



# Markets or Governments

*Choosing between  
Imperfect Alternatives*

*Second Edition*



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**Market Failure and Government Intervention**

The shortcomings of the market described in chapter 2 provide the most convincing rationale for attempts by government (that is, the nonmarket) to remedy them. This rationale can be influential even if political actors and decision makers are unaware of both the terminology and the theory of market failure. They simply perceive that operation of the market fails to accomplish something regarded as wholesome, desirable, or otherwise appropriate. Hence, government intervention may be advocated to remedy the perceived miscarriage. Whether these perceptions are valid or mistaken will not affect the advocacy, although their validity may be important to others who remain to be convinced. I shall return later to consider how public perceptions of the market's failures may be shaped in ways that distort, at least in the short run, the demand for nonmarket remedies.

The theory of market failure (including its distributional component) is sufficiently elastic to support particular regulatory interventions designed (by a lobbyist, or a legislator, or the executive branch) to favor a particular constituent. For example, price supports for agricultural output, as well as other forms of farm subsidies, have been justified on the

grounds that normal market prices fail to allow for the collective social benefits of preserving a healthy rural sector in the economy. Similarly, advocacy of substantial government support for scientific and technological research is based on the argument that such research yields external benefits that cannot be appropriated by those who are responsible for generating them. And public support for both education and health care proceeds from the presumption that these services are associated with various externalities, including distributional equity as well as moral, social, and ethical benefits for the community at large, above and beyond the benefits of those directly receiving the services.

An extension of this line of argument has led to advocacy and enactment of "voluntary" quotas to limit U.S. imports of automobiles and steel—a policy that is justified on grounds of social fairness and the collective importance of these industries for the security and well-being of the country as a whole. (The result has been a hidden tax on consumers, and temporarily high windfall profits in the automobile industry followed, not surprisingly, by continued erosion of its competitive position in international as well as domestic markets.)

The public choice paradigm of government behavior explains these occurrences as the result of formal collusion or informal collaboration between potentially benefiting constituencies (for example, the farm lobby, the science and technology community, the health and education lobbies, and the automobile and steel industries) and the cognizant government agencies and congressional committees.<sup>1</sup> In some instances, a line can be clearly drawn between the public choice explanation for preferential treatment and the public good justification. The public good argument focuses on the broad social justification for action that happens, incidentally, to favor a particular group (for example, affirmative action advocacy by the NAACP, or advocacy of protection for the steel industry or of the merchant marine

on national security grounds); the public choice position focuses instead on the motivation provided by the self-serving character of the preferential action itself, treating any attempts at broad social justification as disingenuous and contrived (import quotas and agricultural price supports are examples).

Yet the line between the two arguments is often blurred. Protecting American auto producers averts or alleviates serious hardship to families of auto workers who would be unemployed if Japanese cars (allegedly helped by unfair advantages from tax benefits and other subsidies) had full access to the U.S. market. Thus, the failure of the market to yield distributional outcomes deemed by the political process to be fair, or at least acceptable, may lead to preferential treatment favoring a particular group (for example, subsidies for farmers). From the standpoint of public good arguments, this is an instance of market failure—albeit one that stretches credibility. However, from the standpoint of the public choice argument, such preferment represents a failure or shortcoming of the *nonmarket*—that is, a miscarriage of public policy: society as a whole is demonstrably worse off, because the benefits realized by the favored group are less than the total costs imposed on the rest of society. We shall return to this dimension of nonmarket failure later.

Thus, the market's distributional shortcomings, as well as its actual or potential efficiency shortcomings, often lead to effective demands for nonmarket intervention to bring about more equitable or more efficient outcomes. That these intended results often do not ensue is explained by the theory of nonmarket failure.

### The Nonmarket: Demand and Supply Characteristics

The basis for distinguishing between the market and the nonmarket is that market organizations derive their principal revenues from prices charged for output sold in markets

where buyers can choose what to buy as well as whether to buy, whereas nonmarket organizations derive their principal revenues from taxes, donations, or other nonpriced sources. Although government is clearly the largest and most influential component, the nonmarket sector also includes foundations, state-supported universities, churches, PTAs, and the Boy Scouts. The typology of nonmarket failure developed here applies principally to the performance shortfalls of government but encompasses those associated with other nonmarket organizations as well. As discussed earlier, the absence of perfect and complete markets accounts for the various types of market failure. Similarly, nonmarket failures are due to the absence of nonmarket mechanisms for reconciling calculations by decision makers of their private and organizational costs and benefits with the costs and benefits of society as a whole. Nor, for reasons we shall suggest later, are prospects for the invention of suitable nonmarket mechanisms that will avoid nonmarket failure notably brighter than for creating and perfecting suitable markets whose absence leads to market failures. In other words, where the market's "hidden hand" does not turn "private vices into public virtues," it may be no less difficult to construct visible nonmarket hands that will turn public vices into public virtues.

Public policies intended to compensate for market shortcomings generally take the form of legislative or administrative assignment of particular functions to one or another government agency to produce specified outputs that are expected to redress the market's shortcomings. These outputs or activities are of four types: (1) regulatory services (for example, environmental regulation, radio and television licensing, interstate commerce regulation, food and drug control); (2) "pure" public goods (national defense, space research and development); (3) quasi-public goods (education, postal services, health research); and (4) administering

transfer payments (federal, state, and local welfare programs, social security, etc.). The value of these outputs is expressed in national accounts as exactly equal to the cost of the inputs used in producing them. But this accounting convenience implies nothing about the efficiency or the social or economic value of the activities themselves. Nor does it explain the reasons why these outputs and activities are likely to result in specific types of nonmarket failure. This explanation lies in the special demand and supply characteristics that, in degree or in kind, distinguish such nonmarket activities and outputs from those of the market. These distinguishing characteristics can be used to define nonmarket demands and supplies, and these in turn result in particular types of failures or shortcomings to which nonmarket activities are prone.

#### The Conditions of Nonmarket Demand

The conditions of demand may contribute to shortcomings in the delivery of government (i.e., nonmarket) services by inflating the demand for such services. Some of these conditions have grown stronger over time, while others are perennial. These demand conditions can be summarized under five headings.

##### *1. Increased public awareness of market shortcomings*

In recent decades, especially in the period from the 1930s to 1980, a dramatic increase occurred in public awareness of the shortcomings of the market. This change was due both to the acknowledged failures of market outcomes to be socially optimal (e.g., the growth of toxic wastes and pollutants, the visible exercise of monopoly power by both business and labor, increased population density and its effect on congestion and, hence, on the generally greater importance of externalities) and to wider dissemination of

information about these lapses. Instances of market failure have increased in frequency and in magnitude as economic activity has expanded. Such failures have also been the subject of vigorous and expanded activity by the information media, as well as by environmental groups and consumer organizations, to publicize these shortcomings. Increased public awareness of these shortcomings has understandably led to reduced tolerance of them.

### *2. Political organization and enfranchisement*

The increase in actual market failures, and in public awareness of them, has been reflected in and influenced by the organization and political enfranchisement of many groups and interests that formerly were less informed and less active in the political process, for example, women's groups, minorities, student groups, environmentalists, consumer groups, and nuclear power advocates and their opponents. And these groups have, especially in the 1960s and 1970s, pressed for governmental legislation, regulation, and other programs to remedy the failures of the market to produce outcomes desired by their advocates. Class action suits, contingent lawyers' fees, and judicial rulings and claims awards have provided additional impetus for nonmarket interventions to redress market shortcomings.

### *3. The structure of political rewards*

In the political process, which mediates these heightened public demands for remedial government action, rewards often accrue to legislators and governmental officials who articulate and publicize problems and legislate proposed solutions, without assuming responsibility for implementing them.

### *4. The high time-discount of political actors*

In part as a consequence of this reward structure, and of the short terms associated with elected office, the rate of

time-discount of political actors may be higher than that of society. The result is often an appreciable disjuncture between the short time horizons of political actors and the longer time required to analyze, experiment with, and understand a particular problem or market shortcoming, in order to see whether a practical remedy exists at all. Hence, future costs and future benefits tend to be heavily discounted or ignored, while current or near-term benefits and costs are magnified. The result is what Feldstein has called "the inherent myopia of the political process."<sup>2</sup>

A dramatic example of such myopia is provided by the pervasive growth in the 1960s and 1970s of large-scale redistributive social welfare programs in the United States and Western Europe, generously protected and boosted by automatic cost-of-living adjustments. Enactment of these programs was galvanized by a widespread disposition among legislators and executives in the Western democracies to overestimate the short-term benefits (perhaps especially the political benefits) of these programs and to underestimate their long-term costs. This myopia was reflected in the failure to realize in the 1960s that Medicare and Medicaid, designed to help the elderly and the poor, would lead to an explosion in health care costs and an enormous increase in the share of the gross national product absorbed by the health sector—from 5.3 percent in 1960 to 10.8 percent in 1983 and to 12.2 percent in 1990.<sup>3</sup> It was similarly reflected in a failure to realize that expanded welfare programs, such as Aid for Families with Dependent Children, although intended to provide help for poor families, might have the effect of seriously weakening the structure of the family.<sup>4</sup>

### *5. Decoupling between burdens and benefits*

Finally, a distortion of nonmarket demand often arises from the decoupling between those who receive the

benefits, and those who pay the costs, of government programs.<sup>5</sup> The classic free rider problem is a special case of decoupling: benefits are extended to all, or to specified groups, regardless of whether any particular member pays. Where benefits and costs are borne by different groups, incentives toward political organization and lobbying by prospective beneficiaries predictably lead to demands that may be both politically effective and economically inefficient. Examples are provided by agricultural price supports and subsidies in both the American and Western European economies, as well as other forms of protection for particular interests and sectors: tariffs; voluntary and mandatory import quotas; concessional loans and export credits to foreign countries to stimulate exports by the lending countries.

This decoupling between beneficiaries and victims can explain the absence of government intervention as well as its presence. For example, in the case of gun control in the United States, prospective beneficiaries, namely, the public at large, are numerous and dispersed, while those who would incur the costs of control are concentrated and well organized, notably, the National Rifle Association. The incentives of the dispersed majority may be too weak to overcome the resistance of the concentrated minority. Even though the aggregate social benefits from gun control may exceed the costs that would be imposed on the gunners, control by government does not occur. The political process may not provide an effective means by which the public beneficiaries could offer compensation to the gun enthusiasts to induce them to relinquish guns or to accept restrictive licensing of them.

Two different aspects of this decoupling phenomenon are worth distinguishing. What might be called "microdecoupling" arises where the benefits from an existing or prospective government program are concentrated in a particular

group, while the costs are broadly dispersed among the public, as taxpayers or consumers. The beneficiaries thus have stronger incentives, and may make politically more effective efforts, to initiate, sustain, or expand a particular program than the victims have, or make, to oppose it. The result may be a government program or regulation that is inefficient (aggregate costs exceed benefits), or inequitable, or both.

Examples include agricultural price supports in the United States mentioned earlier, the Common Agricultural Policy of the European Common Market, and those increases in Social Security benefits over the past three decades that have made the income of retirees more fully protected against inflation than that of most of the employed, tax-paying labor force.

The second type of decoupling—"macrodecoupling"—constitutes a fundamental and inherent problem of demand for government programs in Western democracies. Macrodecoupling is quintessentially a problem of political economy, rather than of economics. It is also a source of inefficiency over time, rather than at a particular point in time. Macrodecoupling arises because political power rests with the voting majority, while a minority provides most of the tax base. The result is an opportunity and incentive to expand redistributive programs since the "demand" depends on the majority, while the supply of revenues comes from the minority. Whereas microdecoupling implies that a well-organized minority can exploit the majority, macrodecoupling implies that the majority can exploit the minority.

The result of macrodecoupling, in the absence of restraint by the majority, can be erosion of the mainsprings of investment, innovation, and growth, if the lower-income majority's temptation to redistribute before-tax income weakens the upper income minority's incentive to invest and innovate. It may be equally true that, unless the upper-income

minority's affluence and the resulting distributional disparities are restrained, social disharmony, resentment, and antagonism will not be!

The enormous expansion of entitlement and other social programs in the United States (and in Western Europe) since the mid-1960s is, to some extent, a reflection of this decoupling: student loans and scholarships; subsidized housing programs for low-income families; Medicaid and Medicare; food stamps and legal aid to indigents; disability insurance; comprehensive employment and training programs; urban transit; etc. The results of this expansion have been extraordinary. In 1980, 36 million Americans received monthly Social Security checks. Benefits were received by 22 million from Medicaid, 28 million from Medicare, 18 million from food stamps, 15 million from Veterans' programs, and 11 million from Aid for Families with Dependent Children (AFDC).<sup>6</sup> By 1992, these numbers had risen still further: Social Security 44 million, Medicaid 36 million, Medicare 30 million, food stamps 26 million, AFDC 14 million.<sup>7</sup> Feldstein cites an estimate that perhaps half of the U.S. population depends in whole or in part on federal aid in one form or another!<sup>8</sup>

Both types of decoupling may contribute to "excess" demand for government activities (programs, regulations, redistribution)—excess either in the sense that they entail greater social costs than benefits, or that they are not sustainable because they diminish incentives for productivity and growth in the economy.

That many of the conditions discussed above may result in distortions of nonmarket demand does not imply that all increases in nonmarket demand represent distortions. For example, nonmarket demand may be expected to rise with real income. To the extent that nonmarket goods are "superior" goods—that is, goods with a high income elasticity of demand (for example, parks, museums, public recreational

facilities)—their demand will rise more than in proportion to income growth. To the extent that expanded education, as well as real income, results in greater empathy for the needy, government transfer programs may also be expected to grow.

Nevertheless, conditions of demand in Western democracies can often lead to profound distortions in politically effective demands for government action or inaction. The principal culprits are (1) the often excessively high time-discounts of elected officials, resulting from the relentless pressure of the relatively short intervals between election campaigns; and (2) the decoupling between those who benefit from, and those who pay for, government programs, frequently resulting in stronger incentives to expand than to confine government programs. As a result, government programs may be initiated or expanded even though they are inefficient in a microeconomic sense (e.g., tariffs, agricultural price supports), as well as inequitable in conferring special gains and privileges on politically effective groups, while imposing greater costs on politically less effective ones. Other programs may be expanded to a level where they become inefficient in a dynamic sense (e.g., entitlement programs) by undermining the incentives on which the economy's longer-term growth depends.

#### Perceptions and the Demand for Nonmarket Activities

The demand characteristics previously described relate to public perceptions of the inadequacies and shortcomings of market outcomes. The correspondence between these perceptions and the realities of market failure, including distributional failure, may or may not be close. As the British philosopher Coddington has observed, perceptions do not represent knowledge, or even "knowledge deficiencies," but rather "knowledge surrogates." Such surrogates are more

analogous to conjecture, wishes, or fears than to reality, or even to genuine uncertainty about the complex structure of reality.<sup>9</sup> Various influences can operate to distort perceptions and increase their remoteness from the "facts." For example, the incentives of the news media, political actors, and special interest groups often lead them to magnify newsworthy instances of actual market failure (e.g., collusion, restricted entry, corruption, pollution, monopolistic profits) and to highlight the frequent inequity of market outcomes, both in itself and as a major source of prevailing or potential (social) instability. Part of the distinction arises simply because problems, shortcomings, and miscarriages are intrinsically more dramatic and eye-catching than is satisfactory, or even successful, performance. Bylines are more often captured by dramatizing a disquieting event than by placing it in a balanced perspective. A second element contributing to distortion probably lies in the self-selection bias that animates publicists. A far larger proportion of their members than of other professional groups, or of the public at large, tends to be critical, if not hostile, to prevailing practices and policies.<sup>10</sup>

Another distorting influence can arise from pressure groups whose special interests may be furthered by government intervention.<sup>11</sup> As a result, such groups often undertake politically effective efforts to emphasize and exaggerate both the shortcomings of the market and the social benefits to be obtained from government action. Examples are provided by the political pressure of teachers' unions in favor of increased government funds for education, the trucking industry and teamsters' union in favor of various restrictions to limit competition in surface transportation, and the airline industry (at least, the competitively weaker firms) in its prior opposition to deregulation of routes and fares.<sup>12</sup>

A further distorting effect arises from the tendency of government—especially, but not exclusively, the bureau-

cracy—to be hypersensitive to market shortcomings in the optimistic belief that it (the bureaucracy, or the legislature) possesses the means to remedy them. That the Occupational Safety and Health Administration tends to seek and even exaggerate potential dangers presented by the workplace, or that the Food and Drug Administration (FDA) tends to be more concerned about the dangers of allowing pharmaceutical products on the market too soon rather than too late, reflects these agencies' own inevitable occupational hazards.

In Europe and other parts of the world, to a much greater extent than in the United States, a third influence has tended to exaggerate the market's shortcomings—namely, the intellectual and cultural legacy of socialist ideology in Western European political parties and trade unions, as well as in the Third World. The basic socialist premise that capitalism is inherently prone to instability, exploitation, and inequity provides a strong predisposition to seek and to find confirmatory evidence. The power of a self-confirming hypothesis is not less in this context than in others.

It is noteworthy and significant that this disposition, pervasive and potent in the period from 1950 through the 1970s, dramatically changed in the 1980s. Conservative administrations, oriented toward restraints on government and increased scope for the functioning of markets, produced a sharp reversal in the direction of public policy in the United States, the United Kingdom, and Germany. Even the socialist government of François Mitterand in France adopted policies that encourage and endorse capitalist markets (for example, in removing or reducing wage and price controls, privatizing businesses that had only recently been nationalized, and acknowledging the benefits of competition and free markets). Within the emerging European Community, national barriers to the effective operation of capital, labor, and product markets are being pervasively removed,



although the barriers facing external markets seem likely to be maintained if not raised. And in the formerly Communist Second World, market-oriented, systemic reforms are uniformly endorsed, although progress in implementing them has differed widely in China, Eastern Europe, Russia, Ukraine, and the other republics of the former Soviet Union.<sup>13</sup>

Whether these changes in policy direction will be permanent remains to be seen. Even if they endure, the types of distorting influences described earlier sometimes result in presumptions that certain events are typical and frequent, when they are actually rare. In statistical terminology, events that are "outliers" are instead interpreted as though they were "averages"—hence, representatives of the central tendencies of the underlying phenomena. Where this process operates, the result is that perceived estimates of market failure may be systematically different from their true values, because the triggering or newsworthy event, though it is actual, does not represent the central tendency or relative frequency it purports to.

#### Perceptions and Reality: A Formal Illustration

This view of the process by which perceptions may diverge from reality can be expressed formally by specifying a perceptions function of the following simple form:

$$\hat{Q} = Q_a + Q_t,$$

where  $\hat{Q}$  is the perceived level of market failure,  $Q_a$  is the actual or true level, and  $Q_t$  is a transitory disturbance introduced by the several types of distorting influences previously discussed. Consequently, the disturbance term,  $Q_t$ , may not have a zero mean, but instead may be systematically biased.<sup>14</sup> Nonmarket demand will be excessive because

it responds to the perceived market failure,  $\hat{Q}$ , rather than the actual one,  $Q_a$ . An example of the  $Q_t$  distortion is provided by the media's depiction of the imperfect working of the "market" for admissions to American medical schools. The *New York Times*, in a featured story several years ago, reported that there were 340,000 applications for only 16,700 places in first-year medical classes at the nation's 126 medical schools. Based on these statistics, the conclusion was reached that "the chance of getting into medical school is about 1 in 21 nationwide."<sup>15</sup>

The striking and hence newsworthy implication of the story was that the system was grossly imperfect, that the outcome was (presumably) both inequitable and inefficient (because applications and career choices were presumably not based on awareness of such extraordinarily unfavorable odds), and that something ought to be done about it (by implication, through government regulation).

The *Times* article failed to report that, based on data from the preceding year, each medical school applicant filed an average of 9.2 applications! On this basis, the actual chance of admission to medical school would be about 1 in 2.2; 45 percent of the applicants could expect to be admitted. The accurate figures were distinctly unnewsworthy!

It may be conjectured that public "perceptions,"  $\hat{Q}$ , of the system were influenced as much by the  $Q_t$  distortion in the *Times* article as by the "true" value,  $Q_a$ , of the admissions probabilities.<sup>16</sup>

It is worth noting that, of the several distorting influences described earlier, two may generate countervailing forces that can offset and perhaps reverse the tendency to exaggerate market failures. For example, pressure groups that seek government intervention to remedy market shortcomings may be neutralized or outmatched by opposing groups that prefer the market's unregulated outcomes: industry pressure groups that expect to benefit from regulatory in-

intervention may be opposed by consumer groups that seek to preserve competition (and vice versa).

And the media, if free and uncontrolled, may find newsworthiness in the miscarriages of government no less than of the marketplace: corruption, nepotism, waste, conflicts of interest, and so on. Examples are provided by Watergate, Abscam, Medicaid fraud, Defense Department procurement of \$7,500 coffee brewers and \$500 wrenches, and the manifold other instances of waste in government procurement. Government failures, as well as market failures, thus provide opportunities for newsworthy exaggerations. Hence, the disturbance term,  $Q_i$ , may assume negative, as well as positive, values. To the extent that the newsworthy is simply whatever is unusual, the result may be a tendency to oscillate between overemphasis on market failures and exaggeration of government failures, rather than to describe either of them accurately. However, if the press and the other media are more disposed to seek and expose the vagaries of the market than those of government, the oscillations will not average out to the true value,  $Q_a$ , in the long run.<sup>17</sup>

Thus,  $Q_i$  may be greater than zero at one time and less at another. Perceptions will be off the mark in both cases, but in different directions. Until at least the late 1970s, the experience in the United States and Western Europe suggests that influences tending to exaggerate perceptions of market failure seem to have been politically more influential than those in opposition. Since 1980, this bias seems to have been redressed.

In sum, if the process that nurtures perceptions of market failures yields distorted estimates, then the demand for nonmarket intervention and activities can be excessive, thereby leading to various nonmarket failures and government deficiencies. Underlying this conclusion, of course, is the assumption that, in democratic systems, the political pro-

cess generally responds to public perceptions. Consequently, if perceptions are distorted, the response of government will be accordingly deformed.<sup>18</sup>

Against this background of nonmarket demand conditions, the demand for nonmarket activities can be presumed to rise with perceptions of market failures—specifically, with the perceived existence of externalities, valued public goods, monopolistic markets, market imperfections, and distributional inequities.<sup>19</sup>

### The Conditions of Nonmarket Supply

As with the conditions of nonmarket demand, nonmarket supply is associated with several characteristics that distinguish it from market supply and contribute to nonmarket failures:

#### 1. *Difficulty in defining and measuring output*

Nonmarket outputs are often hard to define in principle, ill-defined in practice, and extremely difficult to measure as to quantity or to evaluate as to quality. This, of course, is why nonmarket outputs are measured in the national accounts as the value of the inputs used in producing them. Nonmarket outputs are usually intermediate products that are, at best, only proxies for the intended final output—for example, restrictions or prohibitions on the distribution of drugs and foods by the FDA; licenses issued or rejected by the Federal Communications Commission; forces and equipment developed and employed by the military services; and cases processed and payments disbursed by health and welfare agencies. In each instance, the extent to which the intermediate nonmarket product contributes to the intended final output is elusive and difficult to measure.

The quality of nonmarket output is especially hard to ascertain, in part because information is lacking about out-

put quality—information that would, in the case of marketed outputs, be transmitted to producers by consumer behavior and choice. Consider, for example, the difficulty of determining whether the quality of education, or welfare programs, or environmental regulation, or food and drug regulation, is better or worse now than five or six years ago.

Of course, difficulty of measurement varies widely among nonmarket outputs. For example, the U.S. Postal Service can be readily compared in its performance (with respect to costs and service) with Federal Express; public schools can be compared, although not without difficulty, with private and parochial schools; and police departments can be compared, also with some difficulty, with private security agencies.

More typically, however, appropriate metrics for nonmarket outputs (e.g., defense, regulatory activities, social welfare programs) are elusive and arguable. In general, measuring nonmarket outputs by their inputs is accepted because direct measurement of the output value is so difficult.

### 2. *Single-source production*

Nonmarket outputs in government are usually produced by a single agency whose exclusive cognizance (monopoly) in a particular field is legislatively mandated, administratively accepted, or both (for example, the regulatory agencies, the National Aeronautics and Space Agency's role in space, and the public school system, with only very limited competition provided in the latter case by private and parochial schools). It is rare that this exclusivity is contested. Where it is (for example, between the air force and the army in providing some forms of battlefield air support), resolution is frequently on grounds unrelated to output efficiency or quality. Thus, the absence of sustained competition contrib-

utes to the difficulty of evaluating the quality of nonmarket output.

### 3. *Uncertainty of production technology*

The technology of producing nonmarket outputs is frequently unknown, or, if known, is associated with considerable uncertainty and ambiguity. An example of uncertain technology in the educational domain is provided by the Coleman report and other studies that evaluate student performance by reference to standardized test scores. These studies leave very little in the variance of student academic performance to be accounted for by such variables as class size or expenditures per pupil or teacher/pupil ratios, once proper allowance has been made for the social and economic status of student and family. Yet we know very little about how to "produce" education, and indeed what precisely the product consists of. For example, there is disagreement as to whether the cognitive and verbal skills measured by the standardized tests constitute the proper set of educational objectives to be sought. Even if this were agreed upon, our understanding is remarkably limited concerning the mix of curriculum, types and training of teachers, classroom or field experience and application, learning by doing, and the other ingredients of educational technology best suited to providing the educational product.

In the national security domain, where it is commonly assumed that technology is both advanced and well understood, we have at best only a limited understanding of the technical (production-function) relationships between inputs (of military equipment, manpower, training, logistics support, command, control, communications, and intelligence) and the intended final output of national security. More narrowly and more technically, the mix of strategic defensive and offensive capabilities that is best suited to

producing efficient and effective deterrence is poorly understood and widely disputed.

More insubstantial still is our understanding of the technologies associated with producing such other nonmarket outputs as social welfare through the provision of welfare services and transfer payments (without thereby creating perverse effects on labor supply and on the psychological well-being and motivations of recipients), or providing food and drug regulations that adequately and properly allow for the risks facing potential consumers (without thereby introducing sharply perverse incentives for further research and development in the pharmaceutical industry).

#### 4. *Absence of bottom-line and termination mechanism*

Nonmarket output is generally not connected with any bottom line for evaluating performance comparable to the profit and loss statement of market output. Closely related to this absence of a bottom line is the absence of a reliable mechanism for terminating nonmarket activities when they are unsuccessful.

Thus, many of the conditions and characteristics associated with the supply of nonmarket goods and services may contribute to various shortcomings in their production. This does not gainsay the fact that the government is predominantly staffed by conscientious individuals and agencies principally motivated to do a competent job, although the conditions of nonmarket supply may sometimes cause this motivation to go awry.

With these characteristics of nonmarket supply as background, it seems reasonable to posit the existence of a functional mechanism for nonmarket activities analogous to the positively sloped supply curve for market activities. On this premise, the supply of nonmarket outputs (measured, *faute de mieux*, by the costs and budgets expended in producing them) will tend to rise as average government wage rates

(represented, say, by average civil service pay scales) rise and as tax yields rise. When government pay scales rise in relative terms, staffs of government agencies will grow and the total costs they expend (i.e., the standard metric for nonmarket supply) will rise. Also when tax yields rise and public revenues increase, we may assume that aggregate nonmarket supply will rise while absorbing the added revenues. (Conversely, such reforms as California's Proposition 13, and other limits on taxation, will tend to restrict and discourage nonmarket activities.)

Finally, it seems reasonable to assume that the supply of nonmarket activity is positively affected by national income and by government revenues, these being generally correlated with one another. As national income rises, yielding greater public revenues, the supply of (i.e., costs expended on) nonmarket activities will tend to rise in response. New programs will be generated, or existing programs expanded, to absorb the additional resources that have become available. Clearly, some nonmarket activities are more likely to expand than others; for example, perhaps health and educational and environmental programs are more likely to grow with increased national income than are redistributive welfare programs, and the reverse is likely to happen when income falls.<sup>20</sup> Nevertheless, there will probably be a tendency for aggregate nonmarket supply to rise and fall as income rises and falls.

#### Notes

1. Milton Friedman refers to these collaborating parties as the "iron triangle" of public policy. See Friedman (1984). The same line of argument underlies George Stigler's theory of government regulation (see Stigler, 1971).

2. Feldstein (1980, 6).

3. *Universal Health Care Almanac* (1992).

4. Ibid., p. 4.
5. See Downs (1965).
6. See Feldstein (1980).
7. 1992 data obtained from the Department of Health and Human Services, and the Department of Agriculture. Veterans' data comparable to the 1980 figures were not available for 1992.
8. Feldstein (1980).
9. See Coddington (1975, 151–163), cited in Kantor (1979, 1429).
10. Cf. Rothman and Lichter (1985).
11. See also Stigler, 1971.
12. Describing the point in its French manifestation, Peyrefitte (1976, 319) makes the following comment: "Public administration belongs to civil servants. But additionally, religion belongs to the clergy, health to physicians, education to teachers, intelligence to intellectuals, and chairmanships to Polytechniciens."
13. A compelling testimonial to these dramatic changes is summarized in the following assessment by a commentator who in the past has not usually favored promarket positions, Robert Heilbroner (1989): The Soviet Union [sic], China, and Eastern Europe have given us the clearest possible proof that capitalism organizes the material affairs of humankind more satisfactorily than socialism; that however inequitably or irresponsibly the marketplace may distribute goods, it does so better than the queues of a planned economy.
14. This is not inconsistent with the view that, even if  $Q_i$  were equal to zero, society might still be more concerned with (and choose to devote more resources to) the outliers than with the average value. A skewed social-loss function might well be applied to a normal distribution of events or outcomes having a zero mean. However, in this case, society would be proceeding on the basis of accurate, instead of distorted, information: perceptions and reality would be identical. With the previously described mechanism, they would not be.
15. See "Odds against Medical-School Admission Exaggerated," *New England Journal of Medicine*, May 1, 1980.
16. The nuclear reactor accident at Three Mile Island in 1979 provides another example. As a result of the news media's treat-

ment of the accident, the public's perception of the chance of a serious meltdown in the reactor's core was probably as high as 10 percent, or at least 1 percent. In fact, the chance was probably never greater than .001–.0001. If we denote the negative externalities associated with an actual meltdown as  $X_a$ , and assume that  $X_a = .0001$ , then the perceived externalities,  $X$ , given these probability assumptions, would be  $X_a(10^{-2})$ , and the transitory distortion represented by  $X$ , would be 99 times the true value,  $X_a$ .

17. As an indication that this premise may, in fact, be warranted, see Rothman and Lichter (1985).
18. See appendix A for further discussion of the demand for nonmarket activities and how demand is influenced by perceptions of market failures.
19. Also, see appendix A for further discussion of the nonmarket demand function and its interaction with nonmarket supply.
20. See appendix A for further discussion of the nonmarket supply function.