A product of "blackboard economics" encounters the real world

The End of Market Failure

BY RICHARD O. ZERBE JR. AND HOWARD MCCURDY

THE QUESTION OF THE PROPER ROLE OF GOVERNMENT IN THE marketplace is an old and fundamental one. Public officials throughout the world grapple with this issue, a task made more urgent by recent efforts to privatize public responsibilities and "reinvent" government. In the search for objective standards by which such decisions can be made, public officials increasingly have turned to the concept of market failure. Use of the market failure concept is widespread, in teaching curricula, practicing government circles, and legal analysis. But market failure is a fatally flawed concept. An alternative economic approach utilizing transactions costs provides a better conceptual framework for understanding issues of government intervention.

A SHORT HISTORY OF THE MARKET FAILURE CONCEPT

A LEADING POLICY ANALYSIS TEXTBOOK BY DAVID L. Weimar and Aidan R. Vining asks:

> When is it legitimate for government to intervene in private affairs? In the United States, the normative answer to this question has usually been based on the concept of market failure—a circumstance where the pursuit of private interest does not lead to an efficient use of society's resources or a fair distribution of society's goods. (*Policy Analysis: Concepts and Practice,* p. 13)

Originally, the market failure concept was used only as a normative concept to define appropriate situations for government intervention in markets. As it matured, the market failure concept took on an additional characteristic—that of a diagnostic tool by which policymakers learned how to objectively determine the exact scope and type of intervention. Joseph Farrell suggests: "The welfare theorem lets [us] classify inefficiencies as due to monopoly externalities, and so on. This helps us to understand and perhaps to solve such inefficiencies just as a doctor's diagnosis … is part of treatment" (p. 116).

To employ the diagnostic approach, analysts attempt to identify both the precise type of problem that gives rise to the market failure and the different types of nonmarket failures (bureaucratic malfunctions) likely to occur if public officials attempt a cure. Advocates of the approach present use of this "double market failure test" as an essential part of the diagnostic process. Like doctors attempting a cure, policy analysts render a diagnosis of the underlying disease and consider the dangers of treatment, including side effects. Some textbooks even present tables that allow students to identify appropriate interventions for different types of market and government failures.

In keeping with the diagnostic model, policy analysts are taught to apply the least intrusive intervention. If a market failure can be resolved by the creation of an incentive that will allow the market to correct itself, such as a tax expenditure, such a measure is to be favored over more aggressive treatments, such as the creation of a government monopoly.

What began as a simple attempt to provide a normative rationale for the existence of government expenditures has

Richard O. Zerbe Jr. is a professor of public affairs and an adjunct professor of law at the University of Washington in Seattle. **Howard McCurdy** is a professor of public affairs at American University in Washington D.C.

developed into a full-scale, quasiscientific diagnostic and prescriptive exercise. As a normative rationale, the market failure theory is incorrect but relatively harmless. But when used as a diagnostic test, it is not harmless—it frequently results in ill-advised policy recommendations.

Inevitably, the market failure concept affects public policy. In 1993 the U. S. government issued Executive Order 12866, which requires federal officials to conduct an economic analysis of proposed regulations. Guidelines for implementing this order require officials to determine "whether the problem constitutes a significant market failure" before they recommend government intervention. The guidelines further provide instructions for identifying types of failures, comparing potential interventions, and guarding against "unintentional harmful effects on the efficiency of market outcomes."

A resulting 1996 Regulatory Impact Analysis by the Office of Management and Budget makes reference to a variety of market failure tests. For example, a controversial 1994 standard that set stricter wind resistance standards for trailer homes claimed that asymmetric information and externalities made it necessary for the government to intervene in the market for manufactured housing (see the *Cato Journal* article by Louis De Alessi, "Error and Bias in Benefit-Cost Analysis: HUD's Case for the Wind Rule").

WHY THE MARKET FAILURE MODEL FAILS

IN STANDARD WELFARE ECONOMICS, MARKET FAILURES ARE said to exist when markets fail to implement all the gains that can be achieved through trade. The production of too few goods or too little information is thought to be a market failure when the overall cost of production is less than the benefits to those who consume them. Too much pollution is a market failure when the costs of reduced emissions to the firm are less than the benefits to the population at large. The firm does not pollute less, even though the decrease would appear to produce gains from trade. These failures are also classically called externalities in those cases in which the pricing system supposedly fails to account for all the costs and benefits from trade.

But with externalities, as in market failure analyses, gains from trade fail to be realized whenever there is a trade that would be worthwhile only if transactions costs were zero. The Nobel laureate economist Ronald Coase had a fundamental insight when he noted that the standard welfare-economic analysis of such situations, which emphasizes the gains to trade that do not occur, assumes that the transactions costs of achieving such gains to trade are zero. So market failure occurs and externalities exist when in reality one can not gain from further trade.

Transactions Costs Defined Transactions costs are defined as *the resources necessary to transfer, establish, and maintain property rights.* In the real world, of course, transactions costs are always greater than zero. Although no such world exists, the world of zero transactions costs is the world in which market failure analysis operates. Conceptually, the market failure model fails because it ignores the role of transactions costs. The externalities on which market failure analysts tend to focus are defined by transactions costs. In essence, externalities exist because the transactions costs of resolving them are too high. In this sense, every story about externalities and market failures is also a story about transactions costs.

Transactions costs define externalities in the following manner: *the net value of the externality constitutes the lower boundary for associated transactions costs.* If transactions costs were less than the net value of the externality, it would pay to incur them. Suppose one party suffers from the effects of pollution produced by a neighboring source. The pollution damage is $125,000 and the cost of installing devices to eliminate the pollution is $100,000. The damage done by the pollution is greater than the economically optimal amount, by definition an externality. Pollution, in short, is being overproduced. In such a case, $25,000 represents the gain that could be made by eliminating the pollution, in a situation where transactions costs were zero. The costs of these transactions (negotiations, lawsuits, contracts) are not zero, of course. If they are less than $25,000, efforts to eliminate the externality will ensue. If the costs are greater than $25,000, the incentive to resolve the problem disappears.

Transactions Costs Are Ubiquitous The existence of unpriced but non-zero transactions costs means that some trades do not occur—trades that would be undertaken if the cost of the unpriced transactions were zero (or less than the potential gains from trade). Failure to undertake these trades is defined as a market failure.

Unpriced transactions costs are everywhere, and because they are ubiquitous, externalities (market failures) are also ubiquitous. The market failure concept could, in theory, be applied to many cases other than the classic ones discussed in introductory economics classes: provision of national defense and pollution reduction. For example, if a neighbor fails to plant more flowers, even though this would increase property values in the neighborhood by more than the cost of planting, an externality (market failure) exists. The highway driver who, by driving too slowly, fails to consider the time costs he or she imposes on other drivers creates an externality. Because the government owns the highway a more appropriate term would be nonmarket failure.

Externalities exist anytime there is inefficiency in the law affecting markets. A law that encourages inefficient breach of contract produces an externality, as does a tort law that sets the penalty for reckless driving so low that too much reckless driving occurs. Suppose that buying a car involves title transfer fees imposed by the state. If the fees are set too high, some trades will not occur that would have occurred in the absence of the title transfer fees (a transactions cost). This is nonmarket failure.

Because market failures (externalities) are everywhere, the concept provides justification for unlimited government intervention. Analysts uncomfortable with lack of

limits on government intervention have introduced the concept of nonmarket failure or bureaucratic malfunction to remind us that government intervention is not without its own transactions costs. But the concept of nonmarket or government failure does little to restrain those who advocate government intervention in markets.

EMPIRICAL EVIDENCE AND CLASSIC EXTERNALITIES

BECAUSE IT IS CONCEPTUALLY FLAWED, THE MARKET FAILURE model produces misleading advice. Consider the cases of the lighthouse and beekeeping. In each case, market failure analysis predicts that voluntary behavior will not produce gains to trade. In each case the prediction is incorrect and an understanding of transactions costs helps to explain why.

The Lighthouse The eminent economist Paul Samuelson illustrates his arguments about market failure by using the example of the lighthouse:

> Here is a later example of government service: lighthouses. These save lives and cargoes; but lighthouse keepers cannot reach out to collect fees from skippers. So, says the advanced treatise, "we have a divergence between private advantage and money cost … and true social advantage and cost." Philosophers and statesmen have always recognized the necessary role of government in such cases of "external-economy divergence between private and social advantage." In the teaching of market failure analysis, the lighthouse is a major example. (Paul A. Samuelson, *Economics: An Introductory Analysis*, p. 45)

A major problem exists with the lighthouse example, however. The facts do not support the analysis. Ronald Coase (see "The Lighthouse in Economics" in the *Journal of Law and Economics*) has examined how lighthouses were historically provided in England and Wales. Contrary to what market failure analysis would lead us to believe, most seventeenth century lighthouses were not built or run by governmental bodies. The lighthouses were built by private parties for private gain. Private individuals would gain a patent from the crown upon presenting petitions from ship owners and shippers. (The granting of a patent is a form of government intervention—in this case a market-enhancing intervention that relied on the government's coercive powers to create a property right.) A patent allowed a private individual to build a lighthouse and levy tolls on ships. The toll was collected by agents or customs officials at port and varied with the tonnage of the vessel for each lighthouse passed. The ship tonnage could be taken as a reasonable approximation of the level of demand for the lighthouse, so that prices approximated an efficient Lindahl (discriminatory) pricing scheme.

Privately run lighthouses arose even though a government organization, Trinity House, had been established in 1566 and had started to build lighthouses early in the following century. Trinity House was reluctant to invest its own funds in lighthouses, yet opposed the efforts of private individuals to construct them. By 1820, 24 lighthouses were operated by Trinity House and 22 by private individuals, although private persons had originally built many of those operated by the government. The market failure approach would lead us to believe in the efficiency of government provision of lighthouses. Experience, however, leads us to a more complex conclusion.

Bees and Crops In his classic discussion of the positive reciprocal externalities that exist between beekeepers and the owners of apple orchards, J. E. Meade argues that a system of taxes and subsidies must be imposed to achieve efficiency (see "External Economies and Diseconomies in a Competitive Situation" in the *Economic Journal*). Apple farmers provide valuable services to beekeepers because bees feed on the blossoms of fruit trees and bees provide valuable pollination services to apple growers. Meade did not believe that the gains to trade between apple farmers and beekeepers would occur because the apple growers could get the benefits of bees without having to pay for them.

Steven N.S. Cheung examined the relationship between apple growers and beekeepers in Washington State (see "The Fable of the Bees: An Economic Investigation" in the *Journal of Law and Economics*). Rather than market failure, he found that contractual arrangements between farmers and beekeepers have long been routine in the United States so that the supposed failure did not exist. This system of contractual relations between beekeepers and farmers is so well developed, in fact, that while written contracts (sometimes so simple as to be recorded on postcards) are used to secure an initial arrangement among the parties, oral agreements are standard for subsequent relations. The various pieces of evidence lead Cheung to conclude, contrary to Meade's story, that "the allocation of hives and nectar flows approximates that of a smoothly functioning market" in which resources are efficiently allocated. Even though the development of a market between beekeepers and tree owners would seem to be difficult, because of transactions costs involved in restricting the benefits of bees to those tree owners who pay, the existence of cultural norms defining acceptable behavior, and low monitoring and enforcement costs, voluntary arrangements are allowed to proceed.

GOVERNMENT FAILURE: THE SALT DILEMMA

EXTERNALITIES EXIST IN THE PUBLIC AND PRIVATE sectors that are a source of nonmarket failure. In considering the benefits and costs of a new project, a government agency may be tempted to ignore the costs that its projects impose on different agencies or on individuals. Suppose that agency A undertakes a project that saves itself $1 million a year, but also imposes costs of $2 million a year on a *different* government agency, B. An externality results. In theory, assuming transactions costs were zero, we would expect the second government agency to offer a sum of money or other inducement to the first agency in an effort to convince it to abandon the project. Should we assume, then, that an

overarching governmental body with authority over both agencies should intervene and force A to abandon its project? Under the market failure model, the answer would surely be "yes."

Consider the case of highway de-icing. Highway departments de-ice roads with salt because clear roads are more valuable than the price of purchasing and applying salt. And salt is less expensive than other de-icing alternatives, such as calcium magnesium acetate (CMA). CMA costs as much as five times the price of salt.

A third agency, the Environmental Protection Agency, estimates that salting roads inflicts a cost of $2.91 billion a year in harm to the environment, to automobiles, and to bridges. Experts estimate that using CMA instead of salt would reduce this damage by $1.9 billion. The purchase price of CMA is $1 billion higher than that of salt, but CMA inflicts $1.9 billion less damage than salt does. Therefore, forcing highway departments to use CMA instead of salt would save $900 million, if we ignore transactions costs.

If transactions costs were zero, we would expect all of the people who are harmed by salt to offer a sum of money to highway departments to convince them to use CMA instead of salt. However, given the size of the class of people who are injured by road salt (which includes everybody who cares about environmental goods and everyone who owns a car), it would be impossible for them to coordinate their activities and negotiate a deal. The transactions costs would be prohibitive. Because the total social cost of using salt is $900 million greater than the total social cost of using CMA, a policy change that resulted in a switch from salt to CMA would be efficient if the transactions costs of implementing and enforcing the policy change were lower than $900 million. The fact that no such policy has been implemented suggests something about the size of transactions costs within government.

ASSESSING GOVERNMENT INTERVENTION

WHAT IS THE PROPER ROLE OF GOVERNMENT IN THE MARketplace? In our view, the issue of government intervention is largely empirical rather than theoretical. As Richard Nelson says in "Roles of Government in a Mixed Economy," in the *Journal of Policy Analysis and Management*, "There is no satisfactory normative theory regarding the appropriate roles of government in a mixed economy" (p. 556).

The Central Place of Transactions Costs The correct normative theory rests on transactions costs, and implementing this theory is largely a matter of significant empirical inquiry. The most important empirical question is this: what are the net benefits (if any) of any particular institutional arrangement? The only general statement that can be made about government intervention on efficiency grounds is that government should intervene where the costs of intervention are less than the benefits. No simple diagnostic scheme can indicate whether the costs of intervention will be less than the benefits for any general class of cases. Empirical analysis invites the analyst to consider the particular costs that govern each case.

The transactions costs concept invites the analyst to answer a key question: what are the transactions costs that affect the search for collective solutions, and in each case how are those costs affected by government laws and actions? The concept provides insights into the accumulation of institutional arrangements that exist in practice, and it avoids the endless quest for "failures" in either the private or the public sector that provide a basis for government intervention.

Transactions cost analysis calls attention to the characteristics of government that give it an advantage relative to other institutions in its ability to lower transactions costs. One important advantage is the power of coercion. Governments monopolize the use of force or coercive powers over a given territory. The government may change laws and use force to compel compliance with them; it may force payment for a good through taxation and it may use police powers to forbid or compel actions.

Coercive rules have benefits if they reduce transactions costs for individuals, as in expenditures on self-protection. If the government did not have coercive laws against theft, people would spend more money protecting themselves from thieves. They might hire security guards or buy more deadbolts and alarm systems. Aggregate expenditures on self-protection would be much higher if legislatures did not enact laws against theft and establish mechanisms to enforce them.

However, a coercive rule is not efficient just because it reduces the resources people spend. To be efficient, the reduction in cost must be greater than the transactions costs of enforcing the rule. Numerous transactions costs arise from the process of enforcing a rule: the cost of investigating violations of the rule, the cost of bringing suits alleging violations of the rule, the administrative costs of the agency that enforces the rule, the cost of the losses that occur due to undeterred violations of the law, and the public's cost of monitoring the government agency that enforces the rule.

Efficient and Inefficient Coercion Suppose that a society has no laws against theft and that the average person spends $50 on theft prevention per year and loses $100 per year to thieves. Suppose that a rule is proposed that will cost taxpayers an average of $70 a year in taxes (including all costs of enforcing the rule) and reduces losses from theft to $40 per person annually. The rule is efficient because the cost of self-protection is $150 whereas the cost of government intervention is $110 a year.

The government monopoly on coercive power is efficient because the cost of monitoring the government's use of force is lower than the cost of monitoring private bodies with the same powers. As an extreme example, consider a situation in which the Microsoft Corporation claims authority to imprison people it believed committed crimes on its property. Assume moreover that Microsoft's cost of doing this was considerably less than that of a public agency.

If we ignore the cost of monitoring Microsoft, rule by Microsoft might appear efficient. Microsoft would hire security guards and private "judges" and rent or purchase facilities to imprison violators at a lower cost than the government spends on police, real judges, and prisons.

But most Americans would be extremely reluctant to grant Microsoft this sort of police power because the firm might imprison people without sufficient evidence or imprison people who were simply disliked for other reasons. The cost of monitoring firms like Microsoft to ensure that they did not violate people's civil rights would be higher than the cost of monitoring a government police force, judiciary, and prison. Therefore, allowing Microsoft to enforce a criminal law would be inefficient.

The most general statement about government intervention is that it should perform those functions for which its powers of coercion give it an absolute advantage. Property law—dealing with fraud, extortion, contract, and torts—is perhaps the best example of a commodity whose provision by an entity with coercive powers is cheaper than provision of that commodity by an entity without such powers.

Transactions Costs and the Rule of Law The transactions costs approach tends to restore law to a more central role in the study of government. Chief among the market-enhancing measures that government undertakes are the creation of institutions that strengthen private property rights. As Douglass C. North and Robert P. Thomas note in their book, *The Rise of the Western World: A New Economic History* (p. 8), "Governments take over the protection and enforcement of property rights, because they can do it at lower cost than private volunteer groups." Some markets may be inefficient because the government fails to enforce some agreements within that market. In such cases, government intervention, through the strengthening of private property rights, may improve the market by reducing wasteful expenditures on self-protection and monitoring. These markets are inefficient, not because of any inherent "failures," but because the government has neglected to provide the appropriate institutional framework.

The transactions costs approach has been used to explain much of the structure of law. For example, the approach has been used to explain why injunctive relief is superior where bargaining is possible, but compensatory damages are more appropriate where bargaining costs are high. It also explains a good deal of contract behavior and contract law and has been used to explain government utility regulation. These do not fit well into the market failure concept but are easily analyzed through the transactions costs approach.

Similarly, disagreements about measurements, a type of transactions cost, may invite regulation by the state. Government efforts to supply uniform weights and measures have sharply lowered measurement costs, as have the efforts of private organizations such as the Chicago Board of Trade and the New York Stock Exchange, institutions to which government has, in part, transferred its coercive powers. This is not a case of market failure; rather, in some cases the government possesses advantages in obtaining consent for the use of uniform standards.

CONCLUSION

THE MARKET FAILURE MODEL ULTIMATELY FAILS BECAUSE IT is theoretically and empirically flawed. Like other deductive models, it is not derived from an adequate empirical base. As Coase has pointed out, there is little that can be learned from the study of theoretical optimal systems. Analysts who become enamored of "blackboard economics," in which equations are substituted for underpinnings, produce concepts that bear little correspondence to the actual social system. The world portrayed is one that exists only on the blackboard: "The analysis is carried out with great ingenuity, but it floats in the air."

readings

- Douglas W. Allen. "What Are Transactions Costs?" In *Research in Law and Economics*, edited by Richard O. Zerbe and Victor P. Goldberg. Greenwich, Conn.: JAI Press, 1991.
- Steven N. S. Cheung. "The Fable of the Bees: An Economic Investigation." *Journal of Law and Economics* 16 (1973): 11.
- Ronald H. Coase. "The Lighthouse in Economics." *Journal of Law and Economics* 17 (1974): 357.
- Louis De Alessi. "Error and Bias in Benefit-Cost Analysis: HUD's Case for the Wind Rule." *Cato Journal* 16 (1996): 129.
- Joseph Farrell. "Information and the Coase Theorem." *Journal of Economic Perspectives*, 1 (1987): 113.
- J. E. Meade. "External Economies and Diseconomies in a Competitive Situation." *Economic Journal* 62 (1) (1952): 54.
- Richard Nelson. "Roles of Government in a Mixed Economy." *Journal of Policy Analysis and Management* 6 (1987): 541.
- Douglass C. North and Robert P. Thomas. *The Rise of the Western World: A New Economic History*. Cambridge, U.K.: Cambridge University Press, 1973.
- Paul A. Samuelson. *Economics: An Introductory Analysis*, 6th ed. New York: McGraw- Hill, 1964.
- David L. Weimer and Aidan R. Vining. *Policy Analysis: Concepts and Practice*, 2nd ed. Englewood Cliffs, N.J.: Prentice Hall, 1992.
- Charles Wolf. "A Theory of Nonmarket Failure: Framework for Implementation Analysis." *Journal of Law and Economics* 22 (1979): 107.
- Richard O. Zerbe Jr. *A Foundation for Efficiency in Law and Economics*. Northampton, Mass.: Edward Elgar, 2000.
- Richard O. Zerbe Jr. and Howard McCurdy. "The Failure of Market Failure." *Journal of Policy Analysis and Management* 18 (4) (1999): 558.