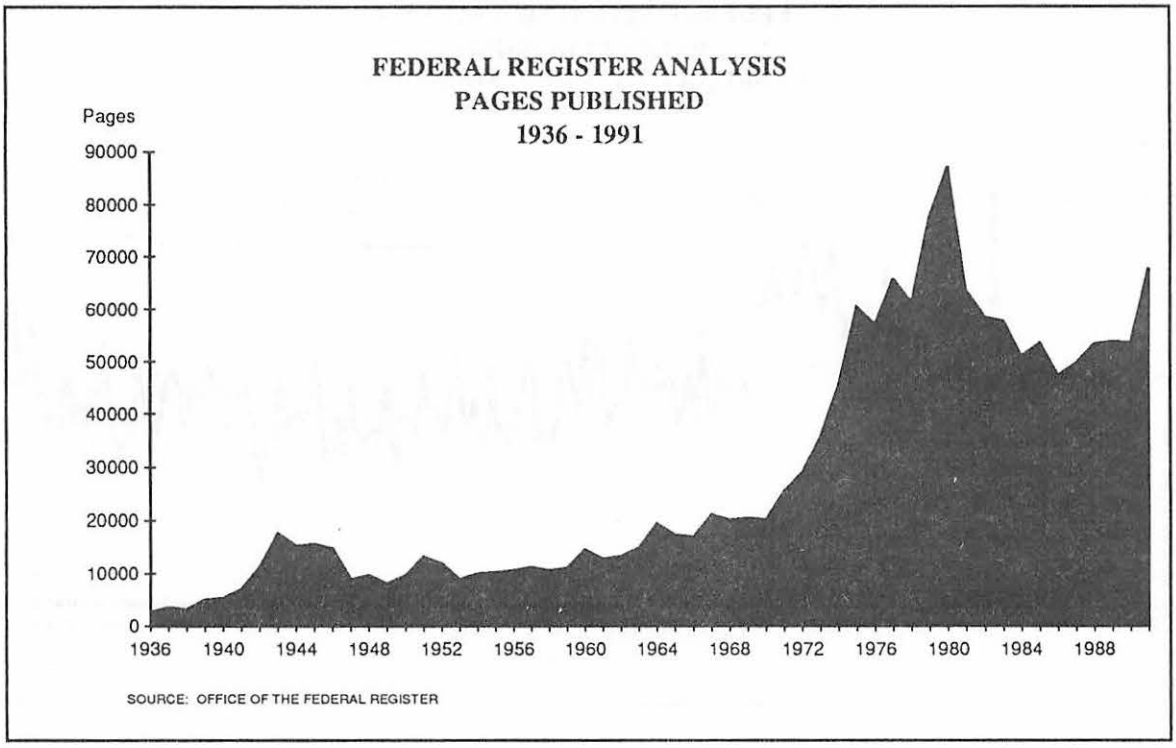

FEDERAL REGISTER ANALYSIS
PAGES PUBLISHED
1936 - 1991
Pages
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
1936
1940
1944
1948
1952
1956
1960
1964
1968
1972
1976
1980
1984
1988
SOURCE: OFFICE OF THE FEDERAL REGISTER

EXHIBIT 15

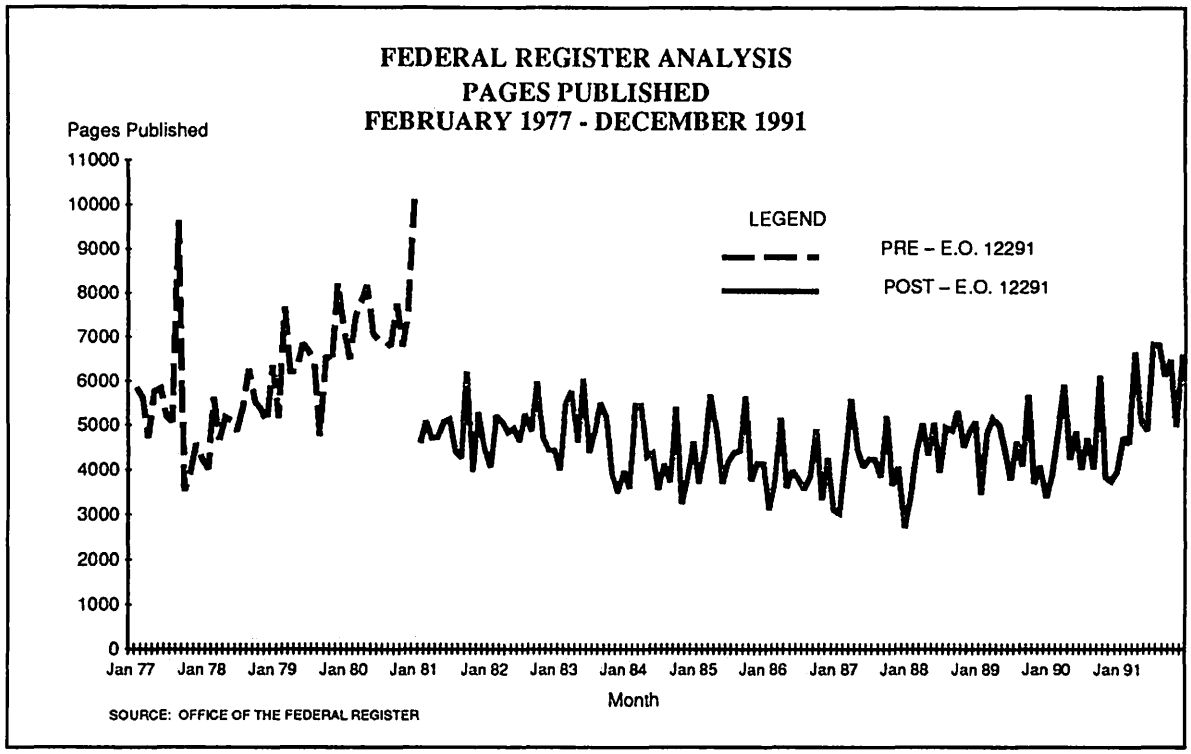


EXHIBIT 16

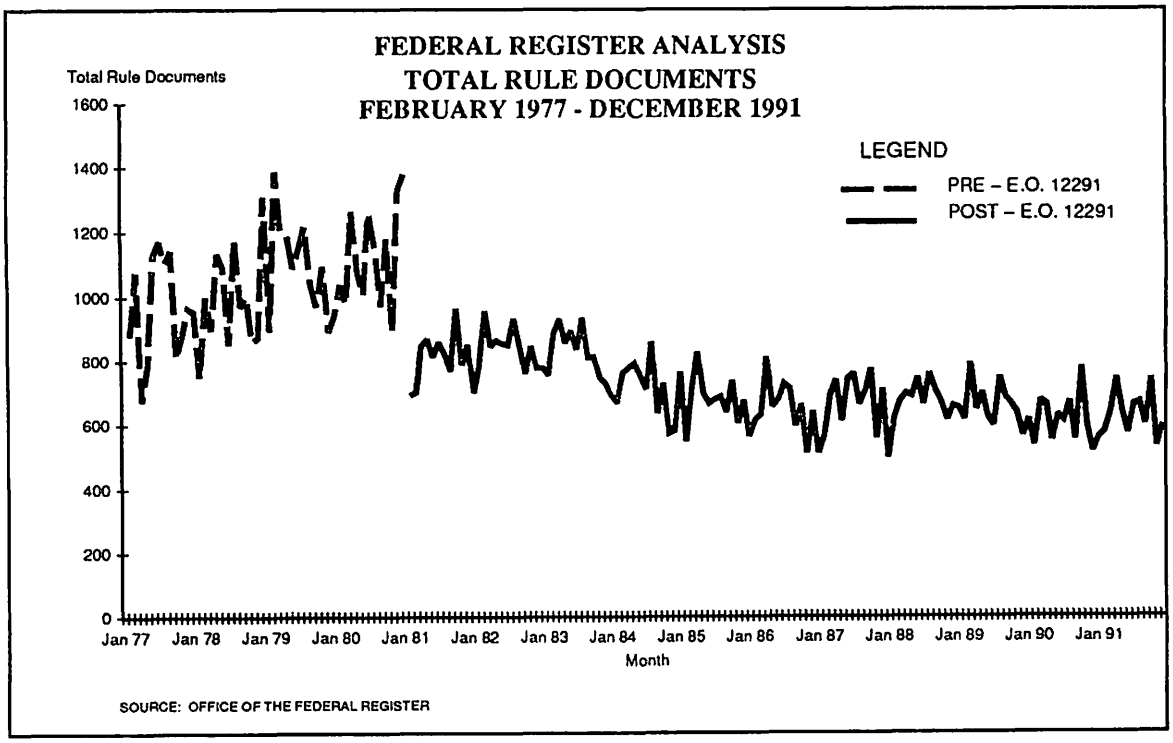


EXHIBIT 17. COMPARISON OF PAGES AND DOCUMENTS PUBLISHED IN THE *FEDERAL REGISTER* 1980–1991

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total pages published	87,012	63,554	58,494	57,704	50,998	53,480	47,418	49,654	53,376	53,841	53,620	67,716
Average pages per month	7,251	5,296	4,875	4,809	4,250	4,457	3,952	4,138	4,448	4,487	4,468	5,643
Percentage change year to year.	NA	-27.0	-8.0	-1.4	-11.6	4.9	-11.3	4.7	7.5	0.9	-0.4	26.3
Percentage change from 1980....	NA	-27.0	-32.8	-33.7	-41.4	-38.5	-45.5	-42.9	-38.7	-38.1	-38.4	-22.2
Proposed rules documents	5,347	3,862	3,729	3,906	3,350	3,381	3,185	3,423	3,277	3,193	3,041	3,096
Average documents per month ..	446	322	311	326	279	282	265	285	273	266	253	258
Percentage change year to year.	NA	-27.8	-3.4	4.7	-14.2	0.9	-5.8	7.5	-4.3	-2.6	-4.8	1.8
Percentage change from 1980....	NA	-27.8	-30.3	-26.9	-37.3	-36.8	-40.4	-36.0	-38.7	-40.3	-43.1	-42.1
Final rules documents	7,745	6,401	6,288	6,049	5,155	4,843	4,589	4,581	4,697	4,711	4,334	4,413
Average documents per month ..	645	533	524	504	430	404	382	382	391	393	361	368
Percentage change year to year.	NA	-17.4	-1.8	-3.8	-14.8	-6.1	-5.2	-0.2	2.5	0.3	-8.0	1.8
Percentage change from 1980....	NA	-17.4	-18.8	-21.9	-33.4	-37.5	-40.7	-40.9	-39.4	-39.2	-44.0	-43.0

EXHIBIT 18. ANALYSIS OF FINAL RULE DOCUMENTS PUBLISHED IN THE *FEDERAL REGISTER* 1982–1991

	Final rules									
	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982
New requirement	388	313	367	395	451	366	358	260	248	294
Revision to existing requirements	1,126	1,038	1,175	1,250	1,241	1,267	1,255	1,350	1,430	1,530
Elimination of existing requirements	68	50	51	74	85	142	177	162	217	299
All other	2,831	2,933	3,118	2,978	2,804	2,814	3,053	3,383	4,154	4,165
Total	4,413	4,334	4,711	4,697	4,581	4,589	4,843	5,155	6,049	6,288
	Percentage of total									
	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982
New requirement	8.8	7.2	7.8	8.4	9.8	7.6	7.4	5.0	4.1	4.7
Revision to existing requirements	25.5	24.0	24.9	26.6	27.1	24.2	25.9	26.2	23.6	24.3
Elimination of existing requirements	1.5	1.2	1.1	1.6	1.9	3.3	3.7	3.1	3.6	4.8
All other	64.2	67.7	66.2	63.4	61.2	64.9	63.0	65.6	68.7	66.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

EXHIBIT 19. FINAL RULE DOCUMENTS BY AGENCY PUBLISHED IN THE *FEDERAL REGISTER* 1982–1991

Agency	Number of documents										Percentage of documents									
	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982
USDA .	504	535	604	625	556	554	611	684	638	674	10.4	11.2	11.7	12.2	11.3	11.1	11.8	12.9	10.5	10.6
DOC....	315	289	260	264	285	292	254	202	213	205	6.5	6.1	5.0	5.1	5.8	5.9	4.9	3.8	3.5	3.2
DOD....	213	120	155	163	172	198	113	102	109	111	4.4	2.5	3.0	3.2	3.5	4.0	2.2	1.9	1.8	1.8
ED.....	25	30	69	48	68	51	40	35	25	36	0.5	0.6	1.3	0.9	1.4	1.0	0.8	0.7	0.4	0.6
DOE....	54	37	22	23	15	21	14	27	37	52	1.1	0.8	0.4	0.4	0.3	0.4	0.3	0.5	0.6	0.8
HHS....	251	329	343	337	380	405	450	422	573	561	5.2	6.9	6.7	6.6	7.7	8.1	8.7	8.0	9.5	8.9
HUD ...	86	55	80	103	89	95	96	141	128	124	1.8	1.2	1.6	2.0	1.8	1.9	1.9	2.7	2.1	2.0
DOI.....	290	240	218	254	246	240	258	320	461	477	6.0	5.0	4.2	4.9	5.0	4.8	5.0	6.0	7.6	7.5
DOJ	116	89	105	100	122	116	108	113	159	102	2.4	1.9	2.0	1.9	2.5	2.3	2.1	2.1	2.6	1.6
DOL....	56	73	83	75	56	55	68	56	63	63	1.2	1.5	1.6	1.5	1.1	1.1	1.3	1.1	1.0	1.0
STATE	27	13	17	20	18	12	7	7	8	15	0.6	0.3	0.3	0.4	0.4	0.2	0.1	0.1	0.1	0.2
DOT....	1,056	1,100	1,076	978	859	923	903	748	865	908	21.8	23.1	20.9	19.0	17.4	18.5	17.4	14.1	14.3	14.3
TREAS	190	184	193	204	184	236	219	247	244	180	3.9	3.9	3.7	4.0	3.7	4.7	4.2	4.7	4.0	2.8
VA.....	57	66	67	69	49	51	49	54	53	54	1.2	1.4	1.3	1.3	1.0	1.0	0.9	1.0	0.9	0.9
EPA.....	328	416	539	441	438	487	518	624	605	805	6.8	8.7	10.5	8.6	8.9	9.8	10.0	11.8	10.0	12.7
EEOC .	5	7	12	5	18	8	13	14	16	7	0.1	0.1	0.2	0.1	0.4	0.2	0.3	0.3	0.3	0.1
FEMA .	76	98	95	106	66	71	84	91	261	398	1.6	2.1	1.8	2.1	1.3	1.4	1.6	1.7	4.3	6.3
GSA	107	79	98	77	83	74	107	74	95	80	2.2	1.7	1.9	1.5	1.7	1.5	2.1	1.4	1.6	1.3
NASA..	74	38	50	39	33	36	28	15	20	18	1.5	0.8	1.0	0.8	0.7	0.7	0.5	0.3	0.3	0.3
OMB ...	0	2	0	1	2	0	0	1	2	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPM ...	58	46	34	58	74	44	39	38	43	25	1.2	1.0	0.7	1.1	1.5	0.9	0.8	0.7	0.7	0.4
SBA.....	37	36	43	28	14	34	26	39	26	26	0.8	0.8	0.8	0.5	0.3	0.7	0.5	0.7	0.4	0.4
Other ..	260	249	259	273	257	275	241	261	335	337	5.4	5.2	5.0	5.3	5.2	5.5	4.7	4.9	5.5	5.3
CFTC ..	14	18	23	20	25	19	32	38	51	19	0.3	0.4	0.4	0.4	0.5	0.4	0.6	0.7	0.8	0.3
CPSC ..	13	6	4	10	8	9	17	30	22	25	0.3	0.1	0.1	0.2	0.2	0.2	0.3	0.6	0.4	0.4
FCC	445	412	420	437	444	306	400	405	359	393	9.2	8.6	8.1	8.5	9.0	6.1	7.7	7.7	5.9	6.2
FDIC...	11	18	22	13	16	16	14	20	24	17	0.2	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3
FERC..	3	30	40	92	95	82	127	139	156	120	0.1	0.6	0.8	1.8	1.9	1.6	2.5	2.6	2.6	1.9
FHLBB	0	0	28	37	30	29	39	32	41	53	0.0	0.0	0.5	0.7	0.6	0.6	0.8	0.6	0.7	0.8
FMC....	20	13	10	14	17	6	9	43	19	26	0.4	0.3	0.2	0.3	0.3	0.1	0.2	0.8	0.3	0.4
FRS.....	46	41	33	47	32	28	40	37	66	75	0.9	0.9	0.6	0.9	0.6	0.6	0.8	0.7	1.1	1.2
FTC.....	11	24	38	58	49	77	84	82	116	80	0.2	0.5	0.7	1.1	1.0	1.5	1.6	1.6	1.9	1.3
ICC	34	20	35	35	48	51	59	53	103	127	0.7	0.4	0.7	0.7	1.0	1.0	1.1	1.0	1.7	2.0
NRC....	41	31	48	42	47	36	49	42	55	51	0.8	0.7	0.9	0.8	1.0	0.7	0.9	0.8	0.9	0.8
SEC.....	29	21	34	45	40	54	66	54	65	84	0.6	0.4	0.7	0.9	0.8	1.1	1.3	1.0	1.1	1.3
Total*..	4,852	4,765	5,157	5,141	4,935	4,991	5,182	5,290	6,056	6,329	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Totals include final rules documents issued jointly by two or more agencies.