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ECONOMIC THEORY, APPLICATIONS AND ISSUES

Working Paper No. 25

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Transaction Costs, Bounded Rationality
and Other Considerations**

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Efficient Public Provision of Commodities: Transaction Costs, Bounded Rationality and other Considerations

ABSTRACT

After briefly reviewing recent economic theories about the economic welfare consequences of public provision of private commodities, this article examines the cost efficient supply of publicly provided commodities. In the light of the presence of transaction costs and bounded rationality, and consequences for the competence of public bodies, it considers whether the following are cost effective: (1) increased out-sourcing of government funded work and supplies using market and competitive mechanisms; (2) greater contestability of employment in the public sector; (3) more widespread imposition of user charges for publicly supplied commodities; and (4) the increased use of performance budgeting and accounting in the public sector. These measures are often favoured by proponents of structural adjustment policies as means to increase the economic efficiency of the public sector. However, it is argued here that such measures can potentially reduce the economic efficiency of the public sector rather than increase it.

Keywords: bounded rationality, competence, economic efficiency, transaction costs, user charges

Efficient Public Provision of Commodities: Transaction Costs, Bounded Rationality and other Considerations

1. Introduction

The questions of the extent to which commodities should be provided by the public sector, what type of commodities should be financed by the public sector, the extent to which they should be produced by the public or private sector and whether or not there should be user charges for public commodities (that are either private or mixed commodities) has been subject to much policy prescription and some theoretical debate in recent years. As Balestrino (1999*b*, pp. 511-512) points out:

“...the pressure to implement user charges for publicly provided private goods has been very large in the more developed economies of the West as well as in the transition economies and in the Third World. Internal requirements (such as government budget problems) or external demands (such as the IMF /World Bank–imposed stabilisation strategies or Maastricht criteria in terms of public debt) have forced many countries to reconsider, inter alia, their pricing policies; as a result goods and services that were provided virtually free of charge, such as those in the healthcare and education sectors, are now being charged for.”

Much of the theoretical economic debate has centered on whether the public sector should supply private goods at all and whether if it does supply such goods, they should be free or subject to a user charge. Standard welfare economics suggests that private commodities are most efficiently supplied by the private sector, but if they are supplied by the public sector economic efficiency requires the adoption of a marginal cost pricing. Furthermore, standard welfare theory maintains that it is not welfare maximising to provide such goods free (in kind), or almost so, for the purposes of income redistribution, because cash transfers which leave individuals free to allocate these transfers will usually enable them to achieve a higher level of welfare and cannot make those for whom the redistribution is intended worse off (cf. Balestrino, 1995, p. 461).

Standard approaches often qualify this prescription on the grounds of the presence of favourable externalities (for instance, in the provision of education and health care), because of information asymmetries and on merit good grounds (cf. Balestrino, 1995; Hare, 1988).

Second best arguments in favour of public provision of some private goods have also been canvassed in the literature (Guesnerie and Roberts, 1984) and it has been shown theoretically that public provision of private goods that involve in-kind transfers can be socially desirable in the presence of distortionary taxes (Balestrino, 1999a) However, Balestrino (1999b) also argues that circumstances can arise in which it is welfare improving to introduce user charges to deter the rich from using publicly provided goods.

This article focuses on issues that are neglected by existing literature.¹ In this article, the government's decision to supply commodities is basically taken as given and it concentrates on methods that have been suggested to ensure that commodities are supplied in a cost-effective manner taking into account the presence of bounded rationality and the existence of market transaction costs.

If the public provision of commodities can be achieved in a cost-efficient manner, then either more publicly provided commodities can be supplied for the same budget outlay, or the same quantity of such commodities can be supplied with a smaller government budget. The latter possibility especially interests international organisation, such as the IMF and World Bank, favouring small government and the maximum use of markets in the supply of commodities, including those commodities financed by public revenue.

In this article, it is argued that the use of market mechanisms (and market-like mechanisms) to supply publicly funded commodities is frequently not cost effective because of the presence of market transaction cost and bounded rationality. Furthermore, in a parallel fashion to that suggested by Coase (1937, 1960) for private firms, transaction costs will

¹ Although income distribution issues and second-best efficiency arguments are not the foci of this article, it is pertinent to note that within households in many patriarchal societies, females are often discriminated against in their access to health and educational services (cf. Tisdell, 2000; Tisdell et al. 2001). In such societies, government provision without charge to users may promote greater gender equality with long-term development benefits for society. While (Balestrino, 1999a, b) mentions that his and other relevant economic modeling allows for household utility and choice, in fact it does not consider intra-family allocation, but treats households as if they are individuals. This, although in line with neoclassical economic theory, fails to take account of power relationships and bargaining within family. This can be a serious limitation of such theorising.

influence the optimal size of public bodies. Given the funds available to the public body it should only contract out its activities up to the level where the marginal cost of outsourcing (inclusive of transaction costs) is equal to the marginal cost of performing the activities inside the body.

While theories of transaction costs (Coase 1937; 1960, Demsetz, 1968, 1990; Williamson 1970, 1975; Williamson and Masten, 1999) and related theories of bounded rationality (Simon, 1955, 1957, 1959, 1961) have had a significant influence on managerial economics of private firms (cf. Tisdell 1990,) their applications to public administration and policy appears to have been largely ignored.

This is especially evident in relation to policies for 'right-sizing' of public bodies, contracting out government work, and those for creating or simulating markets in relation to public provision of commodities. It also applies to policies increasing competition and contestability within public organisations, and the increased use of public performance budgeting and accounting. In other words, bounded rationality and transaction costs (and associated evolutionary phenomena) are frequently ignored in pro-market, managerialist policies being currently applied to much public administration (cf. Earl, 1999). The effect of ignoring these aspects is to indicate that greater market-making in relation to public activities is more efficient than is really the case.

International economic organisations such as the IMF, World Bank and Asian Development Bank have tended to ignore transactions costs and bounded rationality issues in their support for structural adjustment policies favouring a very small government sector and for the maximum use of market mechanisms along with the creation of competitive environments. Such policies are claimed to increase economic efficiency. However, the application of these policies can lead to cost inefficiencies in the public provision of commodities when bounded rationality, transaction costs, and evolution of managerial competence are taken into account.

For example, the Asian Development Bank (ADB) in reviewing the economic performance of four least developed Pacific Island nations (Kiribati, Solomon Islands, Tuvalu and Vanuatu) recommended that they make greater use of the above-mentioned policies (ADB

1997, 1998a, 1998b, 1998c). These policies have also been increasingly applied in public administration in Australia, Europe and elsewhere.

The following market-related procedures and types of economic rationalism are widely recommended by advocates of structural adjustment policies:

- Increased out-sourcing of government work and supplies wherever possible by the use of market mechanisms (e.g. by competitive bidding) or simulated market mechanisms.
- Increased lack of permanency of employment in public sector positions with greater use of fixed-term employment contracts and the periodic opening up of positions to enable these to be refilled in a new round of competition.
- Greater adoption of user-pays by public bodies to recover costs.
- Use of performance budgeting and accounting.

It is important to consider ways in which these policies may increase or reduce the economic efficiency of the supply of publicly funded commodities. Therefore, each of those major policy suggestions will now be examined in turn.

2. Contracting-Out Supply of Publicly Funded Commodities

For the same reasons as given by Coase (1937, 1960) in relation to private firms, transaction cost theory suggests that the optimal size of public bodies will be influenced by market transaction costs. In the absence of market transaction costs, all the business of government could be efficiently contracted out and the only public body required would be one needed to clear financial transactions. However, there are limits to the economic efficiency of using outside markets and this needs to be specifically studied in relation to the optimal size of public bodies.

Costs of contracting out public works or activities vary according to the type of item contracted out for supply. These market transaction costs can include:

- costs of searching for suitable suppliers and choosing between them;
- problems with lack of performance due to incomplete specification of contracts;
- failure of contractors to perform a contract, that is a clear breach of its specification;

- monitoring costs;
- loss of knowledge obtained from learning by doing by public bodies which may reduce their competence in monitoring and contract specification;
- increased scope for corruption in public administration e.g. ‘kickbacks’ to public servants from private companies for favouritism in the award of public contracts; and
- lack of timely or speedy supply of public commodities because of the length of time required for due process to contract this supply out.

When non-performance of contract occurs, the costs of legal action may exceed the benefits. So the lesser loss is often borne by the public body involved. Furthermore, whether or not to take legal action by the public sector is not a private decision and politicians are liable to interfere in this decision, depending upon their perceived interest. When a supplier has beneficial political contacts, this may further undermine the efficiency of the system.

In addition, in smaller economies e.g. Pacific islands, and for specialist supplies, there is sometimes only one possible supplier or a few. So prices tendered may reflect market power and the cost of outside supply can easily be higher than if the job were completed in house.

While various studies have been done in Australia to show that contracting out of public supplies and services results in considerable cost savings (e.g. Industry Commission, 1996), the implications of such studies is far from clear. Caution is needed on the following grounds:

- market transaction costs of public bodies are not taken into account or are only partially accounted for;
- only the short-run position may be captured with lack of account taken of loss of long-run ‘competence’ (cf. Winter, 1988) by public bodies e.g. as a result of loss of learning-by-doing possibilities, loss of quasi-rents in employees;
- loss of economies of scope and scale by the public body, and
- problems involved in ‘bundling’ , that is including in a bundle some commodities for which cost savings occur along with others for which this is not so, so that the net result is apparently a net cost saving.

Of course, the presence of X-efficiency in the public sector could strengthen the case for contracting out publicly financed supplies. In itself, however, this does not constitute a sufficient reason.

Although cost savings of around 20% (Domberger et al., 1986), and even more, have been reported for contracting out garbage 'collection', more modest gains seem to be usual. This is so even ignoring many of the costs of contracting out mentioned above. Hodge (1999, p.112) suggests on the basis of meta-analysis and a review of international data that cost savings of the order of 6% seem to be more usual. In fact, surveys by the PA Consulting Group (1997) and by the Deloitte and Touche Consulting Group (1997) reviewing Australian and overseas evidence came to the conclusion that average cost savings were likely to be modest (at around 2% to 10%), to the extent they exist at all. Furthermore, Hodge (1999, p.13) notes from studies that "most organisations [in the UK and US outsourcing contracts for IT] were reported to have underestimated the cost of outsourcing and the number of people and capabilities needed to oversee the project".

This is not to say that contracting out of the supply of publicly financed commodities cannot yield economic gains. It all depends. Nevertheless, the presumption that contracting out by public bodies inevitably leads to economic gains is flawed. Even in cases where economic gains occur, they appear in most cases to be modest for outsourcing and vary considerably with the nature of supply outsourced. While simple activities like refuse collection when outsourced might reduce costs by around 20% (Domberger et al., 1986), outsourcing of more complex activities may not. Complexity adds to costs of selection, monitoring and enforcement costs (these are all market related transaction costs) and may contribute to loss of competence by the public body doing the outsourcing.

In the light of the discussion in this section, it might be noted that the view that developing countries (such as the least developed Pacific island nations) can compensate for reduced foreign aid to a significant extent by adopting the public sector reforms discussed here may be too optimistic. While careful targeting of public sector administrative reforms can bring economic gains, the aggregate cost savings may be small (Tisdell, 2000). Dogmatic implementation of market-making and subjugation of the public sector to extreme competitive pressures may, on the other hand, turn out to be counterproductive and create a net national economic burden in the long run.

3. Insecure Public Employment Contracts – Greater Contestability of Public Employment

While frequent recontracting of employment and employment conditions with greater use of fixed term and non-tenured employment in the public sector may appear to be an effective method of obtaining increased efficiency in the supply of commodities by this sector, it may after all not be so. Transaction costs are involved in such procedures which involve greater contestability for employment positions in the public sector. Furthermore, the uncertainty engendered by insecure employment contracts may make employees reluctant to invest in training specific to their public organisation, reduce their morale, productivity and loyalty; loyalty being displayed by a contribution by individuals to the organisation beyond the call of duty. The latter may be regarded as a sunk asset as a result of the insecure recontracting process. Loyalty has its economic value (cf. Tisdell, 1996, Ch. 13) and this should not be overlooked.

In considering this matter, it should be recognised that public employees accumulate knowledge specific to their job and that the accumulation of this knowledge takes some time. Rapid staff turnover as a result of increased contestability can impair this ‘collective’ knowledge of the public body and reduce the efficiency of its operations. It can undermine the competence of such a body. Thus a balance needs to be struck in increasing contestability of jobs and frequency of recontracting.

Furthermore, in certain circumstances, employer and employee can both gain from an employment arrangement that pays the employee less than his/her economic value in the most productive stages of his/her life and employment but more during the less productive stage. Thus this implicit (rarely explicit) contract involves a time-dimension and its performance requires job security.

Account needs to be taken of the fact that some labour involves quasi-fixed factors due to asset specificity. It can, therefore, sometimes be economic to try to reduce labour turnover (or the risk of this) in order to preserve rent streams from human capital investment specific to an organisation, a point made by some ‘old’ institutionalists (Rutherford, 1994).

Contracting out through tendering and other processes, insecure employment contracts and associated contestability of positions in the public sector are all intended to expose this sector to highly competitive forces. But this strategy is problematic, not only for the reasons mentioned above but also in view of Schumpeterian considerations (Schumpeter, 1954). A system which lacks some surplus, slack or reserves may not perform efficiently because it involves a very high degree of competition (cf. Tisdell, 1996, Ch.9) and may develop in an inferior manner. Limited competition is likely to promote superior long-term economic performance or a higher long-term level of competence. Rarely is the optimal degree of competition from an economic point of view, the highest attainable. It is usually of some lesser degree even though there are no clear rules as yet for determining the optimal balance.

4. User Charges for Publicly Provided Commodities

As pointed out above, income distribution issues and second best economic efficiency matters have been well canvassed in relation to the desirability of the imposition of charges on users of publicly provided private commodities that are either private goods or mixed goods (see Balestrino, 1995, 1999 *a,b*). According to these arguments, in the presence of distortionary taxes and for some second best conditions, it can be socially desirable not to charge for such goods or to charge a price less than their cost of supply (Balestrino, 1995, 1999*a*) Nevertheless, Balestrino (1999*b*) also identifies situations in which user charges may cause the rich to opt out of public programs and this can benefit the poor (Balestrino 1999 *b*). These however, are not issues to be canvassed here. Apart from the types of considerations mentioned by Balestrino and others, the presence of market transaction costs can weaken the case for charging for publicly provided goods. This is the aspect I now want to consider.

Application of the user-pays principle can be counterproductive when the market transaction costs of collecting charges are high. The deadweight social loss from the cost of enforcing collection of charges may exceed the cost otherwise incurred when the items subject to exchange are made freely available by a public body.^{2,3} This is illustrated in Figure 1.

² The cost of collecting some user charges, such as hospital fees, can be very high, especially in developing countries, and bad debts are likely to be high. When I visited the Government Hospital in Apia, Samoa, the hospital superintendent said that he did not favour charging for hospital services for this reason.

³ Transaction costs involved in selling commodities (market-related ones) vary with the nature of the commodities supplied. For example, cost of exclusion from some commodities (even if they are not pure public goods) can be very high. These commodities may not be supplied by the private sector, even though their supply could be welfare-enhancing. Standard theories of the type reviewed by Balestrino, (1999*b*) assume

Figure 1

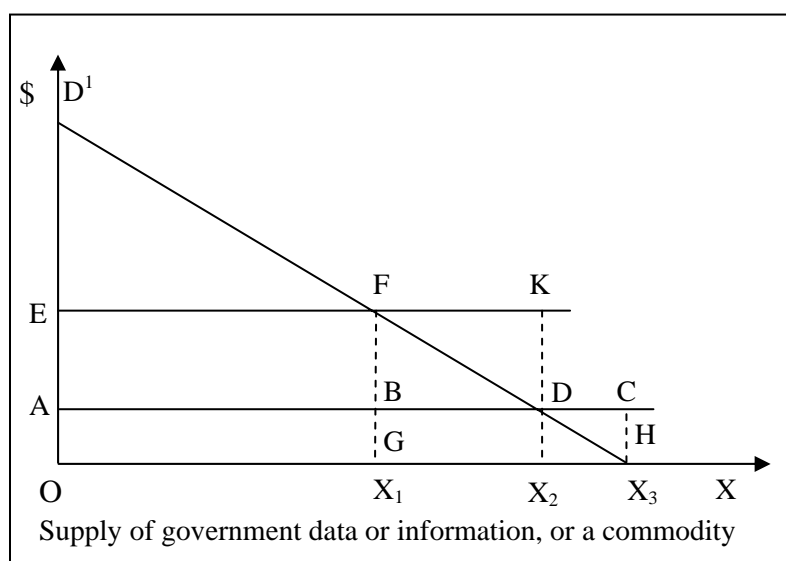


Figure 1: The users-pays principle need not result in a social economic optimum.

In Figure 1, the per-unit cost to the government in supplying certain data, information or a commodity is for simplicity assumed to be indicated by curve ABC. The demand for commodity is indicated by line D^1D . If the commodity is made available free, the deadweight loss resulting from its public supply is equal to the area of triangle DCH. Now suppose the full cost recovery is attempted and that transaction costs amount to AE per item sold. The transaction costs (since they have no value in themselves) can be regarded as a deadweight loss. Therefore, an amount equal to the area of rectangle ABFE is lost, at least. To this sum, one should add possibly the loss in consumers' surplus equal to triangle BDF. In this case, economic welfare is clearly reduced by introducing the user-pays principle. Given that there are only two alternatives, it would be socially preferable for the public sector to provide the commodity and make it available free of charge.⁴ However, one would have

costless excludability, for private or mixed goods but not pure public goods. But the cost of marketing of commodities in reality is not of this dichotomous nature. Apart from the cost of ensuring excludability, other costs involved in selling by the public sector can include extra costs of communication with buyers, administrative costs involved in collecting and accounting for funds collected. In some cases, even when exclusion is technically possible, exclusion can be difficult to enforce because of moral factors, eg. cases in which persons need urgent hospital treatment.

⁴ In the case shown in Figure 1, the private commodity could be supplied by the private sector. Assuming that the market transaction costs and cost of production of this commodity are the same as in the public sector, market equilibrium would be established at point F in Figure 1, given private supply, but this would be a

to offset against this any economic drawback of increases in taxes needed to cover the loss on providing a free good.⁵

The main point is that in such a case, the desirability of employing user-pays is not an open and closed matter. It is even less so if the price charged to a purchaser is only that required to cover costs of supply excluding market transaction costs. In that case, X_2 of the item would be exchanged in the market, but a loss equivalent to the area of ADKE would be incurred and need to be met by taxpayers. This financial loss is even greater than if the commodity is freely available. In this case, application of the user-pays doctrine leads to a poor economic outcome.

In Australia, the user-pays principle is now applied to most government publications and to the provision of a wide range of data by the Australian Bureau of Statistics. It seems that no account has been taken of factors such as the above in devising this policy. Apart from the above, it is also possible that favourable externalities could be generated by such information, but little attention is paid to this aspect. In such cases, economic doctrine appears to have become an obstacle to 'economic sense', namely the doctrine that market systems are bound to ensure the most efficient and best possible world.

None of the above should be taken to imply that user charges should never be levied on users of publicly provided commodities. When private goods are supplied by the public sector, charges may be appropriate provided the cost of collection of charges is low enough in relation to benefits, as will frequently be the case. However, in determining prices, public institutions should take account of market failure. For example, if the supply of the commodity involves a substantial positive externality, this would call for a lower price than

socially inferior outcome to one in which the commodity is supplied free of charge by the public sector. If, on the other hand, costs of marketing and production are sufficiently lower for private supply compared to public supply, private supply can be more efficient in the Kaldor-Hicks sense. However, the cost difference must be substantial for this to be so. If market transaction costs, however, are quite low, one has to rely on other arguments for provision of free publicly supplied commodities, such as those mentioned in Balestrino (1995, 1999a). Nevertheless, the presence of transaction costs arising from the imposition of user charges can add extra weight to economic arguments for not charging for some publicly supplied commodities.

⁵ By way of clarification of the above modeling, it should also be observed that bounded rationality of parties to exchange, can add to exchange transaction costs and those can be especially important for exchange involving experiential type goods. In relation to such exchange, asymmetric information may exist between parties and sometimes bounded rationality results in incomplete contracts resulting in 'hold-up' and costly legal disputes. Negotiation costs can also be considerable in the case of complex goods and in bilateral situations.

otherwise, and the public institution involved may need a subsidy to remain economically viable. Also monopoly-pricing ought normally to be avoided. Furthermore, issues involving income distribution and second best economic efficiency arguments, raised by A. Balestrino and others, ought not to be ignored.

5. Performance Budgeting and Accounting: Limits to Rationalism in Public

Administration

The agenda of those who favour structural reforms of economies include not only a small government sector and greater use of market mechanisms but also greater use of rationalist-type decision-making models akin to those believed to be adopted by 'economic man'. But such models take inadequate account of the bounded rationality of organisations and can result in procedures that are not administratively efficient as highlighted by Herbert Simon (1961), and subsequent writers, on the theory of organisations. One needs to be wary of unrealistic expectations about the efficiency of managerial rationalism. Performance budgeting and accounting encapsulates belief in the efficiency of managerial rationalism.

Performance budgeting and accounting have been widely adopted in the public service in Australia and are recommended by aid agencies for use by Pacific island nations. Along with the adoption of other measures mentioned above, performance budgeting and accounting are suggested as a means to increase the efficiency of the public sector. With reduced availability of funds for the public sector, application of such methods to increase the economic efficiency (productivity) of the public sector are seen as being essential if the public supply of commodities is to be maintained, or to be reduced by less than otherwise. Reduced foreign aid to Pacific island nations is seen as making it politically imperative for these nations to increase the economic efficiency of their public sector. No doubt other nations are subject to similar pressures as structural adjustment policies are applied.

Performance budgeting is seen as a rational means of public administration, and performance accounting provides for feedback for accountability of public organisations. Combined with short-term potentially renewable contracts for senior administrators of public bodies, it provides an enforcement mechanism. The penalty for 'non-performance' of performance objectives is non-renewal of employment contracts of the managers of relevant public organisations. It involves a more formal and adversarial method of management than has been usual in the past and, for reasons outlined by Earl (1999) and those considered below,

could reduce long run productivity. It also increases the power of relevant ministers over senior public appointments and over the continuance of such appointments in the public service. This can have attendant political dangers.

The proponents of performance budgeting and accounting often seem to have unbounded faith in the scope for exercising rationality and in doing so, ignore transaction costs and other factors (such as limited human capacities) which make bounded rationality inevitable. It is desirable that performance budgeting and accounting be designed taking into consideration these costs and limits.

The following possible problems can arise from the use of this method in public administration:

- Objectives may be over-specified from an operational viewpoint (e.g. too detailed to be operational, too prescriptive to allow for dynamics and flexibility) or under-specified so that objective is stated vaguely and so performance cannot easily be judged.
- Administrators may prefer to concentrate on short-term gains at the expense of long-term benefits 'to show' they are performing well, and so have their employment contracts renewed or other benefits conferred. Consequently, political myopia in the public sector is reinforced by administrative myopia.
- This method may encourage attention to form (conformance with specified goals) rather than foster innovative or entrepreneurial behaviour. Experimentation may be reduced with negative evolutionary impact. Much effort and cost may go into proving how well the public administrator (public institution) has performed and into communications designed to convey the message that high performance is being registered. This, of course, uses public resources that could be used for other purposes. In some cases, it constitutes wasteful advertising.
- The method may encourage top-down administration. This is fraught with difficulties as far as the efficient use of institutional information is concerned and may have a negative impacts on the motivation of lower-level employees.

It is not being claimed that performance budgeting and accounting can never be of value. Rather it should be designed and evaluated taking into account bounded rationality,

transaction costs, uncertainty and evolutionary factors. Furthermore, attention should be brought to such qualifications when recommending such techniques to developing nations. As pointed out by Baumol and Qandt (1964), even rules of thumb can be efficient managerial tools in a world of bounded rationality.

6. Concluding Observations

It is surprising that in the wake of the rapid global adoption of structural adjustment policies, little attention has been given to transaction cost theory (and bounded rationality) in the design of optimal public organisations and appropriate forms of public administration. Hence, there is a possibility of excessive contracting out by public bodies, a greater use than optimal of competitive mechanisms by the public sector, inefficient adoption of the user-pays principle and inappropriate use of performance budgeting and accounting, possibilities illustrated in this paper. Many of those who have warmly embraced the property-rights approach of Ronald Coase seem to ignore his observations about market transaction costs when it comes to the operation of public bodies, ignore wider categories of transaction costs identified by Oliver Williamson, and fail to take account of bounded rationality in designing systems of public administration.

When market transaction cost and competence considerations are taken into account, it is found that the case for outsourcing of activities and supplies by the public sector is weakened. Furthermore, increased lack of tenure in public employment and greater contestability of such employment is found to be a potential source of economic inefficiency in the public supply of commodities. In addition, the existence of high transaction costs in marketing commodities may make user charges inefficient. The presence of such transaction costs can also strengthen the case for their public provision as free goods. Finally, it has been argued that application of rationalist managerial models (akin to the rationalist unitary models favoured by neoclassical economists and caricatured by 'economic man') may not improve the managerial performance of public organisations because these ignore bounded rationality considerations and can have adverse organisational consequences. Therefore, policies for the efficient public provision of commodities are not as straightforward as suggested by many proponents of structural adjustment policies. Greater recognition is needed that several policies recommended by structured adjustment reformers for increasing the efficiency of public provision of commodities, can indeed, have the opposite consequence.

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