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The Theory of Government Failure

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This article outlines a theory of government failure that parallels the more well-established theory of market failure. It builds on the work of the public choice school concerning the behaviour of governments under the assumption that all relevant agents pursue their self-interest. It examines the theoretical consequences for efficiency and equity of three kinds of government activity: provision, subsidy and regulation. The conclusion is reached that all three may create inefficiency and inequity, but that the form and magnitude of the failure will differ with the type of activity; hence it is important that the three are distinguished. It is also emphasised that the extent of government failure in each case (and whether it is greater or smaller than the corresponding areas of market failure) is ultimately an empirical question, not a theoretical one.

The theory of market failure is well established. The principal finding of this theory is that, under certain conditions, the production and distribution of a commodity through a competitive market in which all the relevant agents are pursuing their own self-interest will result in an allocation of that commodity that is socially inefficient. Hence Adam Smith's 'invisible hand' will not always work: competitive markets with self-interested agents can fail as an engine of efficiency. It is also widely agreed that market allocations can fail in another sense: their distributive outcomes are unlikely to be socially just or equitable. However, here the relevant propositions are based more on appeals to common-sense than to a well-developed theory.

Recent years have seen the growth of the so-called 'public choice' school, exploring the implications for the behaviour of governments and governmental institutions of the assumption that all the relevant agents pursue their own self-interest. However, few writers have tried to synthesize this literature to construct a theory of government failure that parallels that of the market. In fact, to my knowledge, only one person has attempted it. In 1979 Charles Wolf Jr published an article in the *Journal of Law and Economics* entitled 'A Theory of Nonmarket Failure'.[1] This was followed by several articles and book chapters developing the argument, culminating in a book-length treatment

[1] Charles Wolf Jr, 'A Theory of Nonmarket Failure', *Journal of Law and Economics*, 22 (1979), 107–39.

in 1988.[2] The book contained a more detailed exposition of the basic ideas, together with a review of some of the empirical evidence concerning the relative performance of market and nonmarket alternatives.

Two recent reviews of the public choice literature ignore Wolf's contribution completely, failing even to list him in the index.[3] Too much should not be made of this; the same reviews do not mention the work of Hayek either, arguably the greatest economist to address the issue of government failure. However, it is probably fair to say that Wolf's work has not been particularly influential. This is not because the task is an unimportant one; on the contrary, a synthesis of this kind is long overdue. Rather, I believe it is because Wolf's analysis, although pioneering, was also in parts confusingly expressed and incorrectly formulated; it was also less than complete. This article is an attempt to demonstrate this and, by building on that demonstration, to construct an alternative formulation of the theory of government failure that is, I hope, clearer, analytically more precise and more comprehensive.

The article begins with a summary of the theory of market failure. I have gone into this in some detail because it is the starting point for the exercise with respect to the theory of government failure, as well as the focus of comparison for that theory. The article continues with a review of the principal features of Wolf's theory of government failure. In the course of this, it will become apparent that, although Wolf is undoubtedly referring to important phenomena, his theoretical synthesis does not always clarify the argument or cover all the relevant ground. Accordingly, an alternative formulation of the theory of government failure is offered, which, although itself undoubtedly in need of refinement, perhaps offers a better basis for subsequent development than Wolf's version.

One caveat. In exposition of the theory, I have referred to some of the theoretical literature on public choice and government failure. Where appropriate I have also mentioned some of the empirical evidence concerning the predictions of that literature. However, the article does not claim to be – indeed, given the magnitude of the task, could not hope to be – a comprehensive review of all the relevant findings, theoretical or empirical.[4] Rather it provides an organizational framework into which these findings can be fitted: a framework that at the least may have some heuristic value and, more ambitiously, may provide a spring-board for further development of the theory.

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[2] Charles Wolf Jr, *Markets or Governments: Choosing Between Imperfect Alternatives* (Cambridge, Mass.: MIT Press, 1988).

[3] D. C. Mueller, *Public Choice II* (Cambridge: Cambridge University Press, 1989); I. McLean, *Public Choice: An Introduction* (Oxford: Basil Blackwell, 1987).

[4] As indicated in the previous footnote, such reviews exist elsewhere. The most comprehensive, and one which has greatly facilitated the writing of this article, is Mueller, *Public Choice II*. However, this is quite technical in places. McLean, *Public Choice*, is a good non-technical introduction to the literature. Also useful is N. Bosanquet, *After the New Right* (London: Heinemann, 1983), particularly for the discussions of authors ignored by the other two, such as Hayek and Milton Friedman.

THE THEORY OF MARKET FAILURE

The theory of market failure constitutes the core of welfare economics as the latter is conventionally considered.[5] By far the largest part of this is concerned with establishing the conditions under which competitive market allocations will be inefficient. Analyses of this kind are often accompanied by a nod in the direction of social justice or equity, usually taking it for granted that pure market allocations are unlikely to be equitable; however, the principal emphasis is almost invariably on efficiency.[6]

Efficiency is defined by economists in a number of ways, including 'X-efficiency', allocative efficiency and dynamic efficiency. X-efficiency is close to what most non-economists think of as efficiency: the production of a commodity at the minimum possible cost in terms of the resources used. If resources are wasted or employed in a profligate fashion in the production of a commodity, then there is X-inefficiency.

Allocative efficiency is a rather broader conception. It includes X-efficiency, in the sense that if the production of a commodity is X-inefficient, it will also be allocatively inefficient. However, allocative efficiency also takes account of whether the commodity concerned meets the wants of its consumers as effect-ively as possible: that is, it includes what is sometimes termed effectiveness. More formally, an allocation of resources is defined as allocatively efficient if it is impossible to re-allocate resources in such a way as to make one or more persons better off without making someone else worse off: a definition that is also known (after its originator) as Pareto-efficiency. Another formal version of the same idea is to define an allocatively efficient level of production of a commodity as that level for which the difference between the 'total social benefits' from the consumption of the commodity and the 'total social costs' of its production is as large as possible.[7]

Dynamic efficiency is a less well-specified concept. At the level of the

[5] For a fuller exposition of the theory of market failure and its application that is accessible to non-specialists, see J. Le Grand, C. Propper and R. Robinson, *The Economics of Social Problems*, 3rd edn (London: Macmillan, 1991). For those with a little more economics training, another useful text is N. Barr, *The Economics of the Welfare State* (London: Weidenfeld and Nicolson, 1987).

[6] There are of course other social objectives or values against which market performance can be judged, such as the preservation of liberty or the promotion of a sense of community. Welfare economics textbooks usually give these even less attention than equity; a limited exception is Le Grand, Propper and Robinson, *The Economics of Social Problems*. An important recent discussion of the ability of markets to attain a broader set of social objectives can be found in D. Miller, *Markets, State and Community* (Oxford: Oxford University Press, 1989). See also some of the contributions to J. Le Grand and S. Estrin, eds, *Market Socialism* (Oxford: Oxford University Press, 1989), particularly those by Miller and R. Plant.

[7] Strictly, this second definition of allocative efficiency is equivalent to 'potential' Pareto efficiency whereby an allocation of resources is efficient if it is impossible for the gainers from any change potentially to compensate the losers and still remain better off. For further discussions of different definitions of economic efficiency (including Pareto-efficiency) and of the values they imply, see J. Le Grand, 'Equity vs Efficiency: The Elusive Trade-off', *Ethics*, 100 (1990), 554–68, reproduced as chap. 3 in J. Le Grand, *Equity and Choice* (London: Harper Collins, 1991).

enterprise or firm, it is usually taken to refer to the capacity of firms to innovate and thereby to lower their costs of production or to find better ways of meeting the wants of consumers. At the level of the nation-state, it is conventionally identified with the rate of economic growth: the higher the growth rate, the more dynamically efficient the economy.

The theory of market failure usually refers to markets' inability to achieve allocative efficiency, although in so far as the latter includes X-inefficiency, the theory also includes market failure in this sense as well. The theoretical discussion of markets' ability to achieve dynamic efficiency is less well developed, partly because the concept of dynamic efficiency itself is imprecisely defined and partly because of the formidable problems inherent in the analysis of dynamic systems.

The theory implies that the allocation of a commodity through a competitive market will be allocatively inefficient if the market for the commodity concerned possesses some or all of a number of characteristics. Three of these are generally singled out as being of particular importance: externalities and public goods, increasing returns to scale and imperfect information.[8]

Externalities arise when a third party, who is otherwise in no way involved in the relevant market transaction, is affected by either the production or consumption of a commodity. If the third party is affected positively, the externality is termed an external benefit; if negatively, an external cost. Standard examples of commodities with external benefits are immunization programmes and house improvements. Standard examples of external costs are environmental pollution and traffic congestion.

An extreme case of external benefits are so-called public goods, where it is impossible for one person to benefit from consuming the good without simultaneously benefiting everyone else in the community. Common examples here are street lighting, national defence and the forces of law and order.

Markets with self-interested agents will tend to underprovide activities with external benefits relative to the allocatively efficient level because the agents undertaking the activity concerned cannot capture those benefits. Hence they will not take them into account when making their decisions about the appropriate level of the activity; they will only consider the benefits to themselves, and this is likely to result in a lower level of the activity than is socially efficient. For similar reasons, markets will tend to overprovide activities with external costs. By definition the external costs of an activity will not impinge on agents undertaking the activity; they will not take them into account when deciding upon how much of the activity to undertake. In consequence there will be a greater level of the activity than allocative efficiency would require.

[8] Although these are the sources of market failure that are currently receiving most attention in the welfare economics literature, there are others that have attracted attention in the past and are still of considerable practical relevance. For example, one that will be familiar to anyone who has encountered elementary economics texts is the 'corn' or 'hog' cycle: the tendency of markets with long production times, such as those for agricultural commodities, to be unstable, with continuous under- and over-shooting of the efficient level of production.

Increasing returns to scale occurs when the average cost of production falls as the scale of production increases. Standard examples include public utilities and transport systems. The presence of increasing returns to scale gives a competitive advantage to large firms which will therefore tend to dominate the market and eventually to monopolize it. Although the result might be X-efficient, in that the commodity concerned would be produced at minimum cost, unless the monopoly can exercise price discrimination, it would not be allocatively efficient: too little would be produced and what was produced would be sold at too high a price.

The problem of *imperfect information* concerns the existence of imbalances of information between the consumer and the producer. The classic example here is medical care. Doctors usually know more than their patients about the latters' state of health and are therefore in a position to exploit that knowledge by, for example, telling patients that they need more health care than they actually do. In this case, if, as in most markets in medical care, doctors' incomes depend on the amount of services they provide, medical care will be oversupplied relative to the efficient level. This situation will be compounded if patients are insured, for neither they nor their doctors will have any cost incentive to restrict treatment. This is the problem of moral hazard.[9]

The imbalance of information is not always in the producers' favour. The case of insurance also provides an example where consumers may know more than producers. People seeking insurance usually know more about the specific risks they face than insurance companies. In assessing risks and setting premiums, insurance companies will therefore tend to operate on averages. In consequence, premiums will be too high for some of the lower risks, and hence insurance will be underconsumed. This is the process known as adverse selection.

Such are the broad outlines of the theory of market failure to achieve efficiency. Most economists would accept that the phenomena concerned do represent problems for the theoretical efficiency of markets, although they would differ as to the magnitude of these effects in practice. More especially, they would disagree as to whether their size was sufficient to warrant government intervention – and the risks for efficiency which *that* would create.

Finally, equity. On the whole economists have not attempted to enter into the large philosophical issues involved in defining equity.[10] Instead they have concentrated on two dimensions. The first concerns the distribution of the commodity concerned, whether it is distributed equally or, less ambitiously, whether everyone can obtain at least a minimum standard of consumption

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[9] If insurance companies had sufficient information concerning the patient's condition, they could control the moral hazard problem by determining the efficient level of treatment beforehand and only re-imbursing up to that level. However, they have difficulty doing this precisely because of the information difficulties associated with medical care.

[10] There are some notable exceptions, reviewed in Le Grand, *Equity and Choice*.

of the commodity. The second concerns the overall ability to purchase commodities: the distribution of income and wealth or, more generally, of command over economic resources.

It is in a sense obvious that markets will not necessarily achieve complete equity according to any of these criteria. The fact that people will almost inevitably come to the market with different amounts of resources from which to generate income will generate inequality in income; this in turn will generate inequalities in the consumption of all commodities and a failure to meet a minimum standard of consumption of some. What is more disputable is whether the inequities thereby generated will be greater than any created by government intervention. This again brings us back to the theory of government failure, which we must now consider.

WOLF'S THEORY OF GOVERNMENT FAILURE

Wolf identifies four reasons why government institutions with self-interested agents may fail in a fashion that parallels market failure. The first three of these are concerned with efficiency: 'disjunction between costs and revenues', 'internalities and organizational goals', 'derived externalities'. The fourth is 'distributional inequity'. The last is not really addressed on a theoretical level. I shall therefore concentrate on the first three.

Disjunction between Costs and Revenues

Wolf describes this as follows. Unlike markets, which, through the price mechanism, link the costs of producing an activity to the income that sustains it, nonmarket activity is financed by nonprice sources, such as taxes paid to government, or, in the case of nongovernmental nonprofit organizations, from donations or grants.

The absence of this crucial link separates the adequacy and value of nonmarket output from the cost of producing it. The disjunction between them means that the scope for misallocation of resources is enormously increased. Where the revenues that sustain an activity are unrelated to the costs of producing it more resources may be used than necessary to produce a given output, or more of the nonmarket activity may be provided than is warranted by the original market-failure reason for undertaking it in the first place.

In addition, if 'technological possibilities exist for lowering cost functions, raising productivity, or realizing economies of scale, these opportunities are more likely to be ignored or less likely to be exploited by nonmarket than by market activities'.[11]

The reference to the value of output at the beginning of the first passage quoted implies a failure to achieve allocative efficiency; the rest of the arguments quoted concern both X-inefficiency and dynamic inefficiency. The disjunction

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[11] Wolf, *Markets or Governments*, pp. 63–4.

between costs and revenues is thus supposed to create inefficiency of all three kinds.

However, there are two difficulties with this way of formulating the problem. First, not all forms of government intervention involve a complete disjunction between revenues and costs. The activities of British nationalized industries (those that still exist) or the US Post Office, for instance, are cases where a product is produced by a government organization but marketed in a fashion similar to a private market. There are reasons why such organizations may be inefficient, some of which we shall discuss below, but they are not to do with the disjunction between costs and revenues; for such a disjunction does not exist. Even outside nationalized industries, governments frequently derive income directly from some of their services, obvious examples being the rents on council housing and the charges levied for certain local government services in Britain.[12] The income from rents and charges may not always cover costs, and in that sense there may be a gap between costs and revenues that has to be met from other sources; but this does not automatically imply that there is no link between one and the other.

Secondly, even if there is a disjunction between revenues and costs, this does not necessarily mean that there will be inefficiency. There may be incentive structures within the organizations concerned so as to ensure that managers pay attention to cost minimization, for example. Nor is it obvious that organizations where no such disjunction exists, such as private firms, will be auto-matically efficient, particularly if such organizations are large; for most employees there will be no direct link between their activities and the revenues of the firm and hence no immediate incentive for efficiency.

In short, the question is not really one of the disjunction between revenues and costs as such, but the impact of any disjunction that may exist on the incentives of the relevant agents. Wolf does deal with this issue, but under the next heading: the rather confusingly titled 'internalities'.

Internalities and Organizational Goals

Despite the similarity of terminology, government failure associated with intern-alities is apparently not intended to mirror the market failure associated with externalities. Wolf defines internalities as 'the goals that apply within nonmarket organizations to guide, regulate, and evaluate agency performance and the performance of agency personnel'.[13] Because public agencies lack the direct performance indicators available to market organizations, particularly that of profit, public agencies have to develop their own standards or goals. These goals may include budget maximization, as argued by Niskanen;[14] they may

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[12] For information concerning charges in Britain and a discussion of their role, see R. Rose, 'Charges as Contested Signals', *Journal of Public Policy*, 9 (1989), 261–86.

[13] Wolf, *Markets or Governments*, p. 66.

[14] W. A. Niskanen Jr, *Bureaucracy and Representative Government* (Chicago: Aldine Atherton, 1971).

also include technological advance, the acquisition and control of information, or simply the desire for a comfortable life for the organization's employees. Whatever form they take they are unlikely, Wolf argues, to coincide with the public interest, particularly that part of it concerned with efficiency. Indeed, in general, the effect of internalities is to inflate costs, to boost agency supply and hence, other things being equal, to create a lower level of nonmarket output than would be efficient.

Wolf acknowledges that large market organizations, too, have to develop their own internal standards to manage the organization and to motivate the people within it. However, there is an ultimate test of these standards: their contribution to profitability. Hence internal goals and organizational structures must be linked, even if only indirectly, to the external price system. 'If the two are disconnected, the survival of a market organization will be jeopardized by the response of consumers, competitors, stock-holders and potential raiders, even in imperfect markets.'[15]

Here again the argument is alluding to a recognisable phenomenon but is rather confusingly expressed. In particular, there again seems to be a failure to distinguish between different types of government intervention. For instance, those working for a government organization operating in a competitive environment are likely to behave differently from those working in one that is a monopoly, and this needs to be recognized in any general theory of governmental failure. Similarly those working in organizations that are government-subsidized or government-regulated, whether government-owned or not, may well behave differently from those that are not. In other words, the *form* that government intervention takes will affect the behaviour of the agents involved and hence the consequences for efficiency. This is discussed further below.

Derived Externalities

Under this heading, Wolf argues that government intervention to correct market failure may generate unanticipated side effects. These will not be realized by the agency responsible for creating them and therefore do not affect the agency's behaviour. In that sense they are external to the agency but are none the less derived from its actions: hence Wolf labels them 'derived externalities'.

Wolf is clear that these kind of externalities are not the same as market externalities. As explained above, the latter are side effects that do not impinge on the agents concerned because of failures in the price mechanism. Whether they are anticipated or not is irrelevant.

However, in that case, it is not clear why government organizations should be singled out as being subject to the 'derived externality' problem. Any activity, whether undertaken in the public or private sector, may have unintended side-effects. We live in an uncertain world in which not everything can be adequately predicted, a fact of life to which private organizations are as subject as public

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[15] Wolf, *Markets and Governments*, p. 67.

ones. In a partial response to this, Wolf argues that government operations are often large and are therefore 'blunt instruments whose consequences are both far-reaching and difficult to forecast'.[16] He also claims that most derived externalities are long-term in nature and, because they are under political control, government organizations are under short-term pressure; hence they will tend to overlook potential externalities.

However, neither of these are *necessary* features of government operations, nor are they unique to those operations. Governments can and do undertake small-scale activities; private enterprise can undertake large ones (Canary Wharf in the London Docklands and the Channel Tunnel, for example). Governments are not always driven by short-term considerations (witness successive French governments' decisions to invest heavily in nuclear power); private organizations, on the other hand, often are (witness the so-called 'short-termism' of the City). Overall, there seems no *a priori* reason for supposing that government organizations are likely to create more 'derived externalities' than private ones; and, if that is the case, these kind of externalities are as much a source of market as of government failure.

So one of Wolf's categories of government failure to achieve efficiency does not really stand up. The other two do refer to distinct and important phenomena; but they are not always expressed in a manner that captures the essence of the problems involved. The confusion arises from the absence of any distinction between the different ways in which the government can intervene in the economy, a distinction that is crucial, for there are different reasons (several of which are not mentioned by Wolf) why government intervention might 'fail' in each case. It seems more useful to construct a theory of government failure that uses this distinction as its foundation; and this is what is attempted in the next section.

AN ALTERNATIVE FORMULATION

The government can involve itself in an area of social and economic activity in any, or all, of three ways: *provision, taxation or subsidy* and *regulation*. That is, it can *provide* a commodity itself through owning and operating the relevant agencies and employing the relevant personnel. It can *tax* the commodity, thus raising its price above the level that would have been attained in a competitive market, or it can *subsidize* the commodity, thus lowering its price below the market level. Sometimes the price may be reduced to zero, with the commodity being provided free. Alternatively, the government can *regulate* the production and distribution of the commodity, prescribing the structure of the market or the quantity, quality or price of the commodity concerned.

In many cases of government intervention, all three of these methods are used. For instance, under the British National Health Service, the government

[16] Wolf, *Markets and Governments*, p. 77.

provides health care through the public provision of hospitals and other forms of care; it subsidizes health care by providing it free, or largely free, at the point of use; and it regulates the quality of health care through establishing qualification requirements for medical personnel. In other cases, one form predominates: provision, in the case of an unsubsidized nationalized industry; subsidy, in the case of the various tax reliefs for owner-occupation or private pensions; regulation, in the case of rent control or minimum wages.

Now the arguments concerning government failure to achieve either efficiency or equity will vary as to the type of government intervention involved. Let us begin with efficiency.

EFFICIENCY

Government Provision

There are a number of reasons for supposing that government provision will be inefficient. First, government providers are usually (although not always) monopolies; indeed their monopoly status is sometimes guaranteed by the government (as in the case of the British Post Office). Hence their market is not 'contestable'; that is, not only do they have no actual competition, they also are protected from even potential competition due to other firms entering the market. Moreover, the fact that the monopolies are government owned means that, unlike private monopolies, there is no threat of bankruptcy; the management does not have to answer to shareholders and are not under the threat of take-over if they are inefficient.

The absence of competition, either actual or threatened, and of the danger of take-over, reduces the incentive to keep costs to a minimum. Hence in these circumstances there will be X-inefficiency. Put another way, the cost of government provision will generally be higher than the minimum cost that is technically feasible.

This does not imply that managers of monopoly government enterprises are completely immune to efficiency pressures. If the efficiency failure is dramatic, it may contribute to their political masters being voted out of office, or the ministry concerned may be 'taken over' by another member of the government concerned. However, this political 'contestability' is unlikely to be as effective a constraint as market contestability. Not only are ministerial changes and, more so, elections infrequent, but their outcomes are dependent on a large number of factors quite independent of the efficiency of government enterprises.

Government providers do not always have to be monopolies. Following the recent internal or 'quasi'-market changes in the British education system, for example, state schools have to compete for pupils. The implementation of similar kinds of quasi-market reforms in the National Health Service will result in government-owned hospitals having to compete for patients with private or voluntary hospitals. The proposed reforms in community care will result

in local authority residential homes having to compete with private ones for contracts from the local authorities themselves.[17]

The consequences for efficiency of competition among government providers will depend in part on the organizations with which they are competing. If the other competitors have the principal aim of maximizing their profits, then, in the absence of any government subsidy, the government provider concerned will go out of business unless it minimizes costs. If, on the other hand, its potential competitors are not simple profit-maximizers (as might be the case if they were voluntary organizations, for instance), then it only has to match their behaviour to survive. In that case, too, the cost of provision would be higher than the actual social cost (there would be X-inefficiency). However, this would not be a case simply of government failure since all the organizations involved (public and non-public) would be behaving in the same way.

So there are two sets of circumstances where government provision on its own would be inefficient: where the government provider is a monopoly and where there is competition but that competition comes from non-profit-maximizing organizations. In each case (so long as there was no other area of market failure), the inefficiency would be X-inefficient and in consequence also allocatively inefficient. If the commodity were being sold to consumers at a price related to costs, then the consequence of the cost of government provision being above the minimum cost of provision would result in less being provided and consumed than would be allocatively efficient.

What is the magnitude of this source of government failure? The way this question has been addressed in the literature is through the mechanism of comparing the efficiency of government-owned organizations with private ones performing similar tasks. The evidence is conflicting and subject to different interpretations. A survey of some fifty studies of the comparative efficiency of public and private providers undertaken before 1980 found that in the majority of cases private providers were more efficient (in the sense of X-efficiency) than public ones.[18] On the other hand, another review of the same evidence reached the conclusion that it was not whether an organization was publicly or privately owned that was crucial to the efficiency of its operations, but the degree of competition to which it was subject.[19] A discussion of the empirical literature that includes more recent evidence also emphasized the importance of competition, but concluded that, even if competition were effective, privately

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[17] These changes and their implications for the efficiency and equity of government policy on the area concerned are examined in J. Le Grand, *Quasi-Markets in Social Policy: Studies in Decentralisation and Quasi-Markets No. 1* (Bristol: University of Bristol, School for Advanced Urban Studies, 1990).

[18] T. E. Borcherding, W. W. Pommerehne and F. Schneider, *Comparing the Efficiency of Private and Public Production: The Evidence from Five Countries* (Zurich: University of Zurich Institute for Empirical Research in Economics, 1982).

[19] R. Millward, 'The Comparative Performance of Public and Private Ownership', in E. Roll, ed., *The Mixed Economy* (London: Macmillan, 1982).

owned enterprises were to be preferred over government-owned ones – provided that other substantive market failures were absent.[20]

One problem with most of these studies is that they are only concerned with X-efficiency. That is, they compare the costs for different types of organization of providing a given level of output; but they do not examine the question as to whether the output is worth providing in the first place: whether it is of use or value. Admittedly in cases such as electricity or water (which have been the focus of some of these studies) this is likely to be unproblematic; but in others the distinction may be significant – and may give the edge to non-market systems.

An important instance of this may be health care. The United States, with a delivery system dominated by the private sector, spends over 11 per cent of its GNP on health care; the United Kingdom spends around 6 per cent of its (much smaller, even in per capita terms) GNP on its largely public National Health Service (NHS). Yet the United Kingdom has a longer life-expectancy for both men and women than the United States; it also shows up better on other health indicators such as infant mortality.[21] In short, arguably the UK public system delivers a better 'outcome' at a far lower cost than the US private system. Even if the US system is more X-efficient – and that has yet to be established – this suggests that it may be highly allocatively inefficient.

Overall, systematic empirical evidence on the relative performance of private and government enterprises is rare, and what there is needs to be carefully interpreted. It may be that in some cases government enterprises are more X-inefficient than their market counterparts; but it may be that, despite this, they are more allocatively efficient.

One of the factors that complicates the empirical investigation of the efficiency of government-owned enterprises is the fact that it is rare to find examples of government provision on its own, unaccompanied by any other form of intervention, notably subsidy. This creates efficiency problems of its own, as we shall now see.

Government Subsidy

If a commodity is provided free at the point of use to consumers with its provision being subsidised from public revenues (and if there is no other cost to consumers such as time or travel), then the only cost to the consumer of consuming the commodity is the perceived extra cost in terms of any extra tax she might have to pay as a result of her consumption. Since this is likely to be very small indeed, the amount demanded will be greater than the allocatively efficient amount. More generally, if the commodity is provided at any price below cost, there will be excess demand for the commodity: that is, there

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[20] John Vickers and George Yarrow, *Privatization: An Economic Analysis* (Cambridge, Mass.: MIT Press, 1988), pp. 39–43.

[21] N. Barr, H. Glennerster and J. Le Grand, *Reform and the National Health Service*, STICERD Welfare State Programme Discussion Paper No. 32 (London: London School of Economics, 1988).

will be a demand for the commodity that is in excess of the demand that it would be socially efficient to provide.

Faced with this excess demand the government has two choices. It can either meet all the demand, thus creating a situation where more of the good or service is provided and consumed than is socially efficient. Or, if it knows the amount that is socially efficient (we shall discuss this assumption in a moment), it can simply provide this amount and use non-price rationing devices to decide who gets what. This may be through queueing or waiting-list procedures, or it may be through delegating the decision to the judgements of bureaucrats, managers or professionals (such as doctors in the case of health care or social workers in the case of social care).

The problem with queueing or waiting lists is that the people at the front of the queue or at the top of the waiting list may have got there by luck, by having plenty of free time or by having the right contacts. In such cases there is no guarantee that they are the people who really want or need the good or a service the most. Hence, although in terms of X-efficiency the right amount is being produced, the level of production will not be allocatively efficient.

The problem with delegating the relevant decisions to professionals or bureaucrats is that, in making those decisions, the latter may pursue their own interests – and these may not coincide with those of either consumers or the government. Bureaucrats may be budget-maximizers: that is, they may wish to promote their incomes and status by expanding the number of their employees and hence their budget.[22] Professionals are often self-employed, with their income being directly related to the amount of the service they provide. In that case they may try to increase their income and status by recommending that potential consumers use more services than they really need. On the other hand, if they are employees, so that their incomes are not directly related to the level of service provided, they may try to reduce their work-loads by underproviding the service. Self-interested behaviour by both professionals and bureaucrats is sometimes restrained by a commitment to the public interest or by professional ethics, often formalized in a code of practice; however, there is little that guarantees such restraints' effectiveness.

There is a yet more serious difficulty if the government forsakes the use of prices as a means of allocating resources. This concerns the role of information. In a market system, movements in prices convey information to producers about changes in what consumers want. For instance, if there is an increase in the demand for a commodity, its price will rise, thereby conveying

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[22] The theory of the budget-maximizing bureaucrat was developed by Niskanen in *Bureaucracy and Representative Government*. Its theoretical basis has been challenged by a number of authors: see, for example, P. Dunleavy, 'Bureaucrats, Budgets and the Growth of the State', *British Journal of Political Science*, 15 (1985), 299–328; R. Goodin, 'Rational Politicians and Rational Bureaucrats in Washington and Whitehall', *Public Administration*, 60 (1982), 23–41; J. G. Cullis and P. R. Jones, *Micro-Economics and the Public Economy: A Defence of Leviathan* (Oxford: Basil Blackwell, 1987).

this information to producers; they will see that the production of the commodity has become more profitable and, if they are profit-maximizers, they will increase supply to meet the increased demand. If they over-react by increasing supply too much, then this information will be conveyed to them again by a movement in prices, this time a fall.[23]

Now the effect of a government tax or subsidy policy is to drive a wedge between prices and demand and supply such that the role of prices as conveyors of information is reduced or even eliminated. In consequence, the government will find it very difficult to assess the overall efficient level of production of a commodity; for, in the absence of a price mechanism, it has few, and not very reliable, ways of assessing the social benefit from that production and relating it to its social cost. More specifically, there are generally two mechanisms available to governments for this purpose: simple majority voting procedures or, at a more devolved level, delegation to bureaucrats or professionals. The difficulties with delegation of decisions to bureaucrats and professionals have been mentioned above. Those with voting procedures need a little more discussion here.

There are some reasons for supposing that majority voting procedures might give a better indication of the 'true' social benefit of the production of a good or a service than relying on market signals. First, the mechanism of voting allows *everyone* who is affected by the consumption and production of a good or a service to have a say in its level of provision. Hence, if there are externalities in production or consumption, then, in theory at least, the political process will take these into account. Secondly, majority voting can give everyone an equal say, in the sense that everyone has only one vote; this overcomes the disadvantage of market demand that it gives a greater weight to those who are better off.

However, these advantages have to be set against a powerful set of disadvantages. The problems with majority voting as a means of ascertaining voter preferences are now of course the subject of an enormous literature that can only be outlined here. First, under certain conditions it can be shown that majority voting gives greater weight to the preferences of certain individuals or groups than others, such as the median voter.[24] Secondly, sequential majority voting can lead to 'irrational' outcomes, such as cycling or inconsistent decisions. Thus a vote over, say, education versus defence spending,

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[23] Hayek was perhaps the first to draw attention to the importance of prices and information: see, for example, F. A. Hayek 'The Use of Knowledge in Society', *American Economic Review*, 35 (1945), 519–30. It should be remembered that at times prices convey the wrong information. Many of the instances of market failure – especially those concerned with externalities and imperfect information – arise because of the failure of prices to provide appropriate information.

[24] The median voter theorem has its origins in Harold Hotelling's 'Stability in Competition', *Economic Journal*, 39 (1929), 41–57. Since then, of course, it has been extensively developed, as well as subject to empirical tests; a useful review of the relevant literature can be found in Mueller, *Public Choice II*.

followed by votes over defence spending versus roads and over roads versus education might reveal that education was collectively preferred to defence, defence preferred to roads, but roads preferred to education.[25] Thirdly, the fact that everyone has only one vote means that it is impossible to gauge the depth of someone's preferences: how much she wants the good or a service concerned. Fourthly, elections or referendums are expensive to arrange and organize, particularly if voters are to have enough information to be able to make the necessary decisions. In consequence, in practice voters are not asked to vote over levels of provision of particular goods and services; rather they vote infrequently over broad packages offered by different political parties.

Fifthly, when people vote they are rarely properly informed about either the benefits or the costs of the various proposals with which they are confronted. Public choice theorists are divided as to whether they are likely to be better informed about the benefits or about the costs. Some argue that the activities of pressure groups favouring particular kinds of government expenditures will lead people to exaggerate the benefits from those expenditures and to under-estimate the costs; if this is correct, they will vote for a level of provision that is higher than the efficient level.[26] Others argue that the benefits from government spending are often very diffuse, while the costs, in terms of increased taxation, are very obvious; hence people will tend to vote for too little govern-ment spending.[27] In either case, it is unlikely that the amount they vote for will coincide with the efficient level.

Finally, there is an additional source of inefficiency that arises from govern-ment subsidy. These are the disincentives for work and savings created by the taxation necessary to finance the subsidy. Almost all forms of taxation create allocative inefficiencies of one form or another in the economy (the only exception is a poll tax, and this, as recent British experience indicates, may have other undesirable consequences), although, again, the actual size of the loss in each case is a matter of empirical investigation.

Much of the empirical literature on the inefficiencies of government subsidy has concerned the growth of public expenditure and the factors that affect that growth. Again the evidence is conflicting. Many of the studies concerned highlight the role of interest groups, thus supporting the view that pressure from such groups tends to lead to excessive spending; the role of the middle

[25] The possibility that majority rule can lead to cycles in this way was first discussed (in recent times) by Duncan Black in 'The Decisions of a Committee Using a Special Majority', *Econometrica*, 16 (1948), 245–61. It also forms an important part of Kenneth Arrow's 'Impossibility Theorem' in his *Social Choice and Individual Values* (New York: John Wiley and Sons, 1951; revised edition, 1963).

[26] See, for example, J. M. Buchanan and G. Tullock, *The Calculus of Consent* (Ann Arbor, Michigan: University of Michigan Press, 1962).

[27] See A. Downs, 'Why the Government Budget Is Too Small in a Democracy', *World Politics*, 12 (1960), 541–63.

classes often seems to be particularly important.[28] On the other hand, the evidence referred to above concerning the relative shares of GNP taken up by health care spending in the United Kingdom and the United States provides support for the view that the necessity for particular items of public spending to compete with other items for government (especially Treasury) approval in the context of tight budget limits excessively restrains that spending.[29]

Government Regulation

In theory, a perfectly informed government with suitably motivated civil servants could achieve an efficient allocation of a good or a service by using the latter to regulate its production. Thus, if it knew what the efficient level of production of a good or service should be, it could compel the organization concerned to produce (and price) it at the appropriate level. This would be *quantity* regulation. It could also regulate the *quality* of the good or service being produced, if this were a cause for concern. If too high (or too low) a *price* were being charged, it could regulate the price as well; and it could regulate *market structure* through controlling the numbers of firms allowed to operate in the market.

However, in practice government will face a number of problems with any of these kinds of regulation. Again these have been discussed extensively in the literature and only a few can be mentioned here.[30] First, it will find it very difficult to obtain the relevant information. We have already seen the difficulties involved in obtaining information concerning social benefits in the absence of a properly functioning market. But, in addition, in this case the government would need to obtain information from the organizations concerned on costs, information that the latter would have little incentive to supply.

Secondly, and related, is the problem of 'regulator capture'. The regulators of an industry usually have to meet regularly with the representatives of that industry. Inevitably, there will be a tendency for them to develop personal relationships of various kinds which will perhaps lead them to be more sympathetic to the claims of the industry than a strict interpretation of the public

[28] See, for example: S. Peltzman, 'The Growth of Government', *Journal of Law and Economics*, 23 (1980), 209–87, reprinted as chap. 1 of G. J. Stigler, ed., *Chicago Studies in Political Economy* (Chicago: University of Chicago Press, 1988); J. Le Grand and D. Winter, 'The Middle Classes and the Defence of the British Welfare State', chap. 8 in R. Goodin, J. Le Grand *et al.*, *Not Only the Poor: The Middle Classes and the Welfare State* (London: Allen & Unwin, 1987); F. C. Pampel and J. B. Williamson, *Age, Class, Politics and the Welfare State* (Cambridge: Cambridge University Press, 1989); J. Le Grand, 'The State of Welfare', chap. 10 in J. Hills, ed., *The State of Welfare* (Oxford: Oxford University Press, 1990). Peltzman and Pampel and Williamson provide useful references to some of the rest of the literature, as does Mueller, *Public Choice II*, chap. 17.

[29] I am grateful to Anthony King for this point.

[30] Again a useful review can be found in Mueller, *Public Choice II*, especially chap. 13. Aspects of the economic theory of regulation are discussed in Vickers and Yarrow, *Privatization*, chap. 4, and in Part 2 of Stigler, ed., *Chicago Studies in Political Economy*.

interest might require. The eventual level of regulation (whether of quantity, quality, price or structure) might therefore correspond more to the interests of producers than to those of the society as a whole (as represented by the efficient level).

Both of these phenomena create problems for each kind of regulation. The absence of perfect information means that quantity regulation can result in either too much or too little of the good or service concerned being produced. Poor information and regulator capture can result in quality and structure regulation being used to protect those being regulated from competition and thereby create both X- and allocative inefficiency. And both can result in regulated prices being set either too high or too low, thus creating either excess supply (with the consequence of unused resources) or excess demand (with the consequence of arbitrary rationing).

There also may be consequences of government regulation for dynamic efficiency. Too heavy regulation of any kind may stifle incentives for invention and innovation; it might also discourage potential suppliers from entering the market and encourage those already in it to leave. If, for example, prices are held at a level below that which would earn suppliers a rate of return comparable to that which they would earn in other activities, then they have an incentive to abandon supplying the good or service concerned and to turn to those activities. Regulation can thus create both dynamic and allocative inefficiency.

Again there is an enormous empirical literature on the effects of regulation that cannot be adequately summarized here.[31] As with other empirical work on government intervention, the relevant studies often suffer from the difficulty of disentangling the effects of one form of intervention from another (such as a change from public to private ownership). But it is probably fair to say that there is empirical support for many of the theoretical predictions concerning the likely consequences of regulation; however, it is not clear how the inefficiencies that result compare in size with those that might have appeared in an absence of regulation.

EQUITY

There is relatively little in the literature on the theory of government failure to achieve equity. Although this is not the place fully to rectify that omission, we can begin the process, again by utilizing the distinction between government provision, taxation or subsidy and regulation.

There seems no particular theoretical reason why government *provision* on its own (that is, if it is not accompanied by subsidy or regulation) should be either equitable or inequitable in terms of its impact on the distribution of the commodity being provided. However, there may be consequences for the broader distribution of income. In particular, replacing a government

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[31] See Mueller, *Public Choice II*, chap. 13, Part B, and the references therein; Stigler, ed., *Chicago Studies in Political Economy*, Part 3; Vickers and Yarrow, *Privatization*, Part II.

monopoly provider with a private monopoly might have an inegalitarian impact on that distribution, because (a) the latter would have more incentive to exploit its position to maximize profits and (b) any profits would accrue to its share-holders instead of to all taxpayers.

Government *subsidy* may achieve equity if the latter is defined in terms of minimum standards of consumption, for subsidizing a commodity will make it easier for poor people to consume it and thereby help ensure that everyone has a minimum quantity. With respect to equity in the sense of equality of consumption, it is useful to distinguish between the effects of universal and means-tested subsidies. If the subsidy is means-tested – that is, if it is confined only to people on low incomes – then it may promote greater equality of con-sumption, for it will encourage poor people's consumption relative to rich people's. However, this assumes that the means test does not discourage poor people from consuming the good or service, an assumption rarely borne out in practice.[32]

A further problem with means tests is their effect on individuals' incentive to work. Those in receipt of a means-tested service may lose their entitlement if they increase their income and hence may be discouraged from trying to do so by working harder.[33]

Given these difficulties it can be argued that universal subsidies are preferable, from an equity point of view, to means-tested ones. However, these have prob-lems of their own. As is by now reasonably well known, many directly subsidized services are used by the better-off at least as much as, and often more than, by the poor, including the National Health Service, higher and further edu-cation, secondary education after the age of 16, roads, rail transport, some forms of bus transport and libraries. The same is true of many services subsidized indirectly through various tax reliefs, including owner-occupation and private pensions.[34]

The fact that subsidies to services such as these are inegalitarian in their distributional consequences does not, of course, necessarily mean that they are more inegalitarian than if there were no subsidy. It is possible that the

[32] See A. Deacon and J. Bradshaw, *Reserved for the Poor: The Means Test in British Social Policy* (Oxford: Basil Blackwell and Martin Robertson, 1983).

[33] Yet another potential problem concerns means-test 'creep' over time, whereby means-tested services are metamorphosed into universal ones. See R. Goodin and J. Le Grand, 'Creeping Univer-salism in the Welfare State: Some Evidence from Australia', *Journal of Public Policy*, 6 (1986), 255–74, reprinted as chap. 6 in Goodin, Le Grand *et al.*, *Not Only the Poor*.

[34] See G. J. Stigler, 'Director's Law of Public Income Redistribution', *Journal of Law and Econ-omics*, 13 (1970), 1–10, reprinted in Stigler, ed., *Chicago Studies in Political Economy*; J. Le Grand, *The Strategy of Equality* (London: Allen and Unwin, 1982); Goodin, Le Grand *et al.*, *Not Only the Poor*; G. Bramley, J. Le Grand and W. Low, 'How Far is the Poll Tax a Community Charge? The Implications of Service Usage Evidence', *Policy and Politics*, 17 (1989), 187–205. See also V. George and P. Wilding, *The Impact of Social Policy* (London: Routledge and Kegan Paul, 1984); S. Ringen, *The Possibility of Politics* (Oxford: Oxford University Press, 1987); Pampel and Williamson, *Age, Class, Politics and the Welfare State*.

combination of tax finance and subsidized service results in a distribution of 'final' income (market income plus the value of government subsidies received in cash or kind minus taxes paid) that is more egalitarian than if neither the taxes concerned nor the subsidies existed. Indeed this is probably true for government expenditure and finance as a whole (although the methodological difficulties of arriving at any firm conclusion about this should not be under-estimated).[35] However, there are individual services where the poor might well be better off if the subsidy were withdrawn.

An interesting case of this is British higher education. The fact that this is offered free to most students but is at the same time subject to severe govern-ment restraints on spending has contributed to the demand for such education substantially exceeding its supply. In consequence, examination results are used as a rationing device; since people from poorer backgrounds often do worse in examinations, they are thereby disadvantaged. The effect of government subsidy in this case is to lower a financial barrier to students from poor families, while at the same time raising another, possibly higher, one in the form of entry standards. We saw earlier that non-price rationing systems that almost inevitably accompany government subsidy are unlikely to be efficient; what this example shows is that there is no guarantee that they will promote equity either.

Finally, government *regulation*. Several forms of this, particularly those designed to control prices, such as minimum wages or rent controls, have the intention of redistributing income (from employers to employees in the case of minimum wages and from landlords to tenants in the case of rent control). However, there may again be perverse redistributional consequences. Minimum wages may reduce employment, making it more difficult for workers to get jobs: they may also put up costs and prices, thereby affecting consumers. Rent controls may reduce the overall supply of rented housing thus adversely affect-ing housing opportunities for key sectors of the population.

Government regulation designed to promote quality or market structure may also have undesirable redistributional consequences. Qualification requirements for professionals, for example, can be used to restrict entry into a profession and hence raise the incomes of those in the profession concerned. Similarly, quality controls on products can be used to restrict competition in the supply of those products thus increasing the profits of existing suppliers.

Of course, none of these are *necessary* consequences of regulation. If the regulators are perfectly informed and truly impartial, then some or perhaps all of the perverse redistributional consequences may be avoided; but, as we have seen in the discussion of the consequences of regulation for efficiency, the same market failures that provided the motivation for the government inter-vention in the first place militate against impartiality and perfect information.

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[35] See J. Le Grand, 'Measuring the Distributional Impact of the Welfare State: Methodological Issues', chap. 2 in Goodin, Le Grand *et al.*, *Not Only the Poor*.

CONCLUSION

Wolf performed an important service in drawing attention to the need to construct a theory of government failure to match that of market failure and in providing some of the bricks from which such a construction can be built. However, as I have indicated, I am not convinced that Wolf's particular bricks are always suitable for the purpose, nor have I been persuaded by the uses to which those that are suitable have been put.

I have only been able to give an outline of a more consistent theory of government failure here. However, it is hoped that enough has been said to give an indication of what such a theory might look like. Undoubtedly it will fail to satisfy some readers; perhaps they will be stimulated to try to do better, in the way that Wolf's contribution has stimulated me.

Finally, it is important to re-emphasize that a study of government failure does not imply that governments always fail, still less that markets always succeed. Whether a particular form of government intervention creates more inefficiency or more inequity than if that intervention had not taken place is ultimately an empirical question and one that is by no means always supported by the evidence. Governments sometimes succeed, a fact that should not be lost to view in the current glare of the market's bright lights.