

COUNTING THE COSTS

Marvin H. Kusters

*For which of you, intending to build a tower,
sitteth not down first, and counteth the cost,
whether he have sufficient to finish it?*

Luke 14:28

ECONOMIC ACTIVITY is increasingly influenced by an extensive network of federal regulatory programs, much of it introduced in the past ten to fifteen years. Its goals are desirable—reducing the adverse environmental effects of economic activity, lessening risks of accidents and exposure to substances that imperil health, enhancing the amount and quality of information available to consumers, and improving equality of access to education, training, and jobs. But when this network was being built up, there was little appreciation of what it might cost to achieve these goals. Indeed, not much information was generally available on probable costs and they were usually not a major consideration in the debates leading to new or expanded regulatory programs.

Both the lack of good information on costs and the limited attention focused on them are attributable in part to the way these costs are financed. Public goods provided by government

Marvin H. Kusters is a resident scholar at the American Enterprise Institute and director of its Center for the Study of Government Regulation.

—highways, for example, or parks, or national defense—have traditionally been financed largely by collecting tax revenues and using the funds to buy from the private sector what is required to provide these goods. Estimates of costs for programs of this kind are part of the normal administrative process of budgetmaking. Regulatory costs, in contrast, are largely hidden from view—because they are included in prices paid by consumers or reflected in reduced returns to owners and shareholders. Thus estimates of these costs are not an automatic by-product of traditional administrative and accounting processes. The costs are no less real, however, than those that appear explicitly in public budgets; both represent resources that could be used for other purposes.

Greater interest in the magnitude of regulatory costs can be traced to several sources. Newly established or expanded federal regulatory programs have increasingly been recognized as producing mounting costs for compliance. This has raised questions not only about the amount of resources being devoted to the various regulatory goals, but also about wheth-

er in particular instances these costs might exceed realized benefits and whether alternative approaches might make possible lower costs, higher benefits, or both. At the same time there has been growing skepticism about the effects of more traditional regulatory programs involving price, service, and entry controls.

A body of analysis and evidence has been developed suggesting that, in these traditional areas, reform—including complete deregulation, in some cases—would reduce costs without correspondingly reducing benefits. This interest in reform, both of the traditional “economic” regulatory programs and of the more recent “social” regulatory programs, has been stimulated by the experience of persistent inflation—an experience that concentrates minds on reducing costs or at least limiting the thrust of cost increases.

Regulatory Cost Estimates

In recent years a number of efforts have been made to measure regulatory costs. Some of these have been carried out by government. There have been, for example, studies by the Council on Environmental Quality and the Department of Commerce on the costs of pollution abatement regulations, and by the Council on Wage and Price Stability and the Regulatory Analysis Review Group for a broader range of regulatory programs. Studies have also been carried out at universities or research institutions; the work of Murray Weidenbaum and his associates at the Center for the Study of American Business (Washington University) is a widely cited example. In addition, some major companies—including Dow Chemical, General Motors, Ford, Caterpillar, and R. J. Reynolds—have made internal estimates of costs attributable to regulation. Among the studies that have emerged from the business community, the one carried out by Arthur Andersen & Co. for the Business Roundtable appears to be the most detailed and carefully documented.

An important feature distinguishing the Business Roundtable study from most earlier studies is that it applied a consistent methodology for estimating costs to *all* the firms involved and for *each* of the regulatory agencies or programs considered. Previously, cost estimates have been made for a specific regulation or proposal, for a particular firm, and for broad

categories of regulations (in an effort to examine the economy-wide impact of regulation). These studies used different methods for constructing the estimates and different concepts for determining what should be counted as costs. All the estimates, of course, are subject to varying degrees of uncertainty and error. While estimates of the cost of regulation are always approximate and often quite crude, differences in methods and concepts used for cost measurement are an important source of differences in estimates.

Even in principle, there is no single answer to the question, What is the cost of government regulation?, without defining more specifically what is meant by costs. Nor do cost estimates by themselves provide sufficient information for judging whether a regulation is worthwhile. Both for defining what is meant by costs and for determining whether incurring the costs is worthwhile, it is necessary to make comparisons. Benchmarks must be established for measuring regulatory costs, and these costs must then be compared with the benefits attributable to the regulations.

The Business Roundtable study is essentially an analysis of costs, not of benefits—as is my discussion here. This does not mean that benefits do not deserve careful attention and measurement to the extent feasible. Both the proponents of a benefit-cost framework for evaluating regulation and its critics agree that it is essential to consider benefits, with the former usually arguing that they should be weighed against costs and the latter usually arguing that, in the process, benefits are likely to be given too little weight.

The Cost Measurement Methodology

In general terms, costs attributable to regulation are measured by the difference between the costs that occur in the presence of regulation and the costs that would prevail in its absence. This basic idea may seem quite straightforward, but its application can be complex. Determining what would have occurred in the absence of regulation—which is what establishes the benchmark or point of reference for cost measurement—involves a considerable amount of judgment.

The Business Roundtable study's incremental cost method, along with the example

given to describe it, is a case in point (see Michael Simon's article, Table 1, page 21). EPA's water pre-treatment standards require removal of 99 percent of certain pollutants. The costs of achieving this standard were compared with the costs of 95 percent removal. The rationale for choosing this reference point is described in the study as follows: "In its [the company's] opinion based on scientific research and studies, introducing 5 percent of the incompatible pollutants into the county's treatment works would result in no measurable damage to the county's system and no detrimental effects downstream." This rationale is, of course, couched in somewhat antiseptic technical terms ("scientific research . . . no measurable damage . . . no detrimental effects"), but this should not be allowed to obscure the reality that the level of abatement that would have been set in the absence of regulation remains a matter of judgment. Indeed, this is recognized in the study by reference to such factors as social pressures and market conditions.

The example also raises a substantive point. Taken at face value, it suggests that essentially no benefits should be attributed to removing *more* than 95 percent of the pollutants involved. This interpretation implies that, even in the absence of regulation, too much would have been spent on removing these pollutants—in the sense that costs are being incurred to the point where the benefits of further removal are of no value, instead of to the point where their value is equal to the costs of further abatement. This is obviously not intended to be the main point of the example, but it shows that the firm's judgments about the appropriate benchmark for cost measurement are made with benefits in mind. Moreover, the example shows that the implications of technical measures of abatement performance can be better understood by expressing them in ways that permit them to be compared with costs.

The exercise of judgment in constructing estimates of the costs of regulation is unavoidable. There is no reason to suppose that the participants in the project did not exercise sound judgment, or that they were not in the best position to make sound judgments. If firms were inclined toward exaggerating the costs of regulation, they could do this by establishing low-cost reference points for comparison. On the other hand, however, the costs of

regulation would be underestimated if firms were inclined instead to exaggerate the extent to which they would have devoted resources to pollution abatement, improved safety, or other worthwhile goals in the absence of regulation. Some resources would have been devoted to these goals (because this would have been sound business practice in terms of a firm's economic self-interest and its relationships with the broader communities of which it is a part). While there is no reason to suppose that these (and other) possibilities are equally likely and would operate to balance each other exactly, the direction of possible biases in the overall results is unclear.

Certainly the appropriate amount of resources might well not be devoted to these goals in the absence of regulation. Indeed, the rationale for much of our current regulation is presumably a judgment that insufficient resources would otherwise be devoted to these worthwhile goals. Much of the controversy about regulation and estimates of its costs is concerned with how cost information should be used in judging what amount of resources is enough.

The treatment of expenditures made for capital equipment is another issue that merits discussion here. Under the methodology of the study, these expenditures were simply aggregated along with those for annually recurring operating expenses incurred during the same year. Capital equipment, however, is not used up during the current year, the investments having been made in order to deliver benefits over a period of years. Cost estimates might take this into account by including only the portion of capital investments that represents an appropriate annual charge for the use of the capital. Estimates developed along these lines would, of course, require reaching back to measure the amounts of capital investment occurring in earlier years and assigning annual costs charged to these earlier investments. This would be a more ambitious undertaking. But the resulting estimates would correspond more closely in concept to conventional measures of annual production and costs, in which investment expenditures are amortized and annual depreciation charged as a cost. Under the method employed in the study, however, the estimate of annual aggregate costs must be in-

(Continues on page 22)

(Continued from page 19)

terpreted as a measure of the amount of resources withdrawn from other uses during the current year to meet regulatory goals, instead of as the amount of resources actually used up during the current year.

Types of Regulatory Costs

Costs attributable to government regulation arise in different ways, and different classes of costs should often be treated differently. Moreover, costs in some classes are susceptible to measurement using the methodology employed in the Business Roundtable study, while others are not. It is, therefore, useful to distinguish various classes of costs arising from government regulation in order to place cost estimates and the methodology used to develop them in perspective. I will, for this purpose, distinguish four classes of regulation-induced costs, even though it would be possible to define narrower sub-categories. The four categories are administrative costs, compliance costs, transfers, and inefficiency.

Administrative Costs. Here I include the costs incurred for the staff, supplies, studies, and consultants' reports needed to write, manage, publish, and police regulations. Essentially, these costs cover the architectural and housekeeping work that goes into developing and operating the regulatory system. (For this discussion, I limit administrative costs to those incurred by the federal government, but costs of this character are also incurred by private firms and other units on which regulations impinge.) Estimates of the government-financed administrative costs can be obtained from the government budget (with appropriate attention to cost allocation problems).

Compliance Costs. This category is comprised of expenditures attributable to regulation incurred by firms (and other units) covered or affected by the regulations. Costs in this class include those incurred to analyze possible approaches and to shape proposed standards, those necessary to meet the specifications established by the regulations, and those necessary to develop data and maintain records demonstrating compliance and to defend the compliance strategy against legal assault. For that

component of compliance costs that consists of housekeeping functions that would not be carried out in the absence of regulation, cost estimates can be developed in a relatively straightforward fashion from the accounting records of the firms involved (with appropriate cost allocation).

But for other components of compliance costs, estimation is often more complicated. Consider—as a model—the simplest case where, in order to meet a technical standard limiting effluent discharges or exposure levels, it is necessary to develop, install, operate, and maintain a specific additional piece of equipment. Here the costs attributable to regulation can be traced to specific entries in the accounting records of the units making the expenditures necessary to achieve the standard. Situations are rarely this simple.

In more complex cases, the need for exercising judgment becomes more obvious, and additional uncertainty is accordingly introduced into cost estimates. The appropriate reference point for calculating costs attributable to regulation is readily identified when meeting a standard requires discrete and separate additional equipment or practices. It is less easily identified when a new plant or production process is designed, constructed, and placed into operation. If compliance requires changes more complex than the simple model—if it requires change that is incorporated instead as an integral part of the process itself (or even perhaps substitution of a quite different process)—the costs must be allocated somehow between production and pollution abatement. And, as is well known by students of public utility regulation, the allocation of joint costs—to, for example, long distance transmission, network switching, and local telephone service—is inevitably somewhat arbitrary.

A different complication arises when regulatory standards imposed on one firm can be met only by using inputs with different (and more costly) specifications purchased from another firm. This component of the costs of meeting a standard could in principle be estimated either from the increase in input prices for the user firm or the increased cost to the producing firm. (Including both would, of course, be double counting, and the methodology of the Business Roundtable study was designed to avoid this.) It should be noted,

however, that while the user firm may be aware that the more costly input specifications arise from a regulatory requirement, it may not have access to the producing firm's accounting records for making a cost estimate. Conversely, while the input-producing firm may be in a position to estimate the increased production costs, it may be unaware that they are a result of a regulatory requirement for the user firm. Little imagination is required to envision the difficulties in tracing all the costs incurred in this way as the number of stages in the production process is extended and the number of firms increased.

Unlike the administrative costs incurred by government, which are financed by taxes, compliance costs are financed largely through higher prices to consumers who purchase the relevant goods and services. The basic data for estimates of these costs are accordingly contained in the accounting records of the firms affected. Although the relevant costs cannot ordinarily be estimated by methods as simple as adding up an appropriate selection of vouchers, it is nevertheless possible to develop reasonable estimates of compliance costs by using a methodology such as that employed in the Business Roundtable study.

Transfers. The costs in this category do not really represent *economic* costs. That is, they do not by themselves involve the use of resources that could otherwise be devoted to other ends. Consider—as an example of a transfer-type cost—the effects of minimum wage regulation. An increase in the legal minimum rate obviously results in an increase in labor costs. (As in the instances discussed earlier, of course, the appropriate reference point for comparison becomes difficult to establish precisely with the passage of time.) The increase in labor costs, however, does not involve additional resource usage, but instead higher wage incomes—at least for those able to obtain jobs at the higher wage levels.

It should be noted that most regulations give rise to costs in more than one of the four categories I have outlined and involve a transfer component that can be distinguished from the costs borne by the society as a whole. The first point is illustrated by the minimum wage example: according to the available evidence, higher minimum wages result in lower employ-

ment than would otherwise be realized, with the job losses representing a separate and additional cost of regulation that would not, of course, be included in costs experienced by firms. The second point may be illustrated by standards limiting exposure to cotton dust, in which the benefits accrue mainly to workers in the industry and the costs are borne by the much broader class of consumers of cotton products. As another example, abatement of pollution for a particular geographic area or industry confers benefits on groups that are in general quite different from those bearing the costs. In many instances these transfer components may be compensated for by subsequent market adjustments; for example, when jobs are made safer, the wages necessary to attract workers may be lower.

As this discussion shows, the higher costs (and the correspondingly higher prices to consumers) that result from regulation are not always accompanied by an equivalent reduction in resources available for other uses. Thus, the costs of regulation that appear as transfers tend to raise prices rather than to use up additional scarce resources.

It is extremely important to distinguish the costs in the transfer category from the costs that arise through a process that in some respects may seem similar. For example, the costs of designing, building, operating, and maintaining a piece of pollution abatement or safety equipment show up as jobs, incomes, and profits generated by the firms that build such equipment, and as jobs and incomes for those that operate and maintain it. It is thus sometimes said that more jobs and income are gained as a result of regulatory programs than are lost as a result of failures or reduced production among the regulated firms. The basic error in regarding these designing, building, operating, and maintaining costs as a transfer—or even a net gain—is that, unlike transfers, they represent real resource use. That is, the jobs involved in the firms making the pollution abatement or safety equipment *are* the real resources represented by the cost estimates, so that diverting these resources to this use means a *net reduction* in resources available for other uses. The higher costs to consumers that result do not represent simply a transfer of income.

Regulatory costs in the transfer category may not be very important for the particular

programs analyzed in the Business Roundtable study. Other studies of regulatory costs, in the transportation area particularly, suggest that transfers could be an important factor; higher costs to shippers may in part be reflected by higher wages in the regulated sector and in the values of operating rights. In any case, costs in this class are not readily captured by a cost-estimating methodology that relies on accounting records. Instead, market behavioral responses must be estimated using appropriate models and data. Costs that should be regarded as transfers could inadvertently be captured by the Business Roundtable methodology, however, and included with other (true economic) costs. For example, under ERISA regulation, costs of increasing plan contributions to enhance benefits to participants (some \$40 million of the \$61 million in ERISA costs estimated in the study) should be regarded as a transfer, and thus different in concept and effect from most other costs estimated in the study.

Inefficiency Costs. This fourth class of costs represents a disparate collection, familiar to economists as “deadweight losses.” Regulation often restricts the range of permissible prices, practices, or processes, and these legal restrictions affect the pattern in which resources are used. If these restrictions could be modified to bring about a redeployment of the resources so as to produce a higher total value of output (including the value of things not traditionally traded in markets such as improved air quality), regulations can be viewed as imposing net costs. These costs would be “deadweight losses” that result from producing the wrong mix of output, producing with the wrong mix of inputs, or both. The mix is “wrong” only because, *with the same basic resources*, more could be produced of what is valued most. That is why the consequences of the “wrong” mixes can be regarded as costs.

Some examples may be useful to illustrate inefficiency costs. Suppose, for example, that shipping rates established by regulation result in freight moving by railroads that could have been hauled more cheaply by truck (or vice versa). Total resource costs of hauling the freight would be reduced if different prices prevailed—or, alternatively, more freight could be moved without additional resource usage. As another example, consider a regulation requir-

ing such stringent documentation of substantive advertising claims that advertisers shift instead toward messages that provide little substantive information. In this case, costs to the advertiser may even be reduced, though the interests of potential customers would have been better served if the shift had not occurred.

These examples illustrate inefficiency at a point in time, but investment decisions, with implications for the future, can also be affected by regulation. Suppose, for example, that requirements for demonstrating the safety of new pesticides are made so severe and thus so expensive that new and specialized substances are no longer developed. The result could be a choice between using older and more dangerous pesticides or suffering severe crop damage. Consider, as another example, the effects of a regulation that sets up an emission standard based on what could be met by using a specific piece of pollution abatement equipment. There would be no reward for doing better than required by the standard. Moreover, there would be little point in developing a lower-cost control method if its performance fell just short of the standard. In other words, despite the possibility of substantial cost savings for essentially comparable performance, an alternative approach might not meet with regulatory approval. Thus research, development, and innovation might, as a consequence of the incentives and constraints in a rigid regulatory approach, be channelled in directions that would not produce the highest pay-off to society.

One important point illustrated by these examples is that costs to society cannot be identified simply by scrutinizing company accounting records. In some cases, the costs to society are the result of too little expenditure by firms for investments or products or services that would in fact be more valuable to society than some of those on which the resources are expended. In most instances, costs of these kinds can be identified and estimated only by the use of complex (but nevertheless still oversimplified) models of the processes and behavioral responses involved, and by assembling extensive data so that the model can be applied. While costs arising from inefficiency are more subtle to grasp and more difficult to measure than the other types of costs, they are in a sense the most serious because they represent pure waste of resources.

... costs arising from inefficiency ... are in a sense the most serious because they represent pure waste of resources.

A second point with potentially great long-term significance is that, while the size of regulatory costs is obviously important, the *manner* in which these costs are incurred may be even more important. Current regulatory approaches often take the form of specific equipment requirements based on engineering design studies or pilot projects, which are in turn based on price projections that may prove to be unrealistic and technology that is either currently available or on the immediate horizon. As a result, incentives for improvements in performance beyond that specified by the standards are limited or absent and the attractiveness of maintaining static technology enhanced (because this technology, in practice, becomes the definition of meeting regulatory requirements). Thus regulatory requirements that impose the same current (or discounted) costs can have different implications for productivity and output in the future.

Summary

The estimates of costs of government regulation developed in the Business Roundtable study provide useful information on ways in which regulatory costs are incurred and on their magnitude. The significance of this contribution is in part attributable to the carefully detailed methodology employed and to the use of the financial and accounting records of the firms affected. But in a number of ways the information is limited in its scope.

The most obvious limitations are in the number of regulatory programs covered, the number and size of the firms involved, and the fact that only federal regulations were studied. Thus only six regulatory areas (selected in part on the basis of the magnitude of their impact) were considered, and certain programs in these areas were excluded (such as the antitrust activities of the FTC). The firms involved are large, and while a considerable share of the nation's economic activity is covered and a rea-

sonable diversity of industries represented, generalization from these estimates to the economy as a whole (as the study notes) cannot be made. In addition, of course, nonprofit organizations such as hospitals and schools as well as state and local governmental units are also affected by federal regulation. Limiting the study to only *federal* regulation is reasonable, but it does have the effect, for example, of excluding all costs of pollution abatement for automobiles sold in California because state standards, being more stringent than those of the federal government, preempt the federal standards.

More broadly, the methodology underlying the study cannot be used to identify and estimate certain types of regulatory costs likely to have a significant impact on the economy, as is acknowledged in the study. The costs that are estimated are only those in the second category—compliance costs—of the four that I have discussed. Costs in the first category—administrative costs—can, of course, be estimated from government budget sources. But costs in the other two categories—transfers and inefficiency—are another matter. Estimates of these cannot be made by analysis using only the accounting records of the units affected, but require instead more complex and sophisticated methods of economic analysis.

... the Business Roundtable study should be viewed as sketching out a limited, though significant, portion of the more complex overall picture. . . .

There is evidence that these more difficult-to-measure types of cost are quantitatively important. Empirical studies of the effects of transportation regulation, for example, have produced evidence of significant transfer and inefficiency costs. Studies of drug development and innovation and of water pollution abatement have produced evidence of adverse effects through inefficiency in meeting regulatory goals. The information on regulatory costs developed by the methods of the Business Roundtable study should be viewed as sketching out a limited, though significant, portion of the more complex overall picture of the costs of regulation. ■

What We Did

Michael E. Simon

THE BUSINESS ROUNDTABLE study is unique among studies of regulatory costs. It covered a significant number of regulatory programs. It applied uniform, verifiable principles for measuring costs to a substantial number of large companies. And it drew upon the accounting data and personnel of the companies in question. Thus, in my opinion it is useful not only for its conclusions about specific costs, but also because it demonstrated a methodology that can be extended to even more comprehensive efforts of its kind.

The study was carried out by Arthur Andersen and Co. for the year 1977 and enlisted the participation of 48 of the Business Roundtable's 192 member companies. Our first task was to narrow the study's scope—which we did by balancing the aims of completeness and practicality according to three criteria: the agencies and programs selected should involve a significant portion of federal regulatory costs, the regulations should affect a wide range of industries, and finding the relevant data should not require unreasonable amounts of manpower from companies participating in the project. The six regulatory areas chosen included four agencies—the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Department of Energy (DOE), and the Federal Trade Commission (FTC)—and two programs—the Employment Retirement Income Security Act (ERISA), and equal employment opportunity (EEO).

After choosing these, we developed procedures for data collection, established principles for analyzing the data, and trained the company project teams in the approach.

Michael E. Simon is a partner in the accounting firm of Arthur Andersen and Co.

The forty-eight companies that participated in the study operate in more than twenty industries and comprise an important segment of the U.S. economy. In 1977, they accounted for about 8 percent of the sales of U.S. industry, 5 percent of civilian employment (excluding agriculture and government), and 19 percent of private sector capital expenditures for plant and equipment. However, since no small businesses participated, and since the industry representation was very uneven, we did not attempt to extrapolate our results to all businesses in the economy.

Incremental Costs. The most important principle underlying our methodology is that of incremental costs. Rather than ask the companies to include all actions taken to comply with the regulations in the six areas—whether or not those actions would have been taken without the regulations—we decided instead to ask them only for the costs of actions they would *not*, in their judgment, have taken in the absence of regulation. Accordingly, project teams were told to assume a 1977 environment in which federal regulation had never existed, but in which all other factors (such as social, interest group, and marketplace pressures) were present; and company chief executive officers were requested to review the judgments made. This incremental cost approach reflects the fact that managements would indeed make different judgments about the use of resources in the absence of regulation. By requiring participating companies to make those judgments, we came up with measurements of the costs directly attributable to the regulations in question. Table 1 illustrates one calculation of incremental costs.

In addition to the incremental costs of regulation, there are, of course, indirect or secondary costs—which many companies believe to be larger. These include lost productivity, delays in construction of new plant and equipment, misallocation of resources, and lost opportunities. Though our report describes some of these costs, they were excluded from our calculations because of the difficulty of identifying and measuring them from the records of business firms.

Results of the Study. In the six regulatory areas covered, the forty-eight participating companies incurred \$2.6 billion in regulation-induced incremental costs in 1977 (see Table 2)—considering much of it to be wasteful. The significance of the amount may be measured by the fact that, in

1977, these companies had total capital expenditures of \$25.8 billion, R&D of \$6.0 billion, and profits after taxes of \$16.6 billion. The manufacturing sector was more strongly affected than services, transportation, and communications. Its share of the incremental costs was \$2.3 billion, which compares with capital expenditures for this sector of \$13.4 billion, R&D of \$5.4 billion, and profits after taxes of \$10.2 billion.

Adding to the significance of the \$2.6 billion figure is the fact that two-thirds of it consists of operating-and-administrative and product costs. These types of costs recur each year.

Two points about incremental capital costs merit emphasis. First, illustrating the differing effects of regulation from industry to industry, these amounted to 3.3 percent of capital expenditures for all participating companies but 19 percent of those expenditures for the primary metals companies.

Second, many of the capital projects active in 1977 were, of course, begun before 1977 or ended after 1977. For those projects active in 1977, \$1.6 billion in incremental capital costs was incurred prior to 1977 and an estimated \$1.4 billion was to be incurred after 1977. Thus, for each \$1 spent for incremental capital costs in 1977, \$3.50 was spent in prior years or would be spent in later years to start or complete *the same* capital projects. This \$3.50 is *not* included in our totals. Also not reflected is the estimate that capital projects active in 1977 will *increase* recurring annual incremental operating costs by \$305 million (not including depreciation).

Incremental costs of regulation are ultimately passed on to the consumer in the form of increased prices or to the shareholder in the form of diminished equity. The full \$2.6 billion passed on to the consumer would, on average, raise prices of the products of the participating companies by 1.1 percent. Thus, these costs add to inflation and adversely affect the ability of U.S. industry to compete at home and abroad.

Conclusions. While the Business Roundtable study has limitations—the key one being that it does not measure indirect regulatory costs—it makes three major contributions. First, its findings, both the general observations and the detailed statistics in the 500-page appendix, can help identify those regulations that need further scrutiny and possible reform.

Second, the study identifies some of the attributes of regulations that impose high costs.

Table 1
CALCULATION OF INCREMENTAL COST

Steps	Example
Company identifies an action taken to comply with a specific regulation.	Installation of waste-water pretreatment system to remove 99% of pollutants in compliance with Title 40 CFR, Chapter 1, Part 128.
Would action have been taken otherwise?	Pretreatment system without Title 40 would have been designed to remove 95% of pollutants.
What was the cost of the action?	\$1,200,000 (from fixed-asset ledger data).
How much would the action that would have been taken in the absence of regulation have cost?	\$800,000 (the cost of installing a 95% system, updated from earlier fixed-asset data).
What was the incremental cost?	\$1,200,000-\$800,000=\$400,000.

Table 2
INCREMENTAL COSTS
(in Millions)

Area	Operating & Admin.	Capital	Product	R&D	Total
EPA	623	765	555	75	2,018
EEO	209	8	—	—	217
OSHA	103	68	2	11	184
DOE	70	28	10	8	116
ERISA	61	—	—	—	61
FTC	23	1	—	2	26
Total	1,089	870	567	96	2,622

These attributes include requiring new equipment or retrofitting, specifying standards that cannot be met with existing technology, prescribing predetermined compliance methods or engineering solutions that leave no flexibility for other ways of reaching the same goal, forcing recurring operating, maintenance, or monitoring costs, and setting unclear rules or changing rules in midstream.

Third, and perhaps most important, the study demonstrates that it is possible to apply a uniform and credible method for determining incremental regulatory costs to a large number of companies in a wide variety of industries. The challenge now is to extend the use of this methodology in order to improve our understanding of a significant part of the regulatory burden. ■