Chapter 1

Fiscal Functions

Learning Objectives :

After learning this chapter you will understand :

- **Justification for the Public Sector**
  - ✓ **The minimal State.**
  - ✓ **Market Versus Government.**
  - ✓ **Efficiency and Equity.**
- **Public Sector Growth**
  - ✓ **Development Models.**
  - ✓ **Wagner's Law.**
  - ✓ **Baumol's Law.**
  - ✓ **A Political Model.**
  - ✓ **Ratchet Effect.**
- **Excessive Government**
  - ✓ **Bureaucracy.**
  - ✓ **Budget Setting.**
  - ✓ **Monopoly Power.**

Basic Concepts

1. Justification for the Public Sector : Two basic lines of argument can be advanced to justify the role of the public sector. These can be grouped under the headings of efficiency and equity. **Efficiency** relates to arguments concerning the aggregate level of economic activity, whereas **equity** refers to the distribution of economic benefits. We begin with efficiency.

1.1 The Minimal State : The most basic motivation for the existence of a public sector follows from the observation that entirely unregulated economic activity cannot operate in a very sophisticated way. In short, an economy would not function effectively if there were no property rights or contract laws.

Without ***property rights***, satisfactory exchange of commodities could not take place given the lack of trust that would exist between contracting parties. This argument can be traced back to Hobbes, who viewed the government as a social contract that enables people to escape from the anarchic ‘‘state of nature’’ where their competition in pursuit of self-interest would lead to a destructive ‘‘war of all against all.’’

Contract laws determine the rules of exchange. They exist to ensure that the participants in a trade receive what they expect from that trade or, if they do not, have open an avenue to seek compensation.

The establishment of property rights and contract laws is not sufficient in itself. Unless they can be policed and upheld in law, they are of limited consequence. Such law enforcement cannot be provided free of cost. Enforcement officers must be employed and courts must be provided in which redress can be sought. In addition an advanced society also faces a need for the enforcement of more general criminal laws.

Consequently, even if only the minimal requirements of the enforcement of contract and criminal laws and the provision of defense are met, a source of income must be found to pay for them. This need for income requires the collection of revenue.

This reasoning illustrates that to achieve even a most minimal level of economic organization, some unavoidable revenue requirements are generated and require financing. From this follows the first role of the public sector, which is to assist with the attainment of economic efficiency by providing an environment in which trade can flourish. ***The minimal state*** provides contract law, polices it, and defends the economy against outsiders.

1.2 Market Versus Government : Unlike the minimal provision and revenue requirements however, there will always be a degree of contentiousness about additional intervention whatever the grounds on which it is motivated. The situations where intervention may be warranted can be divided into two categories: those that involve market failure and those that do not (for example inequality).

When market failure is present, the argument for considering whether intervention would be beneficial is compelling. For example, if economic activity generated externalities (effects that one economic agent imposes on another without their consent), so that there is divergence between private and social

valuations and the competitive outcome is not efficient, it may be felt necessary for the state to intervene to limit the inefficiency that results.

Furthermore a government managed by nonbenevolent officials and subject to political constraints may fail to correct market failures and may instead introduce new costs of its own creation.

1.3 **Equity :** In addition to market failure, government intervention can also be motivated by the observation that the economy may have widespread inequality of income, opportunity, or wealth. In such circumstances the level of economic welfare as viewed by the government may well be raised by a policy designed to alleviate these inequalities.

1.4 **Efficiency and Equity :** When determining economic policy, governments are faced with two conflicting aims. All governments are concerned with organizing economic activity so that the best use is made of economic resources. This is the efficiency side of policy design. To varying degrees, governments are also concerned to see that the benefits of economic activity are distributed fairly. This is the equity aspect of policy design. The difficulty facing the government is that the requirements of equity and efficiency frequently conflict. It is often the case that the efficient policy is highly inequitable, while the equitable policy can introduce significant distortions and disincentives. Given this fact, the challenge for policy design is to reach the correct trade-off between equity and efficiency.

2. **Public Sector Growth :** Various theories have been advanced to explain the growth in the public sector, some of them as discussed as under :

2.1 **Development Models :** The basis of the development models of public sector growth is that the economy experiences changes in its structure and needs as it develops. Tracing the nature of the development process from the beginning of industrialization through to the completion of the development process is a story of increase in the public sector expenditure.

The ***early stage of development*** is viewed as the period of industrialization during which the population moves from the countryside to the urban areas. To meet the needs that result from this, there is a requirement for significant infrastructural expenditure in the development of cities.

In what are called the ***middle stages of development***, the infrastructural expenditure of the public sector becomes increasingly complementary with expenditure from the private sector. Developments by the private sector, such as factory construction, are supported by investments from the public sector, such as the building of connecting roads. Urbanization and increase in city size generates a range of externalities such as pollution and crime. An increasing proportion of public expenditure is then diverted away from spending on infrastructure to the control of these externalities.

Finally, in the ***developed phase*** of the economy, there is less need for infrastructural expenditure or for the correction of market failure. Instead, expenditure is driven by the desire to react to issues of equity. This results in transfer payments, such as social security, health, and education, becoming the main items of expenditure.

2.2 **Wagner's Law :** The share of the public sector in gross domestic product had been increasing over time in almost all the countries. The content of Wagner's law was an explanation of this trend and a prediction that it would continue. In contrast to the basic developments models, Wagner's analysis provided a theory rather then just a description and an economic justification for the predictions. The basis for the theory consists of three distinct components.

First, it was observed that the growth of the economy results in an increase in complexity. Economic growth requires continual introduction of new laws and the development of the legal structure. Law and order imply continuing increases in public sector expenditure.

Second, there was the process of urbanization and the increased externalities associated with it.

The ***final*** component underlying Wagner's law is the most behavioral of the three and is what distinguishes it from other explanations. Wagner argued that the goods supplied by the public sector have a high income elasticity of demand. This claim appears reasonable, for example, for education, recreation, and health care. Given this fact, as economic growth raises incomes, there will be an increase in demand for these products. In fact from a high elasticity it can be inferred that public sector expenditure does rise as a proportion of income. This conclusion is the substance of Wagner's law.

1.3 **Baumol's Law :** Baumol's law starts from an observation about the nature of the production technology in the public sector. The basic hypothesis is that the technology of the public sector is labor-intensive relative to that of the private sector. In addition the type of production undertaken leaves little scope for increases in productivity and that makes it difficult to substitute capital for labor.

Competition on the labor market ensures that labor costs in the public sector are linked to those in the private sector. Although there may be some frictions in transferring between the two, wage rates cannot be too far out of line. However, in the private sector it is possible to substitute capital for labor when the relative cost of labor increases. Furthermore technological advances in the private sector lead to increases in productivity. These increases in productivity result in the return to labor rising.

Since the public sector cannot substitute capital for labor, the wage increases in the private sector feed through into cost increases in the public sector. Maintaining a constant level of public sector output must therefore result in public sector expenditure increasing. If public sector output/private sector output remain in the same proportion, public sector expenditure rises as a proportion of total expenditure. This is ***Baumol's law***, which asserts *the increasing proportional size of the public sector*.

Problems in the Baumol's Law

There are a number of problems with this theory. It is entirely technology driven and does not consider aspects of supply and demand or political processes. There are also reasons for believing that substitution can take place in the public sector. Major productivity improvements have also been witnessed in universities

and hospitals. Finally, there is evidence of a steady decline in public sector wages relative to those in the private sector. This reflects lower skilled labor being substituted for more skilled.

2.4 **A Political Model :** A political model of public sector expenditure needs to capture the conflict in public preferences between those who wish to have higher expenditure and those who wish to limit the burden of taxes. It must also incorporate the resolution of this conflict and show how the size and composition of actual public spending reflects the preferences of the majority of citizens as expressed through the political process.

Consider an economy with H consumers whose incomes fall into a range between a minimum of 0 and a maximum of $\hat{y}$. The government provides a public good that is financed by the use of a proportional income tax. The utility of consumer i who has income y_i is given by

$$U_i(t, G) = (1 - t)y_i + b(G),$$

where t is the income tax rate and G the level of public good provision. The function b(.) represents the benefit obtained from the public good and it is assumed to be increasing (so the marginal benefit is positive) and concave (so the marginal benefit is falling) as G increases. We denote by m the mean income level in the population of consumers, so the government budget constraint is

$$G = tH\mu$$

The ideal level of public good provision for the consumer is given where

$$b'(G) = \frac{y_i}{H\mu}$$

This condition relates the marginal benefit of an additional unit of the public good, $b'(G)$, to its marginal cost $\frac{y_i}{H\mu}$.

The marginal benefit of the public good has been assumed to be a decreasing function of G, so it follows that the preferred public good level is decreasing as income rises.

2.5 **Ratchet Effect :** Models of the ratchet effect develop the modeling of political interaction in a different direction. They assume that the preference of the government is to spend money. In contrast, it is assumed that the public do not want to pay taxes. Higher spending can only come from taxes, so by implication the public partially resists this; they do get some benefit from the expenditure. The two competing objectives are moderated by the fact that governments desire re-election. This makes it necessary for government to take some account of the public's preferences.

The equilibrium level of public sector expenditure is determined by the balance between these competing forces. In the absence of any exogenous changes or of changes in preferences, the level of expenditure will remain relatively constant. Occasionally, though, economies go through periods of significant upheaval such as occurs during wartime. During these periods normal economic activity is disrupted. Furthermore the equilibrium between the government and the taxpayers becomes suspended. Ratchet models argue that wartime permits the

government to raise expenditure with the consent of the taxpayers on the understanding that this is necessary to meet the exceptional needs that have arisen.

The final aspect of the argument is that the level of expenditure does not fall back to its original level after the period of upheaval. Several reasons can be advanced for this. *First*, the taxpayers become accustomed to the higher level of expenditure and perceive this as the norm. *Second*, debts incurred during the period of upheaval have to be paid off later. This requires the raising of finance. *Third*, promises made by the government to the taxpayers during periods of upheaval then have to be met. These can jointly be termed ratchet effects that sustain a higher level of spending. *Finally*, there may occur an inspection effect after an upheaval whereby the taxpayers and government reconsider their positions and priorities.

3. **Excessive Government :** There are in fact many economists who argue that public sector expenditure is too large and represents a major burden on the economy. While the evidence on this issue is certainly not conclusive, there are a number of explanations of why this should be so. Several are now described that reach their conclusions not through a cost–benefit analysis of expenditure but via an analysis of the functioning of government.

3.1 **Bureaucracy :** A traditional view of bureaucrats is that they are motivated solely by the desire to serve the common good. They achieve this by conducting the business of government in the most efficient manner possible without political or personal bias. This is the idealistic image of the bureaucrat as a selfless public servant. There is a possibility that such a view may be correct. Having said this, there is no reason why bureaucrats should be any different than other individuals.

Adopting this latter perspective, the theoretical analysis of bureaucracy starts with the assumption that bureaucrats are indeed motivated by maximization of their private utilities. Unlike similarly positioned individuals in the private sector, they cannot exploit the market to raise income. Instead, they resort to obtaining utility from pursuing nonpecuniary goals. The bureaucrat can therefore be modeled as aiming to maximize the size of his bureau in order to obtain the greatest nonpecuniary benefits. It is as a result of this behavior that the size of government becomes excessive.

To demonstrate excessive bureaucracy, let y denote the output of the bureau as observed by the government. In response to an output y, the bureau is rewarded by the government with a budget of size $B(y)$. This budget increases as observed output rises ($B'(y) > 0$) but at a falling rate ($B''(y) < 0$). The cost of producing output is given by a cost function $C(y)$. Marginal cost is positive ($C'(y) > 0$) and increasing ($C''(y) > 0$). It is assumed that the government does not know this cost structure—only the bureaucrat fully understands the production process.

The decision problem of the bureaucrat is then to choose output to maximize the budget subject to the requirement that the budget is sufficient to cover costs. This optimization can be expressed by the Lagrangian

$$L = B(y) + \lambda[B(y) - C(y)];$$

where λ is the Lagrange multiplier on the constraint that the budget equals cost. Differentiating the Lagrangian with respect to y and solving characterizes the optimum output from the perspective of the bureaucrat, y^b, by

$$B'(y^b) = \frac{\lambda}{\lambda+1} C'(y^b)$$

Since the Lagrange multiplier, λ, is positive, this expression implies that B' < C' at the bureaucrats optimum choice of output.

We wish to contrast the bureaucracy outcome with the outcome that occurs when the government has full information. A simpler way is to determine the efficient output by drawing an analogy between the bureau and a profit-maximizing firm. By this analogy, the bureau should choose output to maximize its budget less costs, $B(y) - C(y)$. For the bureau this is the equivalent of profit maximization. The efficient output y^* is obtained when $B'(y^*) = C'(y^*)$.

This shows bureaucrat chooses output y^b which more than the efficient output y^*.

3.2 **Budget Setting :** Budget setting is simple process by which budget of a bureau can be obtained. Let B_t represents budget for year t and B^c_{t+1} is the budget claimed by the bureaucrat for the period t + 1. The bureaucrat obtains this claim by inflating the budget of last year by a proportion α (where α > 0)

$$B^c_{t+1} = (1 + \alpha)B_t$$

When government receives such claim it assumes that the budget claim is over inflated. So it reduces the claim by a proportion γ (where 0 < γ < 1) to reach at the final allocation. The agreed budget is written as

$$B_{t+1} = [1 - \gamma]B^c_{t+1} = [1 - \gamma][1 + \alpha]B_t$$

The determination of budget by this process is devoid of any basis in efficiency. Also, if α > γ then $B_{t+1} > B_t$, but if α < γ then $B_{t+1} < B_t$. Although either case is possible, the observed pattern of growth lends some weight to the former assumption.

3.3 **Monopoly Power :** In market economy the equilibrium is obtained by the balance between demand and supply. In the absence of monopoly power, the equilibrium that is achieved will be efficient. There are two reasons why efficiency is not possible in public sector. First, the public sector can award itself a monopoly in the supply of its goods and services. Second, this monopoly power may be extended into market capture.

Generally, a profit-maximizing monopolist will always want to restrict its level of output below the competitive level so that monopoly power will provide a tendency for too little government rather than the converse. This would be a powerful argument were it not for the fact that the government can choose not to exercise its monopoly power in this way. If it is attempting to achieve efficiency, then it will certainly not do so. Furthermore, since the government may not be following a policy of profit maximization, it might actually exploit its monopoly position to oversupply its output. This takes the analysis back in the direction of the bureaucracy model.

Goods supplied by the public sector are complex in nature and not fully understood by those consuming them. Natural examples of such goods would be

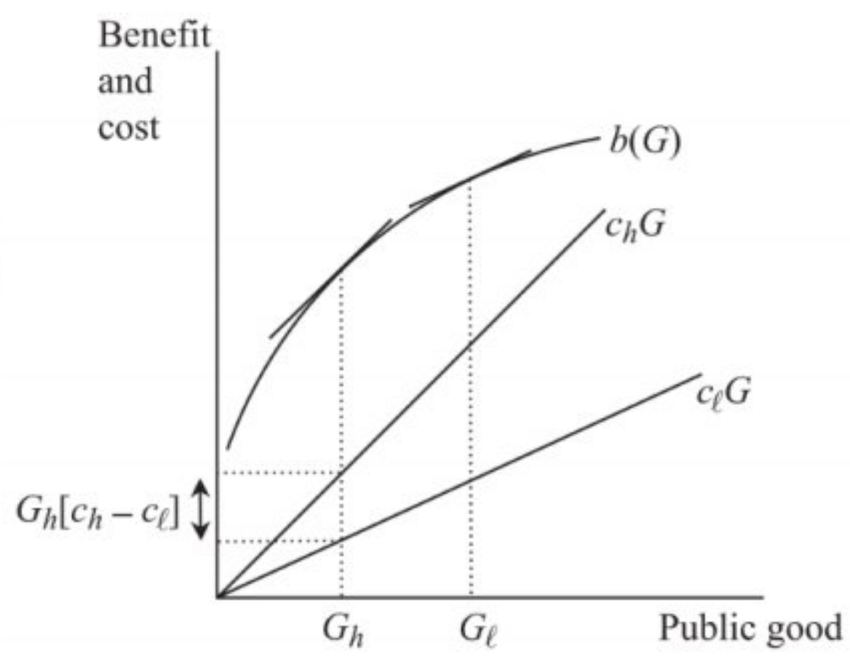
education and health care. In both cases the consumer may not understand quite what the product is, nor what is best for them. Demand for these goods is determined by specialists such as teachers and doctors. Furthermore these same specialists are also responsible for setting the level of supply. In this sense they can be said to capture the market. Naturally, since most would benefit from an expansion of their profession, within limits, this gives a mechanism that leads to supply in excess of the efficient level.

3.4 **Corruption :** Corruption does not emerge as a moral aberration but as a general consequence of government officials using their power for personal gain. Corruption distorts the allocation of resources away from productive toward rent-seeking occupations. Corruption is not just redistributive (taking wealth from others to give it to some special interests), it can also have enormous efficiency costs. By discouraging the entrepreneurs on whom they prey, corruptible officials may have the effect of stunting economic growth.

3.5 **Government Agency :** The imperfect information of voters enables the government to grow larger by increasing the tax burden. From this perspective government growth reflects the abuse of power by greedy bureaucrats. The central question is then how to set incentives that encourage the government to work better and to cost less, subject to the information available.

To illustrate this point, consider a situation in which the cost to the government of supplying a public good can vary. The unit cost is either low, at c_l, or is high, at c_h. The gross benefit to the public from a level G of public good is given by the function $b(G)$ that is increasing and concave. The net benefit is $b(G) - t$, where t is the tax paid to the government for the public good provision. The chosen quantity of the public good will depend on the unit cost of the government. The benefit to the government of providing the public good is the difference between the tax and the cost. So, when the cost is c_i, the benefit is $t_i - c_iG_i$.

When the public is informed about the level of cost of the government, the quantity of public good will be chosen to maximize the net benefit subject to the government breaking even. For cost ci, the public net benefit with the government breaking even is $b(G_i) - c_iG_i$. The public will demand a level of public good such that the marginal benefit is equal to the marginal cost, so b'$(G_i) = c_i$, and will pay the government $t_i = c_iG_i$, for i = h; l, as shown in the adjoining figure.



Now assume that the public cannot observe whether the government has cost c_l or c_h. The government can then benefit by misrepresenting the cost to the public: for instance, it can exaggerate the cost by adding expenditures that benefit the government but not the public. When the cost is high, the government cannot

exaggerate. When the cost is low, the government is better off pretending the cost is high to get tax t_h for the amount G_h of public good instead of getting t_l for producing G_l. Misrepresenting in this way leads to the benefit of $G_h[c_h - c_l]$ for the government, which is shown in above figure.

To eliminate this temptation taxpayers must pay an extra amount $r > 0$ to the government in excess of its cost when the government pretends to have the low cost. This is called the informational rent. Since the truly high-cost government cannot further inflate its cost, the public pay $t_h = c_h G_h$ when the government reports a high cost. If the reported cost is low, the taxpayers demand the amount G_l of public good defined by b'$(G_l) = c_l$ and pay the government $t_l = c_l G_l = r$, where r is exactly the extra revenue the government could have made if it had pretended to have high cost. To give a government with a low cost just enough revenue to o¤set its temptation to pretend to have higher cost, it is necessary that $r = G_h[c_h - c_l]$. This is the rent required to induce truthful revelation of the cost and have the provision of the public good equal to that when the public is fully informed.

Theory Questions

Q1. How the budget setting process and corruption are the source of the excessive public sector expenditure? Explain. **[Eco. (H) 2021]**

Q2. Write short notes on the following theories of public sector growth :
(i) Wagner's Law,
(ii) Ratchet effect. **[Eco. (H) 2018]**

Q3. Explain with the help of an economic model how existence of bureaucracy can lead to excessive public sector expenditure? **[Eco. (H) 2016]**