Chapter - II : Modelling Bureaucratic Inefficiency

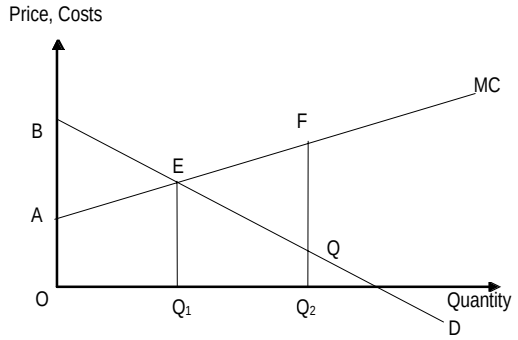
The principal idea behind the privatization boom since 1980s is the universal faith in the efficiency of private firms. However, as already noted above, bureaucratic inefficiency is in fact a comparative claim. Therefore, the case of privatization of tax enforcement must be analyzed in terms of relative inefficiency of tax bureaucracy. Once the critical factors behind bureaucratic inefficiency are isolated, their implications for a private regime may be easily examined. Hence the issue of bureaucratic inefficiency is discussed in this chapter. In doing so, a 'rational choice' approach is taken. The focus is on the mechanism through which efficiency of public sector production in general, and the tax-generation system in particular, is affected due to the opportunist behaviour on behalf of the self-interested government officials.

It is agreed that, compared with the private firms, public organizations are often found to be inefficient, characterized by low rate of returns on capital and low productivity [Santos, 1990, p.140]. Inefficiency in the public sector is attributed to a variety of causes including low standards of administration and the lack of incentives that promote cost-efficiency in the private sector. The rational choice school contends that privatization would lead to better resource allocation in the economy since the public sector is inherently inefficient as an economic entity. According to this school, market solution is better than government intervention because self-interested bureaucrats behave in a way that raises the costs of public sector services and thereby renders government performance inefficient.

Budget Maximizing Bureaucracy

William Niskanen [1971] was one of the firsts to develop a rational choice theory of bureaucratic behaviour and to show how it affects the cost and supply of public goods and services. Like many others, he focused primarily on the direct costs of public sector provision, and explained how, due to bureaucrats' self-interested motive, government bureaux operate at an equilibrium which is sub-optimal compared with the equilibrium level of operation in a market situation [Niskanen, 1975, p. 618-23]. As postulated by Niskanen, a bureaucrat will tend to maximize bureau budget and will be in equilibrium when the real production will be twice the optimal output.

Figure - 1 : Niskanen's Model – Over Production by Bureaucracy



The inefficiency of the bureaucratic mode of production *vis-a-vis* market situation is illustrated in *Figure - 1*. As can be seen, the marginal cost-curve **MC** intersects the demand curve for the society at **E**.

In a market situation, the equilibrium quantity of production will be $\mathbf{Q_1}$, since here the marginal cost of production will be equal to the marginal revenue. However, according to Niskanen, Government is unsure of the true position of the demand curve (**D**) and taking advantage of this uncertainty, bureaucrats push up the costs to the higher level of point, for example, **F**. As a result, the output is $\mathbf{Q_2}$, rather than the optimal quantity $\mathbf{Q_1}$. The area **EFQ** shows the social waste resulting from over-production. This is how the bureaucracy becomes inefficient.

In Niskanen's model the self-interested bureaucrat tries to maximize bureau budget while a private sector manager tries to maximize firm's profit. Why does bureaucrat's self-interest lie in larger budget? Bureaucrats desire larger budget because "[a] larger budget will: (a) provide more jobs for bureaucrats, thereby improving promotion prospects; (b) tend to strengthen the demand for services, making the bureau easier to run; (c) increases the prestige and patronage opportunities of bureaucrats; and (d) generally provide more chances to deliver funds to an individual's pet scheme and private goals" [Dowding, 1995, p. 54].

While all of the four reasons are agreeable, Dowding misses the point that cost-escalation engineered by the bureaucrats may not necessarily lead to a proportionate growth of output. In the developing countries project costs have been found to be artificially inflated. In Bangladesh some large projects based on supplier's credit have been identified where the cost of the project was unduly raised under this or that pretext.

Migou and Belanger [1974] extended the Niskanian model by proposing a managerial utility function in which a manager's utility depends on his personal non-pecuniary gains. In another explanation, Borcherding, Bush and Span [1977] attributed the reason of higher costs of public sector provision to bureaucrat's preference for larger staff than optimal.

Surplus Maximizing Bureaucracy

In a later explanation, Niskanen [1991] appears to have replaced his 'budget-maximizing' thesis with a 'surplus maximizing' one. In the revised and more general model, the surplus maximizing bureaucrat "behaves in a classic monopolistic manner, restricting output levels, and raising the unit cost level charged to the legislature far above the real cost" [Dunleavy, 1996, p.6]. Here a higher budget provision does not result in a proportionate rise in output because the surplus maximizing bureau now charges a unit cost which is higher than the actual unit cost of production. As in the budget-

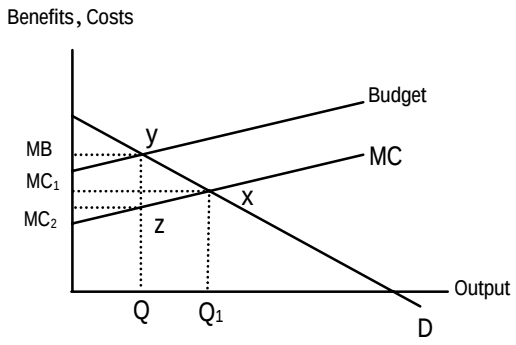
maximizing model, the behaviour of the surplus-maximizing bureaucrat also results in larger bureau budget and, hence, unduly increases the size of government.

It is agreeable that bureaucrats can restrict output and push up the unit cost, nevertheless, the reason behind remains vague and unexplained. It is legitimate to ask what the bureaucrat would do with the surplus budget. Niskanen overlooks the possibility that this surplus budget could be channelized for bribes and kick-backs. If there exists no scope to maximize the budget-surplus, payment of bribes and kick-backs would affect the core project objective, affecting its output and quality.

Here a higher budget provision does not result in a proportionate rise in output because the surplus maximizing bureau now charges a unit cost which is higher than the actual unit cost of production as demonstrated in the following diagram.

In *Figure - 2*, the bureaucrats behave like a monopoly, and instead of producing at $\mathbf{Q_1}$, restricts output at $\mathbf{Q_2}$. Effectively, this occurs because of a higher budget line than the actual marginal cost (**MC**). At this level, the actual marginal cost $\mathbf{MC_1}$ is lower than the budgetary cost $\mathbf{MC_2}$. Notably, **y** which is the interaction between the social demand (**D**) as well as the average benefit (price), reflects a sub-optimal situation where optimal social demand ($\mathbf{Q_1}$) is greater than actual output ($\mathbf{Q_2}$).

Figure - 2 : Monopoly Production



As already indicated above, in modelling self-interested bureaucratic behaviour, Niskanen and others have tended to focus on the nature of bureaucratic behaviour as the principal factor behind the growth of the public sector. Two main inadequacies related to these approaches are worth noting. First, in none of the models is bureaucratic self-interest characterized by any demand for direct personal gains. To be specific, in these models bureaucrat's utility function does not include personal pecuniary gains as an argument[1]. Secondly, the models are related to the top bureaucrats or bureau leaders alone. The impact of the behaviour of the other members of the bureaucracy, particularly the implementation-level public employees, on the operating efficiency of public organizations is not considered at all. Bureaucratic inefficiency is a matter of both higher cost and lower productivity. These result from the behaviour of the implementation-level government employees as well as top level bureaucrats.

A Rent-seeking Bureaucracy

Contrary to the models discussed above, it is the activities of the public employees in general and their self-interested behaviour, characterized by the greed for illegal gratification, which is increasingly the major problem of public administration in a large number of countries around the world. Governments face acute problems of control where public employees show a poor sense of morality and easily part with organizational norms and rules of conduct to engage in corrupt practices for the sake of personal gains. Notably, it is *shirking* rather than *corruption* that is often discussed in literature as the predominant consequence of moral hazard or adverse selection for public administration.

1 Niskanen defines a government bureau as an organization in which the owners and employees do not appropriate any part of the difference between revenues and costs as personal income [Niskanen, 1994, p.270]

While shirking is caused by preference for leisure and lack of motivation for work, corruption is the result of amorality and venality. Corruption is an illegal practice in which a venal public employee obtains bribe through abuse of public authority. Bribery is a genuine form of rent[2] since it is earned by dint of one's possession of official authority. So bribery is a truer kind of 'rent-seeking activity' compared with those commonly understood [*vide* Tullock, 1967; Krueger, 1974].

The monolithic bureau may be a myth [Downs, 1967, p. 133], but it is the predominant nature of public employees' activities that constitutes the characteristic mode of operation of a public organization. It is not essential that all public employees have to be corrupt but that corruption is by and large regular, characteristic and systematic. The amount of bribes charged by different employees may vary. However they will be additive being usually a proportion of the total volume of transactions[3]. In this context, an honest employee may be subsumed as a zero-rated contributor. So a predominantly opportunist bureaucracy in which corruption is rampant and most of the employees resort to bribery most of the time may plausibly be called a rent-seeking bureaucracy[4].

How does such a rent-seeking bureaucracy affect efficiency of public organizations? A rent-seeking bureaucracy causes inefficiency by pushing up the cost structure of public sector production. This may be illustrated by imagining a situation where some input is procured from the private sector for use in the public sector production and the supplier is required to pay bribe to the public employees involved in the procurement process. The supplier recoups the amount paid in bribe

2 'Rent' is understood as the return to land, which is one of the factors of production. It accrues to the landlord because of his ownership. However, in the rational choice framework, 'economic rent' is the return to any factor of production in excess of the lowest price the owner is willing to accept.

3 Lump-sum bribe is also paid. But in case of benefit sharing, the amount paid is usually a proportion of the personal benefit generated through corruption.

4 Dunleavy [1996], however, uses the same term in describing Niskanen's 'surplus maximizing bureaucracy' [Niskanen, 1991].

by raising the procurement bill. Thus the input cost rises pushing up the unit cost of production.

Bribe is then like indirect taxation with 'backward incidence' as the client shifts its burden back to the public exchequer[5]. However, bribery will not directly affect the cost structure when the supplier of public sector inputs can not shift the burden back to the government through cost padding. In such a situation bribes paid to a public employee will constitutes a pure transfer from the private to the public sector and a dead-weight loss for the former. This is the nature of bribery when no additional personal benefit is produced through corruption. Bribe paid to audit office by a retired public employee for the sanction of a genuine pension bill falls within this category.

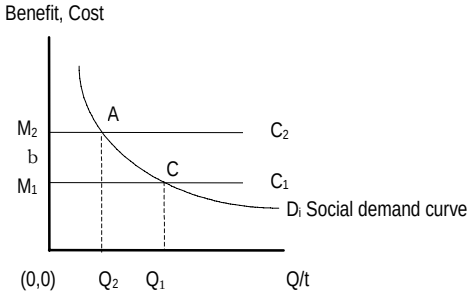
The cost of production will be systematically higher than normal if the bribe extracted by the bureaucrats is redeemed by way of higher input costs. The mechanism through which corruption affects the cost-efficiency of the public sector is explicated with the help of the following diagram. For the sake of simplicity, it is assumed here that a client shifts backward, in full, the burden of bribe, by raising the procurement bill. This is reflected in the upward shift of the cost curves.

As shown in the *Figure - 3*, $\mathbf{M_1C_1}$ is the true cost curve and $\mathbf{Q_1}$ is the socially optimal level of output. Rent-seeking behaviour in the

5 It is difficult to say *a priori*, to what extent the cost of production will go up because of corruption involving backward shifting described above. Depending on the circumstances, costs will go up more or less than, or exactly by the amount of the bribe paid to bureaucracy. First, the supplier will face uncertainty about the amount of bribe to be paid altogether. So, his estimate of bribe and resulting price enhancement may not exactly match the amount eventually extracted by bureaucracy. Secondly, in a competitive situation, a supplier may not raise the procurement cost to fully cover the bribes paid, and may, instead, choose to absorb part of it, conceding a smaller profit. This is often the technique used by suppliers to have a competitive edge in respect of open tenders when the rate of bribery is an open secret and is applied by all suppliers for manipulating the cost figures.

form of bribery causes upward shift of the cost curves. Cost of production will go up in proportion with the amount paid in bribe. Let the new marginal cost curve be represented by $\mathbf{M_2C_2}$. A rent-seeking bureaucracy will effectively operate along the higher marginal cost curve $\mathbf{M_2C_2}$ instead of $\mathbf{M_1C_1}$ reflecting a bribe of **b**. Now the technically 'optimal' production will be settled at output $\mathbf{Q_2}$. An output at $\mathbf{Q_2}$ will mean an under-supply as much as the difference between $\mathbf{Q_1}$ and $\mathbf{Q_2}$. Given the level of budget-outlay, bureaucracy will be inefficient, producing at $\mathbf{Q_2}$, at a higher unit cost, instead of the socially optimal output $\mathbf{Q_1}$.

Figure - 3 : Production by Rent seeking Bureaucracy



In the above scenario, the greater will be the average rate of bribe as a proportion of true cost of production, the higher will be the marginal cost curve and lower will be the actual output with higher unit cost. In a similar way, the amount of total extraction will be higher the larger will be the amount of total budget outlay given a constant rate of bribery.

However, in reality, despite cost-escalation, output may not be restricted by bureaucracy. Therefore, while operating on the marginal cost curve $\mathbf{M_2C_2}$, the level of output may still be at $\mathbf{Q_1}$. That is, rent-seeking may not affect productivity. Bureaucratic inefficiency will be reflected only in higher costs of production.

Corruption in tax bureaucracy

Revenue generation is different from commodity production. Efficiency of the latter demands from the employees maximization of output, given a cost constraint. However, the concept of maximization is irrelevant to the process of revenue generation. Revenue cannot be maximized. Revenue cannot be maximized because, given a tax structure, tax liability related to a transaction is determinate. In this situation, a tax-official's responsibility is to minimize any evasion and avoidance as may be attempted by the taxpayers. The lower the level of evasion and avoidance, the narrower is the gap between potential and actual collection, and the higher is the efficiency of the tax system.

Hood [1986] notes a number of problems of bureaucratic tax enforcement with respect to different kind of taxes. Tax evasion, common to all of them, is a primary source of inefficiency of any tax-system. Evasion is usually viewed as a problem of compliance by the taxpayers [Pyle, 1993]. Despite statutory bindings, voluntary compliance is important for effectiveness of a tax system [Levi, 1988].

However, a tax system may fail to operate efficiently because of information asymmetry at two levels[6]. First, due to lack of competence, a tax-official may fail to observe the actual taxable transaction, and thus fail to verify the tax liability as declared by the taxpayer. Thus attempts at evasion and avoidance will go undetected. This is basically a problem of incompetent enforcement[7] and is very important in taxes like income tax where voluntary compliance is crucially important[8].

6 In a broader sense, the efficiency of a tax system depends much on voluntary compliance by the taxpayers. Lack of voluntary compliance may render a tax system ineffective [Levi, 1988].

7 This may also be viewed as a matter of 'adverse selection'.

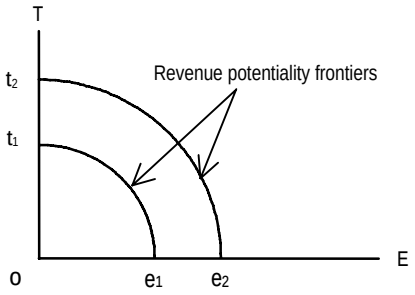
8 This is because income tax is payable on the basis of self-assessment. For customs duty, tax liability is officially determined by a customs officer. However, in income tax, self assessment is subsequently verified by a tax official.

Second, government may fail to observe the true nature of the tax-officials' activity, and then a corrupt tax-official may flout his duty of minimizing evasion and avoidance and enter into 'accountability conspiracy'[9] with the taxpayer. In this case, attempts at evasion and avoidance detected by the tax-officials will remain unreported to the authority and pass unstopped: the venal tax-officials will connive with the taxpayers and let them get away with attempts at evasion in exchange for bribes.

In reality, evasion through corruption of the tax-officials themselves is a menacing problem in a large number of countries. It has been identified as one of the areas of government activities where corruption looms largest [Galtung, 1995, p.1]. In fact, it is more acute for taxes like customs duty where official assessment by a customs officer is the standard procedure for determining the tax liability.

The focus in this section is on the mechanism through which efficiency of a tax system is eroded due to opportunist behaviour of tax officials. How corruption by tax-officials affects government's revenue generation is schematically explained below.

Figure - 4 : Revenue Potentiality Frontier



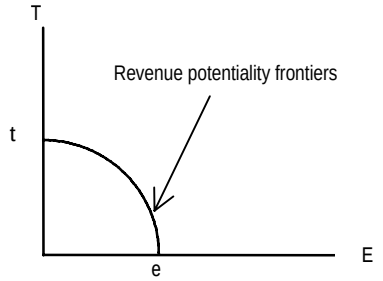
In the *Figure - 4*, the capacity of the tax system and the actual collection of taxes are measured along the vertical axis (**T**). Similarly, potential as well as actual evasion (**E**) is measured along

9 This term is used by Dowding [1995]. A similar term is 'symmetric dishonesty', coined by Virmani [1987].

the horizontal axis (**E**). For a given tax system, the revenue generation capacity is represented by the revenue potentiality frontier, **te** which is concave to the origin. The higher the capacity, the farther is the frontier from the origin. For example, $\mathbf{t_2e_2}$ represents a higher revenue potentiality than $\mathbf{t_1e_1}$.

It may be noted that any point on the revenue potentiality frontier represents a combination of actual collection and the corresponding amount of evasion. When there is absolutely no evasion (*Figure-5*), the amount collected is **t**. This is as much as the maximum revenue generation capacity of the tax system, given the tax structure. When the actual collection is equal to the capacity, the efficiency of the tax system is at its highest. This means that there is no information asymmetry at either of the levels discussed above.

Figure - 5 : Revenue Potentiality Frontier and the Level of Enforcement



On the other hand, it is at least theoretically possible that evasion is as much as the capacity of the tax system[10]. This can happen in a situation when there is absolute corruption as well as incompetence on behalf of the tax-officials[11]. Then, the amount collected will be zero while the amount evaded will be **e**. However, in reality, revenue capacity will be greater than potential evasion

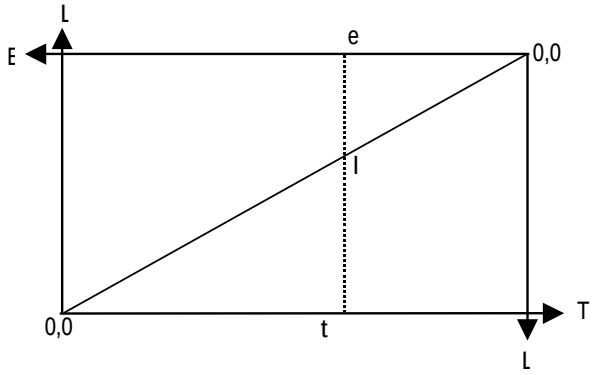
10 In case of smuggling, which means importation through unauthorized route, evasion is as much as the total amount of leviable customs duty.

11 Wrong classification of a commodity may lead to assessment at zero rate of duty, ending up in nil collection.

(**t > e),** indicating the limits of enforcement despite absence of accountability conspiracy. Slack enforcement will be reflected in smaller **(t - e)** differential.

The impact of enforcement in terms of evasion is schematically shown in *Figure - 6*. In this diagram **T** stands for Tax potential, **E** for Evasion potential and **L** represents the Level of enforcement by the revenue administration.

Figure - 6 : Enforcement and Evasion



The box-diagram integrates two functions, namely (a) the relationship between tax-collection and enforcement and (b) the relationship between evasion and enforcement. The diagonal is a straight line that indicates a proportionate relationship between the dependent (i.e. **T, E**) variables and the independent variable (**L**).

At a point in time, let us assume that the level of enforcement is represented by **l** on the diagonal. This implies a collection of tax **t** and evasion of an amount of **e**. Needless to mention that the revenue potential **T** is the sum of **t** and **e**.

Moral hazard and level of evasion

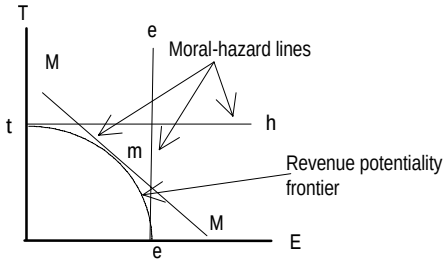
Given a constant level of competence, collection of revenue is constrained by the state of morality of the tax-officials. This

constraint may be represented by a moral hazard line, which is downward sloping indicating a negative relationship between collection and evasion, other things remaining constant. At this point it should be clarified that the moral hazard line has been not called a 'morality line', and its slope does not reflect the 'extent' of either morality or immorality of the individual concerned. Morality is not a continuum because one is either moral or immoral. So what the slope of the moral hazard line reflects is the impact of the constraints operative on the propensity of an amoral individual to engage in corruption.

In absence of information asymmetry, there cannot be any moral hazard in practice, and the tax bureaucracy will function with honesty. So the moral hazard line will be parallel to the horizontal axis as shown by **h**. Conversely, it will be parallel to the vertical axis if the tax bureaucracy is absolutely corrupt as shown by **c**.

In the *Figure - 7*, the moral hazard line **MM** touches the revenue potentiality frontier at **m**. For **MM**, the amount of actual collection and the corresponding amount of evasion is defined by **m**. Any point on the curve **te** upper than **m** will indicate a more efficient tax administration, reflecting lower level moral hazard, and *vice versa*.

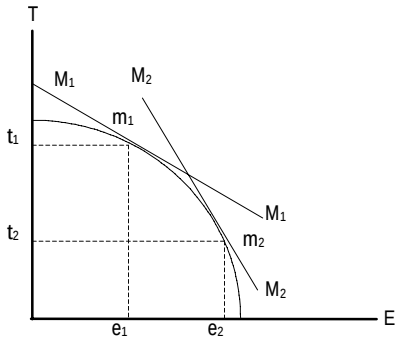
Figure - 7 : Moral Hazard and Information Asymmetry



The impact of variation in moral hazard will be reflected in change of slope of the moral hazard line. As schematically shown in *Figure - 7,* let $\mathbf{M_1M_1}$ represent the moral hazard in a corrupt

bureaucracy, which touches the revenue potentiality frontier **te** at $\mathbf{m_1}$. At this point the amount of collection is denoted by $\mathbf{t_1}$ and the amount of evasion is denoted by $\mathbf{e_1}$.

Figure - 8 : Intensity of Moral hazard and Tax evasion



Let us assume that, under some unfortunate social conditions, the tax-officials are in need of higher real income[12], and they decide to connive with the tax evaders 'more frequently' and/or allow 'larger' evasion than before. In this unfortunate situation, the moral hazard line will be steeper reflecting a deterioration of moral behaviour. Let the new moral hazard line be $\mathbf{M_2M_2}$ that touches the revenue potentiality frontier at $\mathbf{m_2}$. As can be seen, the amount of tax-collection falls from $\mathbf{t_1}$ to $\mathbf{t_2}$ and the amount of evasion escalates from $\mathbf{e_1}$ to $\mathbf{e_2}$ as more attempts at evasion, involving larger amount of revenue, are allowed through corruption. The difference between $\mathbf{e_1}$ and $\mathbf{e_2}$ represents the escalation of evasion due to rise in moral hazard.

Now the crucial question is, given a certain level of competence, what are the factors that determine the shape and position of the moral hazard line? We take up this question in the next chapter and explain the factors that define the nature and extent of moral hazard.

12 *Vide* Chowdhury [1992] for analysis of induction to corruption due to a shortage or fall in real income.