

CALIFORNIA'S NEW OPPORTUNITY TO IMPROVE REGULATION

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Executive Summary

Governor Gray Davis of California recently called for the creation of an Office of Economic Development within the California Public Utilities Commission. This office would be required to review all major proceedings “to determine their benefit to the economy, infrastructure and job creation.” The governor’s proposal presents an important opportunity to bring rational economic analysis into the world of public utilities regulation.

This paper offers a framework for using cost-benefit analysis to better achieve the goals of public policy. We take the view that regulation is neither inherently bad nor good. It is a matter of common sense that the merits of proposed rules should be judged on an individual basis, comparing expected benefits to expected costs. Indeed, in an era in which government agencies, including the Public Utilities Commission, have considerable leeway to impose very substantial costs in the form of higher consumer prices and lower output, the careful assessment of likely benefits and costs is a critical task for government.

Such cost-benefit analysis can be quite complex. Building on the work of noted economists, we identify ten principles that could go a long way to assuring that regulation serves the public interest.

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I. INTRODUCTION

Governments worldwide are under increasing pressure to justify regulation using solid economic criteria.¹ The most common approach to ensuring that regulation meets its objective in the least costly manner, or that, on balance, it improves economic welfare, is to create an oversight mechanism within the government itself.² To that end, Governor Gray Davis of California recently proposed the creation of a new oversight body for the Public Utilities Commission:

I will ask the Public Utilities Commission to create an Office of Economic Development. It will review all major proceedings before the PUC to determine their benefit to the economy, infrastructure and job creation.³

¹ The increased scrutiny applies to a wide range of issues. Thus, some 40 prominent economists made the case regarding EPA regulation. The group, which includes 4 Nobel laureates, 7 former chairmen of the President's Council of Economic Advisers, and 2 former directors of the White House Office of Management and Budget, argues that both the costs and benefits resulting from regulation must be balanced to maximize social welfare. See *American Trucking Associations, Inc., et al. v. Carol M. Browner*, Administrator of the Environmental Protection Agency, *et al.*, No. 99-1426, Kenneth J. Arrow, *et al.*, Brief *Amici Curiae*, Jul. 21, 2000. Available at <http://www.aei.brookings.org/publications/abstract.php?pid=81> (last visited on February 24, 2003).

² See, e.g., Robert W. Hahn, "State and Federal Regulatory Reform: A Comparative Analysis," *Journal of Legal Studies*, v. 29, no. 2, 2000, pp. 873-912; see also Organization for Economic Cooperation and Development, "The OECD Report on Regulatory Reform," 1997, pp. 29-30, available at <http://www.oecd.org/pdf/M00007000/M00007872.pdf> (last visited on February 19, 2003).

³ Governor Gray Davis, "2003 State of the State Address, Assembly Chambers, State Capitol," January 8, 2003, available at http://www.governor.ca.gov/state/govsite/gov_htmldisplay.jsp?BV_SessionID=@@@@1353446789.1045599694@@@@&BV_EngineID=iadcghghiljbemgcfkmchchi.0&sFilePath=%2fgovsite%2fselected_speeches%2f20030108_speech_state_of_the_state.html&sTitle=2003&sSubCat=null&sCatTitle=Speeches&iOID (last visited on February 19, 2003).

This proposal is intriguing for several reasons. First, California is a trendsetter in regulatory policy—notably in environmental regulation. California has led the way, for example, in initiatives to reduce vehicle emissions. Second, California has been the source of controversy related to the pioneering partial deregulation and subsequent re-regulation of electricity markets after the catastrophic run-up of prices in 2001. Third, Governor Davis’s proposal appears to be one of just a handful of efforts in the states to create a formal review procedure within the agency that regulates public utilities.⁴ In so doing, he is acknowledging the importance of getting regulation “right” for such critical areas of the economy as telecommunications, energy, and transportation.⁵

This paper offers suggestions for developing principles to guide Governor Davis’s initiative.⁶ Section II reviews recent trends in regulation. Section III examines the rationale for regulating. In Section IV, we describe several methods for evaluating the economic impact of regulations. Section V presents a short list of principles to guide regulators.

II. TRENDS IN REGULATION AND REGULATORY REFORM

The past three decades have witnessed two broad, seemingly inconsistent trends in regulation. First, there has been an unparalleled rise in new regulation related to health, safety, and the environment. But there has also been substantial economic deregulation of industries ranging from transportation to finance to energy to telecommunications.

⁴ New Jersey and Pennsylvania have implemented similar regulatory review functions within their public utilities commission. Pennsylvania’s commission is called the Independent Regulatory Review Commission; for more information, see Independent Regulatory Review Commission website, available at http://sites.state.pa.us/PA_Exec/IRRC/irrc.htm (last visited on February 27, 2003). New Jersey has an Office of the Economist within its PUC; for more information, see New Jersey Board of Public Utilities website, available at <http://www.bpu.state.nj.us/> (last visited on February 26, 2003).

⁵ The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, and transportation companies.

⁶ We draw heavily from earlier efforts of one of the authors, Robert W. Hahn. He played a prominent role in related work, including Kenneth J. Arrow, *et al.*, “Benefit-Cost Analysis in Environmental, Health, and Safety Regulation,” American Enterprise Institute and The Brookings Institution, Washington, D.C., 1996, available at <http://www.aei.brookings.org/publications/abstract.php?pid=53> (last visited on February 24, 2003); Robert W. Hahn and John Hird, “The Costs and Benefits of Regulation: Review and Synthesis,” *Yale Journal on Regulation*, v. 8, n. 1, 1991, pp. 233-278; and Robert W. Crandall, *et al.*, “An Agenda for Federal Regulatory Reform,” American Enterprise Institute and The Brookings Institution, Washington, D.C., 1997.

The increased interest in regulatory reform can be explained in part by a growing understanding of the impact of government intervention.⁷ The idea that certain sectors must be regulated because they constitute “natural” monopolies vital to social or strategic interests is no longer accepted uncritically.⁸ Scholars now recognize it is important to compare regulation with the realistic alternatives, acknowledging the limited capacity of regulation to mimic the outcomes of perfect competition.⁹

By the same token, the costs that regulations can impose on the economy are better understood. Indeed, scholars now appreciate that regulators are subject to political influences, and that regulation is rarely implemented with the sole purpose of improving economic efficiency. In many cases regulation has not only failed to meet its goal of improving economic efficiency (and thus economic welfare), but has actually had the opposite effect.¹⁰ The problematic nature of the process is driving the trend toward regulatory reform. Moreover, globalization is accelerating reform as business reacts to competitive pressures to reduce production costs and as policymakers grow more aware that burdensome regulation can drive jobs (and tax bases) to less demanding climes.

Not all regulation is on the decline, however. Citizens in many countries are expressing a desire for more regulation in areas such as environmental protection, public health, safety standards and privacy.¹¹ Rising incomes partly explain this increased interest: as consumers become wealthier, they demand “amenities” such as cleaner air and water, safer food, and untrammelled wilderness. And as politicians seek to supply more of these goods and services, they are exploring more efficient ways of supplying them.

⁷ W. Kip Viscusi, “Economic Foundations of the Current Regulatory Reform Efforts,” *Journal of Economic Perspectives*, v. 10, n. 3, 1996, pp. 119-134.

⁸ See, e.g., Daniel Yergin and Joseph Stanislaw, *The Commanding Heights: the Battle for the World Economy* (New York: Simon & Schuster, 2002).

⁹ See, e.g., George J. Stigler, “The Theory of Economic Regulation,” *Bell Journal of Economics and Management Science*, v. 2, n. 1, 1971, pp. 3-21, available at <http://www.ipcreators.org/pdf-files/Stigler%20on%20regulation.pdf> (last visited on February 20, 2003).

¹⁰ See, e.g., Hahn and Hird, *supra* note 6; see also Clifford Winston, “Economic Deregulation: Days of Reckoning for Microeconomists,” *Journal of Economic Literature*, v. 31, n. 3, 1993, pp. 1263–1289.

¹¹ Indeed, several of these issues are topics of heated debate within the United States. We would argue that for many reasons, including minimizing the imposition of externalities across state borders and avoiding the balkanization of markets, many of these issues are best addressed at the federal level.

Political concerns with limiting tax increases are also creating incentives to extend regulation. In an era of tight public budgets, regulation serves as a substitute means for achieving political objectives such as the redistribution of income to favored interests. And while regulatory mandates don't show up on government budgets, the costs are nonetheless real.

III. WHY REGULATE?

The most common economic arguments for regulatory intervention are market failure—the failure of markets to equate prices with full costs—and considerations of fairness.¹² In the case of social regulation, the primary rationale is that individual companies lack incentives to take into account the full social cost of their actions.¹³ For example, a firm may pollute excessively because some of the consequences are borne by others. Or workers may lack adequate information about health and safety hazards needed to make knowledgeable choices about where they work and at what rate of pay.

The argument for economic regulation frequently rests on the cost structure of the industry.¹⁴ For example, in the late nineteenth century, railroads were thought to be “natural monopolies” because one railroad could service a route at lower cost than several competing firms.¹⁵ However, as other delivery mechanisms evolved—notably, the introduction of commercial trucking in the 1920s—railroads' cost-based advantage eroded.

If economies of scale exist, a single firm may indeed be able to produce at a lower per-unit cost than several firms, and without regulation it may be able to sustain prices in excess of

¹² See, e.g., Francis M. Bator, “The Anatomy of Market Failure,” *Quarterly Journal of Economics*, v. 72, n. 3, 1958, pp. 351-379; see also The World Bank Group, “The Role of the State,” available at <http://www1.worldbank.org/publicsector/pe/rolestat.htm> (last visited on February 20, 2003).

¹³ For an insightful analysis of approaches to social regulation, see Lester Lave, *The Strategy of Social Regulation: Decision Frameworks for Policy* (Washington, D.C.: Brookings Institution, 1981).

¹⁴ In some cases, government intervention in particular markets could also be justified on the basis of differences in available information. For a classic treatment see, George A. Akerlof, “The Market for ‘Lemons’: Qualitative Uncertainty and the Market Mechanism,” *Quarterly Journal of Economics*, v. 84, 1970, pp. 488-500.

¹⁵ See, e.g., W. Kip Viscusi, et al., *Economics of Regulation and Antitrust*, 3rd Edition (Cambridge: MIT Press, 2001), p. 329; see also Stephen Breyer, *Regulation and Its Reform* (Cambridge: Harvard University Press, 1982), pp. 29-32.

cost. By the same token, basic economic infrastructure such as bridges and sewage treatment systems may fit the “natural monopoly” category. Where such infrastructure is government-owned, it is by definition regulated. Where it is privately owned, the owner’s ability to set price above incremental cost may lead to inefficiency and thus justify regulation. But experience suggests that a regulated monopoly, beholden to regulators rather than customers, may be even less efficient than an unregulated one.¹⁶

Equity concerns provide another rationale for regulation. The idea is that regulation can be used to transfer income—for example, by setting prices to favor those who use small quantities of service because they are poor or live in disadvantaged regions. But just as regulation can sometimes undermine efficiency, its use as a means of redistributing income can have perverse consequences. For example, affluent farmers may claim a right to low prices for rail or telephone or electricity services in the name of the rural poor.

Even where regulation does succeed in redistributing income, the cost can be high in terms of reducing productivity.¹⁷ A policy designed to extend, say, local telephone service to poor people may generate \$10 worth of value for the recipients at a cost of \$30 to the phone company (or, more accurately, to the telco’s other customers). That explains why economists of liberal and well as conservative stripe often prefer to address concerns about equity through tax and government transfer policies rather than through regulatory policy.

By the same token, the issue of job creation (and destruction) can raise perplexing equity issues. Regulation typically affects where the jobs are—by industry, by locality—rather than the overall employment level, which is largely driven by macroeconomic factors such as business investment, consumer spending and interest rates. Although individual regulations typically have only minor effects on wages or industry-specific employment, such effects can be larger where a comprehensive set of regulations is at issue.

Where the size of the employment effect is significant, the appropriate measure of regulatory costs is the transition costs for employees forced to look for new jobs. In cases where regulation could have a significant impact on total employment—say, a large increase in

¹⁶ See, e.g., Stigler, *supra* note 9.

¹⁷ See Arrow, *et al.*, *supra* note 6.

the amount or coverage of the minimum wage—the effect on consumers and producers should also be taken into consideration. And looming over every debate about the division of the economic pie is the question of how the total size of the pie will be affected. Sometimes, the price of improving equity in the short run is slower growth in long-term productivity—and thus slower growth in average wages.

Good economic regulation frequently calls for an understanding of the cost and demand structure of an industry, but regulators typically do not have adequate access to such information. Similarly, health, environmental, and other social regulations must often be based on very limited information. For example, standards for one air pollutant may be tightened when, in fact, another pollutant is responsible for increasing morbidity.

Political problems also lead to inefficient economic results. Because regulation redistributes resources, politicians often use it to serve the interests of their backers rather than to correct market failures.¹⁸ An array of regulatory instruments, such as import quotas, licenses, and subsidies, are routinely used to channel wealth to influential groups.¹⁹ These issues suggest that regulation should be used with caution. Indeed, the burden should be on those who favor more regulation where externalities are difficult to identify,²⁰ where harmful practices are limited in scope and duration,²¹ and where health and safety are not at issue. Even in these cases the problematic history of intervention suggests the need for strong evidence that the benefits of regulation will exceed the costs.

¹⁸ See Anne O. Kreuger, “The Political Economy of the Rent Seeking Society,” *American Economic Review*, v. 64, n. 3, 1974, pp. 291-303. See also Dennis C. Mueller, *Public Choice II* (Cambridge: Cambridge University Press, 1989), pp. 229-246; Mancur Olson Jr., *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge: Harvard University Press, 1965), pp. 141-148.

¹⁹ In the United States, for example, price supports on peanuts resulted in an average annual consumer-to-producer transfer of \$225 million (in 1987 dollars) along with \$34 million in lost productivity associated with distortions in the use of land, labor, and other resources. See Randal R. Rucker and Walter N. Thurman, “The Economic Effects of Supply Controls: The Simple Analytics of the U.S Peanut Program,” *Journal of Law and Economics*, v. 33, n. 2, 1990, pp. 483-515.

²⁰ When an industry’s actions have consequences for its own consumers and do not impose significant costs on outside groups, competition among firms will make companies accountable for their actions. Accordingly, markets will force producers to provide the services consumers demand at minimum cost.

²¹ For example, cutting down the last giant redwood would clearly have a longer-term effect on society than does an early termination fee that prevents a consumer from canceling a one-year contract without penalty. Note, too, that more restrictive contracts can entail benefits, such as making it economically feasible for service providers to subsidize hardware.

IV. ESTIMATING THE IMPACT OF A REGULATORY CHANGE

Perhaps the most difficult task in estimating the impact of a regulatory change is specifying the “counterfactual”—what would have happened in the absence of the change. But the payoff can be very large. Comparing the consequences of non-action with the change induced by the regulation makes it possible to estimate the differences in costs and benefits between two possible states of the world, and thus to calculate the impact on producers and consumers.

A. Measuring Costs

There are five general approaches to estimating the cost of regulation—econometric analysis, expenditure evaluation studies, engineering cost analysis, productivity studies, and general equilibrium analysis.

- *Econometric studies* typically evaluate product markets directly, or use production and cost functions to measure the impact of regulatory change.²² Such studies provide a formal statistical apparatus with which to test hypotheses about the impact of regulation.
- *Expenditure evaluations* typically rely on surveys of businesses to determine costs of compliance with regulation.²³ Direct surveys produce easily quantified numbers, but do not always specify a counterfactual. For example, an automaker may choose to install stronger bumpers on its cars in order to attract customers. Attributing the cost of better bumpers to government regulation may thus overstate the cost of regulation.
- *Engineering approaches* calculate the added cost of installing mandated equipment directly, adjusting for quality changes.²⁴ Again, the question is the baseline for comparison. What kind of car would have been built in the absence of specific environmental regulations? What kind of customer call center would have been established in the absence of specific customer response regulations?
- *Productivity studies* estimate the difference between observed productivity changes over time and those that would have occurred in the absence of specific regulations. These studies

²² See, e.g., Robert Crandall, *et al.*, *Regulating the Automobile* (Washington, D.C.: Brookings Institution, 1986).

²³ See, e.g., Arthur Andersen & Co., *Cost of Government Regulation Study for the Business Roundtable* (1979).

²⁴ See, e.g., Crandall *et al.* (1986), *supra* note 22.

typically rely on expenditure data as a proxy for the opportunity cost of resources and may not take into account macroeconomic factors.

- *General equilibrium models*, which have become popular in recent years, examine how a competitive economy responds to a new policy, such as a change in regulation.²⁵ The effects of a regulation can be linked to changes in output, employment and, in some cases, social welfare. While general equilibrium models require very substantial amounts of data to estimate, they may provide a better picture of the effects of regulation.

Each of these approaches has its strengths and weaknesses. The relative value of each approach turns on individual circumstances.

B. Measuring Benefits

One approach to measuring benefits is to ask potential beneficiaries what they are willing to pay for tougher regulatory standards—in the jargon of economists, “contingent valuation.” The other is to infer value from what individuals actually do pay for quality changes in the marketplace.

Although contingent valuation studies are particularly useful when markets do not exist for the commodity to be valued—for example, the intangible value of bridging the digital divide—they suffer from a likely divergence between what people choose to tell the interviewer and how they would behave if actually given the choice. Much depends on the design of the questionnaire, and in particular how questions are placed in context. For example, asking people how much they would pay to give all poor children the resources to guarantee their social mobility and then asking what portion of this “budget” they would spend on Internet access for inner-city schools will generally lead to a smaller number than simply asking about Internet access.

Alternatively, researchers rely on studies of what people sacrifice to avoid unpleasant or dangerous circumstances, or on what they demand in terms of lower prices or higher wages to remain in harms’ way, to infer a willingness to pay.²⁶ For example, neighborhoods have

²⁵ See, e.g., Hazilla and Kopp, “Social Cost of Environmental Quality Regulations: A General Equilibrium Analysis,” 98 *Journal of Political Economy* 853 (1990).

²⁶ For an important paper on hedonic pricing, see Sherwin Rosen, “Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition,” *Journal of Political Economy*, v. 82, n.1, 1974, pp. 34–55.

invested in barriers to mitigate the effects of highway or airport noise. The benefits of the noise reduction are assumed to be at least equal to the cost of the barrier.

“Shadow” price or wage methods attempt to evaluate the marginal value of quality improvements in specific amenities. For instance, the value people place on protection from crime can be measured by the premium they pay for housing in safe neighborhoods. This technique has been fruitfully applied in a number of settings, including the valuation of reduced highway or airport noise, hazardous waste clean-up and other location-specific amenities.

These “hedonic” estimation procedures are useful, but rely on very indirect methods that can lead to statistical identification problems. For example, specifying all the relevant demand and supply characteristics that determine where people choose to live is a daunting econometric task, and the omission of key determinants can severely bias conclusions. Moreover, in some cases—for example, in estimating the value of improved visibility and health expected from cleaner air—definitional and measurement problems often arise. Despite these hurdles, advances in methodology promise better estimation of the value of commodities not explicitly traded in the marketplace.

V. PRINCIPLES FOR REGULATION

Regulation is not inherently bad or good. It is a matter of common sense that the merits of proposed rules should be judged on an individual basis, comparing expected benefits to expected costs.²⁷ Indeed, in an era in which agencies, including the Public Utilities Commission, have considerable leeway to impose very substantial costs in the form of higher consumer prices and lower economic output, the assessment of likely benefits and costs is a critical task for government.

²⁷ See Arrow, *et al.*, *supra* note 1.

What is cost-benefit analysis?

While economists have for decades weighed costs against benefits in assessing regulation, there remain surprisingly wide divisions of opinion about what belongs on the scale. Here, we offer two views.

Definition 1: Cost-benefit analysis should only include tangible costs and benefits that can be quantified with some precision. In practice, this largely consists of factors on which it is possible to place a monetary value on the added resources needed to comply with regulation, and the added value to stakeholders as measured by changes in demand. Typically, such quantification does not explicitly take into account concerns with equity—who wins, who loses—or intangible concerns, such as the value of species diversity.

Definition 2: Cost-benefit analysis includes intangibles as well as tangibles, using the best available means of integrating inherently difficult factors such as equity and the quality of life in the calculation.

We use this second definition recognizing the limitations of the more ambitious approach

As must be apparent from the discussion above, this process can be quite demanding.²⁸ But we believe that adherence to a relatively short list of principles could go a long way to assuring that regulation serves the public interest.

1. *In industries that are workably competitive and that do not generate significant externalities, the presumption should be strongly in favor of letting market forces work and against regulating price, entry, or service quality.*

There is considerable evidence that price and entry regulations imposed on competitive markets reduce economic welfare.²⁹ The airline industry offers a classic example. California chose not to regulate intrastate airfares in the 1960s, in contrast to the federal government, which regulated both fares and carrier entry on interstate routes. By no coincidence, flights between Los Angeles and San Francisco cost substantially less than shorter flights between

²⁸ For an excellent treatise addressing the strengths and limitations of cost-benefit analysis, see Cass R. Sunstein, *Risk and Reason*, (Cambridge: Cambridge University Press, 2002).

²⁹ See, e.g., Paul L. Joskow and Roger C. Noll, “Regulation and Theory and Practice: An Overview,” in *Studies in Public Regulation*, Gary Fromm (ed.), (Cambridge, MA: MIT Press, 1981), pp 1 - 65.

New York City and Washington, DC.³⁰ Indeed, California's success in this area led reformers at the Civil Aeronautics Board to liberalize interstate airline regulation and later led Congress to scrap almost all economic regulation of the airline industry. As subsequent analyses showed, airline deregulation resulted in multibillion-dollar gains for travelers in the form of lower fares and more frequent service.³¹

An example that is closer to home for the contemporary PUC is the highly competitive wireless telecommunications services market.³² Within the U.S., prices have been falling dramatically even as service has increased and the number of users has skyrocketed. Thus, wireless fits the criteria for an industry where the market has worked and regulation is likely to do more harm than good.

2. *The PUC should formally weigh the likely costs of all major proposed regulations against their likely benefits, rejecting rules that cannot pass a cost-benefit test. Where possible, benefits and costs should be quantified and expressed in monetary terms.*

Taken at face value, the idea that regulators should only act in ways that make society better off amounts to a truism. Exactly how to do this is not always clear, however, even when one uses cost-benefit analysis. A common criticism of cost-benefit analysis is that it gives little or no weight to factors that are not easily translated into numbers. While the point has merit, it does not invalidate the cost-benefit framework. It puts the burden on rule-makers to isolate important non-quantifiable factors and give them due consideration.

As a practical matter, the cost-benefit framework serves as an organizing principle—a means of disciplining the decision-making process. If regulators find that the quantifiable benefits from a proposed rule fall well short of the costs, the exercise will, at the very least, force them to think long and hard about the non-quantifiable benefits before adoption.

³⁰ Michael E. Levine, "Is Regulation Necessary? California Air Transportation and National Regulatory Policy," *Yale Law Journal*, v. 74, n. 8, July 1965, pp. 1416 – 1447.

³¹ Steven A. Morrison and Clifford Winston, "The Economic Effects of Airline Deregulation," Brookings Institution, Washington, D.C., 1986.

³² All seven of the FCC's annual CMRS competition reports state that wireless is a highly competitive market. See, e.g., Wireless Telecommunications Bureau of the Federal Communications Commission, "Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Seventh Report," Washington, D.C., available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-179A2.pdf (last visited on March 3, 2003).

3. *Where legislative mandates effectively preclude the use of cost-benefit tests, regulators should design rules to minimize costs. And before imposing traditional command regulation, regulators should assess the workability of alternatives to direct regulation, such as market-based economic incentives.*

Ideally, legislators will give regulators adequate leeway to reject or reformulate rules that impose costs in excess of benefits. That has not always been the case, however. For example, environmental regulators have at times been required to set minimum standards for sulfur emissions that cause acid rain, no matter what the cost. Here, the focus of regulation should be on cost-effectiveness—on designing rules to minimize the cost of compliance. More generally, where health and safety are not at issue zero tolerance rules make little sense and the focus should remain on maximizing benefits net of costs.

History is full of examples of the unintended—and unfortunate—consequences of command regulation. For example, vehicle fuel economy standards intended to cut oil use reduced the cost of driving, thereby blunting the desired impact on the demand for fuel and increasing traffic congestion.³³ By the same token, market-based incentive regulation has proved to be remarkably successful. For example, permitting utilities to trade rights to emit sulfur from power plants reduced pollution control costs far below the estimated cost of compliance through technological fixes or changes in fuel.³⁴

4. *The cost-benefit methodology used by the PUC should be based on widely accepted economic principles. Where analytic methods differ from standard practice, the reasons should be made explicit.*

While there are differences of opinion about the implementation of cost-benefit analysis, there is widespread agreement about some core assumptions. The U.S. Office of

³³ Randall Lutter and Troy Kravitz, “Do Regulations Requiring Light Trucks To Be More Fuel Efficient Make Economic Sense? An Evaluation of NHTSA’s Proposed Standards,” American Economic Institute – Brookings Joint Center, Regulatory Analysis 03-02, February 2003, available at <http://aei.brookings.org/admin/pdf/aei/papers/03-02.pdf> (last visited March 14, 2003).

³⁴ A. Denny Ellerman et al., *Markets For Clean Air: The U.S. Acid Rain Program*, (Cambridge: Cambridge University Press, 2000).

Management and Budget has produced a useful guide that could serve as a model for developing this methodology for state regulators.³⁵

5. *While the total benefits of a rule may exceed the total costs for a wide range of standards, in order to minimize the burden on society regulations must be set so that the incremental benefits exceed the incremental costs.*³⁶

Economic analysis of incremental benefits and costs can be useful in two ways. It provides a rule of thumb for achieving the maximum bang for the buck, once the general regulatory framework has been set. It can also be very useful in sorting through a broad range of policy approaches. After designing each policy alternative to achieve maximum net benefits, the analyst can compare them to see which is best from a cost-benefit perspective.³⁷

6. *The often-irreducible uncertainty about costs and benefits implies that, while best estimates should be used in tests of proposed rules, information about plausible ranges of values should also be made available.*

Some quantification is better than no quantification, even where there are large uncertainties. Indeed, estimates based on statistical relationships are often stated in terms of ranges of possible values of benefits and costs—not as single numbers. Of course, as we note above, not all benefits or costs can be easily quantified, let alone translated into dollar terms. Thus regulators should put appropriate weight on both quantitative and qualitative factors.

7. *Cost-benefit estimates of proposed rules should weigh the differential impact on the welfare of consumers, producers and third parties. At the very least, analyses of rules*

³⁵ Office of Management and Budget, “Appendix C: OMB Draft Guidelines for the Conduct of Regulatory Analysis and the Format of Accounting Statements,” in “Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice,” *Federal Register*, v. 68, n. 22, February 3, 2003, pp. 5492-5527, available at http://www.whitehouse.gov/omb/fedreg/2003draft_cost-benefit_rpt.pdf (last visited on February 27, 2003).

³⁶ To maximize net benefits, rules should be set so that the incremental benefits just equal the incremental costs. In practice, what counts is that incremental costs don’t exceed incremental benefits.

³⁷ The consideration of reasonable alternatives is a very important task in analyzing regulations. See, e.g., Arrow, *et al.*, *supra* note 6, pp. 7-8; see also Administration of William J. Clinton, “Executive Order 12866 – Regulatory Planning and Review,” September 30, 1993, available at <http://www.sba.gov/advo/laws/eo12866.pdf> (last visited on February 21, 2003). Unfortunately, many analyses do not provide adequate treatment of alternatives. See, e.g., Robert W. Hahn, *et al.*, “Assessing the Quality of Regulatory Impact Analyses: The Failure of Agencies to Comply with Executive Order 12866,” *Harvard Journal of Law and Public Policy*, v. 23, n. 3, 2000, pp. 859-885. Also available as a working paper, AEI-Brookings Joint Center Working Paper 00-1, January 2000, available at <http://www.aei-brookings.org/publications/abstract.php?pid=4> (last visited on February 26, 2003).

should include information about the potential impact on different groups with a discussion of ways to mitigate the impact on those adversely affected.

Such information is often difficult to obtain—and even more often, rule makers have no objective basis for weighing the welfare of one group against that of others. But, by definition, rules worth having must generate more benefits than costs. And a full airing of equity issues does, at the very least, give policymakers a basis for compensating the losers from the net gains to society.

8. *Considerations of fairness between generations as well as economic efficiency require that benefits and costs experienced far in the future be given less weight in decisions than those experienced today.*

The rate at which future benefits and costs should be discounted will generally not equal the rate of return on private investment. Instead, it should be based on how individuals trade current for future consumption—that is, how much they are willing to give up today in order to have more tomorrow.³⁸

9. *Existing regulations should be reviewed on a regular basis to verify that benefits still exceed costs and that they are being implemented in a cost-effective manner. Rules that don't meet this standard and can't be easily modified to meet the standard should be eliminated.*

Once regulations are promulgated, regulators' attention typically turns to new issues. However, circumstances change and good policy demands systematic review of old rules. Note, too, that the review process can improve future cost-benefit analyses by facilitating comparisons between how a regulation actually performed with how it was expected to perform.

10. *The PUC should issue regular reports outlining the benefits and costs associated with new rules. These reports should be written with the minimum use of technical language in order to make them accessible to non-professionals.*

³⁸ For a useful discussion of discounting and related issues, see Harvey S. Rosen, *Public Finance*, Sixth Edition, (Boston: McGraw-Hill Irwin, 2002), pp. 228-230. For problems involving very long time horizons and multiple generations, the use of standard discounting is more controversial.

Federal law requires the White House's Office of Management and Budget to issue a report on the costs and benefits of federal regulation.³⁹ The PUC should issue a similar report that focuses on newly issued and proposed regulations. This would make the regulatory process more transparent, thereby making it easier for the public to hold regulators and lawmakers accountable for their actions.

VI. CONCLUSIONS

Governor Davis's proposal to establish an Office of Economic Development to review all major proceedings before the Public Utilities Commission offers California a unique opportunity to improve its regulatory process. It reflects the reality that the quality of regulation is critical to the state's future, as well as the importance of assessing the impact of regulation in the broadest possible context.

Economic analysis, particularly cost-benefit analysis, could be invaluable in disciplining this review process. And the principles offered here, we believe, could make a real difference in assuring that Californians get the government they deserve.

³⁹ See, e.g., Office of Management and Budget, "Draft Report to Congress on the Costs and Benefits of Federal Regulations," *Federal Register*, v. 67, n. 60, March 28, 2002, pp. 15014–15045, available at <http://www.whitehouse.gov/omb/inforeg/cbreport.pdf> (last visited on February 21, 2003). For a critical review, see Robert W. Hahn and Robert E. Litan, "An Analysis of the Fifth Government Report On the Costs and Benefits of Federal Regulations," AEI-Brookings Joint Center for Regulatory Studies, Washington, D.C., 2002.