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Public Finance and Policy

SEMESTER-II

ECONOMICS

BLOCK : 1



KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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COURSE INTRODUCTION

This course entitled *'Public Finance and Policy'* is one of the second semester courses of MA in Economics programme offered by this University. In fact, this is the fourth course of the semester. We all know that the Public Finance basically deliberates on discussing the financial aspects of the public authorities. The course deals with certain theoretical as well as policy matters relating to the area of public finance. This course comprises 14 units and has been divided into two blocks. The first block consists of seven units while the second block consists of the rest of the units.

BLOCK INTRODUCTION

This is the first block of the course and consists of seven units. Unit 1 offers a broad overview of the subject Public Finance. In Unit 2, we shall discuss public goods and market failure. Here, a few important concepts like the free rider's problem, common resources, tragedy of commons etc., have been disucssed. In Unit 3, a few theories on public choice have been discussed. Unit 4 deliberates on externalities and market inefficiencies. The unit discusses Coase's voluntary bargaining in small gropus model among other related concepts. Unit 5 deals with the theories of public expenditure. In this unit, the canons of public expenditure have been discussed. Other than those, a few important theories of public expenditure, viz., Lindahl's Voluntary Exchange Theory, Samuelson's Theory of Public Expenditure have been discussed. The next unit deliberates on public expenditure and project appraisal. Among other important concepts, the role of public expenditure developing economy, government investment and social cost-benefit analysis have been discussed in the Unit. The last unit of the first block, i.e., Unit 7 discusses publlic expenditure analysis. In this unit, many important concepts like the role of taxes, over-consumption and under-consumption of marketed goods under fixed quantity subsidy and the various allocative and dstributive effects of excise subsidy have been discussed.

In the next block, we shall discuss the remaining seven units of the course.

While going through a unit, you will notice some along-sode boxes, which have been included to help you know some of the difficult, unseen terms. Some 'ACTIVITY' (s) has been included to help you apply your own thoughts. Again, we have included some relevant concepts in 'LET US KNOW' along with the text. At the end of sections, you will get 'CHECK YOUR PROGRESS' questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with 'ANSWERS TO CHECK YOUR PROGRESS' given at the end of each unit.

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UNIT 1: INTRODUCTION TO PUBLIC FINANCE

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Public Finance and its Scope

- 1.3.1 Meaning and Definition of Public Finance
- 1.3.2 The Subject Matter and Scope of Public Finance
- 1.3.3 Private Finance and Public Finance

1.4 Role of Government in an Economy

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- 1.4.3 Stabilisation Function of Government

1.5 Let Us Sum Up

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1.7 Answers to Check Your Progress

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1.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- put forward the meaning of public finance
- state the scope of public finance in an economy
- discuss the subject matter of public finance
- outline the role and significance of government in an economy
- discuss how government allocates an economy's resources for furthering people's welfare and bolstering growth and development of the economy
- describe the policy measures adopted by the government to ensure stabilisation in an economy.

1.2 INTRODUCTION

Public finance is a study of various financial aspects of the government. In a very restricted sense, it is preferred to be defined as the

study of the nature and principles of state expenditure and state revenue. The origin of development of the subject can be traced back to the 17th century with rigorous scientific and systematic explanation found in the book "An Inquiry into the Nature and Cause of Wealth of Nations" authored by Adam Smith in 1776. Smith devoted Book-V of the 'Wealth of Nations' to public expenditure, public revenues and public debts. Similarly, David Ricardo, in his "Principles of Political Economy and Taxation" (1817), also discussed the effects of different taxes on various sectors in an economy though no attention was paid on various aspects of government expenditure. Another classical economist J.S. Mill lavishly dealt with classification of taxes into direct and indirect, the comparative effects of different taxes and various problems of national debt in his book "Principles of Political Economy" (1848). Classical economists viewed the subject matter of public finance under three different aspects viz. revenue, expenditure and public debts of the state. In the writings of neo-classical economists, public finance as a subject did not receive significant attention. The subject didn't receive place in the major works of Marshall and Edgeworth, the two great economists at the end of the nineteenth century. It was Bastable (1892) who for the first time made an attempt to make a systematic study of public finance and his book "Public Finance" was exclusively devoted to the study of public finance. The works of Dalton in his book "Principles of Public Finance" published in 1922 and that of Prof. Pigou, "Public Finance" published in 1928 further widened the discussion on the public finance as a subject of study.

1.3 PUBLIC FINANCE AND ITS SCOPE

1.3.1 Meaning and Definition

Public finance is a study of the financial aspects of the government. In a narrow sense public finance deals with the income and expenditure of public authorities where the term public is used to refer to the Government or State and public authorities include

all sorts of governments: Central, State and Local. However, considering various dimensions of the role of government in an economy besides revenue and expenditure, such restricted definition of public finance is not applicable in modern times. A few broad definitions of public finance are presented below.

According to Bastable “Public finance deals with expenditure and income of the public authorities of the state and their mutual relation as also with the financial administration and control”.

According to Dalton, “Public finance deals with income and expenditure of public authorities and with the manner in which one is adjusted to the other”.

According to Findlay Shiras, “Public finance is the study of the principles underlying the spending and raising funds by public authorities.”

According to Plehan, “Public finance is the science which deals with the activities of statesman in obtaining and applying material means necessary fulfilling the proper functions of the state.”

Prof. Harold Groves defines public finance as “A field of enquiry that treats on income and outgo of government (federal, state and local). In modern times this includes four major divisions: public revenue, public expenditure, public debt and certain problems of fiscal system as whole such as fiscal administration and fiscal policy.”

Summing up these definitions it can be understood that public finance is concerned with collection of revenues, expenditure of this revenue, and their administration by the public authorities. Interestingly, it is not concerned with how revenue and expenditure process i.e. fiscal operations of the Government is affecting or will affect the economic and social aspects of the economy. Viewed from this perspective, the scope of public finance can be said to be narrow and the science of public finance can be regarded as a positive science. However after the Great Depression in 1930 and

especially publication of J. M. Keynes “General Theory of Employment, Interest and Money” in 1936 the influence of government fiscal operations on the overall economic activity and the level of employment became an important part of the study of Public Finance. Since appraisal of the impact of fiscal operations/ policies of the government on overall economic activity involves value judgment, the scope of public finance is widened the study has become more normative in nature. The study of effects of fiscal operations is evident from the definitions of a few proponents of public finance. For example reference may be made to Brownlee and Allen which states that “It is with the public economy—with the effects of governmental money spending and money raising activities upon the allocation of resources, the distribution of income and general level of economic activity within the economy— that the bulk of our analysis is concerned.” In the similar context we can refer to Prof. B. P. Herber who in his book “*Modern Public Finance”* states that “The government means of allocation is accomplished through the budgetary practices of taxing and spending— in addition to the allocation function, public finance is also concerned with three other major areas of economic activity – distribution, stabilisation and economic growth —— Thus, public sector decision making, necessarily influences allocation, distribution, stabilisation and economic growth.:” it is thus clear that public finance studies and analyses the effects government budgetary practices of taxing and spending on the four major aspects: (1) allocation of scare productive resources, (2) distribution of income and wealth, (3) economic stability and level of employment (4) economic growth of a given economy.

The definition of public finance is further widened by C.S. Shoup and O.H. Brownlee and R.D. Allen. According to them, “The discipline of public finance describes and analyses government services, subsidies and welfare payments and the methods by which the

expenditures to these ends are covered through taxation, borrowing, foreign aid and the creation of new money." Thus, it can be said that public finance deals with resource allocation system that makes little use of the pricing mechanism, through considerable use of money. It thus, points out that there are four methods of raising resources of public authorities (a) taxation, (b) borrowing (internal and external), (3) foreign aid and (d) creation of new money or resort to deficit financing. It is thus clear that the scope of public finance has been enlarged by the modern economists. Besides revenue and expenditure process, public finance covers discussion on the effects of fiscal operations upon the economic and social aspects of an economy. It is also clear from the above definitions that public finance has several branches; public revenue, public expenditure, public debt, budget policy and the fiscal policy.



LET US KNOW

- Public finance deals with the income and expenditure of public authorities
- According to Bastable "Public finance deals with expenditure and income of the public authorities of the state and their mutual relation as also with the financial administration and control".
- According to Dalton, "Public finance deals with income and expenditure of public authorities and with the manner in which one is adjusted to the other".
- Public finance has several branches: public revenue, public expenditure, public debt, budget policy and the fiscal policy.



CHECK YOUR PROGRESS

Q 1: What is public finance?

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Q 2: Name the book authored by Adam Smith.

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Q 3: Name two classical economists?

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Q 4: Who gave for the first time the systematic definition of Public finance?

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Q 5: Give a suitable definition of public finance.

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Q 6: Public finance studies only revenue and expenditure aspects of budget policy. (True/False)

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Q 7: Mention the branches of public finance.

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1.3.2 The Subject Matter and Scope of Public Finance

From various definitions of Public Finance it is clear that the subject matter of public finance essentially hovers around public revenue and public expenditure and issues related to them. However, in the modern context, public finance takes into account a wide range of issues that broadly addresses the issues related to private finance and maximisation of social welfare. The subject matter of public finance can be summed up under the following heads:

- ***Public Income/Revenue-*** This part includes the study of the methods of raising public revenues and the principles of taxations. The study of taxation mainly covers analysis of the principles and characteristics of sound tax system, different types of taxes and their merits and demerits, the impact of shifting and incidence

of taxation and the problems to which they give rise to, taxable capacity and its determinants, effects if taxation on production, employment, distribution and economic stability, the use of taxation as fiscal instrument, different types of tax rates, tax evasion and the issue of black money.

- ***Public expenditure-*** This part consists of the study of the principles, canons of public expenditure, increase in state activities and growth of public expenditure, effects of public expenditure on production, employment, allocation of resources, redistribution, price stability, public expenditure as fiscal instrument, role and efficacy of public expenditure as means of controlling economic fluctuation etc.
- ***Public Debt and Debt Management-*** This covers the causes and methods of public borrowing as well as public debt management. The specific issues are like methods of internal and external borrowing, redemption of public debt, the sources of public borrowing, debt burden and economic effects of public debt, public debt as fiscal policy in managing economic stability on the whole.
- ***Financial management-*** This part consists of the preparation and sanctioning of the budget. Budget being the annual financial statement of the govt. for a financial year this is an important part of public finance and covers all issues such as objectives and methods of framing the budget, sanctioning and auditing of the budget, mechanism for implementation of the budget etc.
- ***Federal sharing of resources-*** This is an important area of the subject matter of public finance. It mainly covers the rationale and principles which generally govern the sharing of resources among different levels of govt. viz. central, state and local, in a federation. It also discusses the derivation and

compensation criteria of resource sharing, the components of tax sharing, loans and grants, fiscal equity and fiscal residue (Fiscal residue is defined as expenditure benefits minus loss due to tax payments) in relation to horizontal and vertical balances through transfer of resources from developed to underdeveloped areas.

- ***Controlling public expenditure-*** The is concerned with the study of how to ensure rationale and effective use of economy's resources and optimum utilisation of govt. funds/expenditure so as to maintain economic stability or arrest fluctuation in general price level in an economy. The subject matter of the public finance in this connection is concerned with administrative control known as treasury control, audit control and parliamentary control.
- ***Fiscal policy and economic stabilisation-*** This part studies the use of public finance operations to bring about economic stability and growth in the economy. The economic stabilisation as a part of fiscal policy is one of the recent advancement of subject of public finance and gained its importance after the great depression that world suffered in 1930. The government adopts various counter cyclical fiscal measures to stabilise the economy.
- ***Resource allocation-*** As we all know private sector or market economy suffers from allocation inefficiency (as price is always happens to be greater than marginal cost of production). In this regard state plays an important role in achieving allocation efficiency by using fiscal means like taxation, public expenditure and subsidy programmes. It broadly aims at realising the principle of equi-marginal returns in both production and consumption outlays. Resource allocation thus, is an important subject matter of the study of public finance.

All these comprise the subject matter of public finance. It should however be noted that the above areas are not distinct and separate from each other, rather they are intimately related to one another.

1.3.3 Private Finance and Public Finance

While discussing public finance, it is important to look into private finance too. Private finance is of two categories: personal finance and business finance. Personal finance is the financial planning of individuals such as people, families and single consumers and includes savings accounts, insurance policies, consumer loans, stock market investments, retirement plans and credit cards and so on. Business Finance is the financial planning of the business organizations and involves asset acquisition and proper allocation of funds in a way that maximizes the achievement of set goals.

There are many similarities and dissimilarities between private finance and public finance. These are as follows:

Similarities:

- **Scarcity of Resources:** Both Private and Public finance have limited resources and try for optimum use of these scarce resources. Because of the scarcity of resources an individual has to satisfy his more intense need and leave the rest to be satisfied. Later, the public authority has also to choose the more urgent want to be satisfied first.
- **Rationality:** Both private and public finances are based on rationality. A rational individual tries to maximise his personal gain by allocating his given income. Similarly, the government also behaves rationally in the sense that it seeks to maximise society's welfare from the expenditures made in different activities.

- **Activities centring financial transactions:** Both private and public sector make financial transactions on same activities such as commercial and agricultural activities, mobilisation of industrial inputs, movement of production factors, transportation of goods and services.
- **Principle of finance:** Private individuals try to get maximum satisfaction through the application of the principle of equi-marginal returns. A.C. Pigou prescribed the same principle for public finance to allocate resources in different activities in such a way that marginal returns of satisfaction for each type of outlay are equal.

Dissimilarities: There are some basic differences between private and public finance. Some of the important differences are the following:

- **Objectives are different:** Private individuals mainly concerned with private consumption or profit while government aims at promoting the society's welfare. Public finance studies the problems that centre around the revenue expenditure process of government but private finance is related to those aspects of the economy that arise in the course of operation of private households.
- **Income-expenditure adjustment:** Private individuals have generally to adjust their expenditure to income but public authorities adjust their income to expenditure. Because the income of the private individuals is known but income of the government is not known. Therefore the government has to first set the expenditure and after that it has to mobilise resources to finance them.
- **Period of budgeting:** Private individuals have no fix time period over which the accounts must be balanced. However, the public

authorities have financial year for which government budget is framed and balance of the budget is annually achieved.

- **Elasticity of finance:** The sources of income of the private individuals are limited. They are subjected to many restrictions like licence, permit and quota etc. while the public authorities can increase their income by imposing new taxes or by raising tax rate or by borrowing.
- **Borrowing power:** Internal borrowing is absent in case of private individuals. Because an individual cannot borrow from himself. But the public authorities can borrow both internally and externally. The government can borrow internally from its own people.
- **Printing of Currency notes:** The government can print new money when it fails to mobilise additional resources from the usual channels. But such a power is not given to private individuals.

Above similarities and dissimilarities between private and public finance are summarised below for quick reference.

Public Finance Vs. Private Finance

Basis of comparison	Public Finance	Private Finance
Income and expenditure adjustment	Income adjusted according to expenditure	Expenditure adjusted according to income
Borrowing	Can borrow both internally and externally	Can borrow externally
Currency ownership	Control currency totally	Has no rights over currency
Present vs. Future income	Investment done for long term benefits	Short term benefit expected.
Objective	To create social benefit	To create profits
Coercion to require revenue	Revenue can be forcefully acquired through taxation	Cannot be forcefully acquired
Massive and deliberate changes	Can make instant changes on income deliberately	Has no capacity to make instant changes
Surplus budget	Surplus budget is a vice in this sector	Surplus budget is virtue



LET US KNOW

Public vs. Private Finance

- The public sector comprises of all the government owned agencies, companies and state offices. The private sector comprises of businesses, companies and the individuals.
- The public sector's main objective is to create social benefits while the private is to make profits.
- The overall benefits acquired for the public sector's strategies is the citizens themselves, however the beneficiary of the private finance strategies are the owners, shareholders or the individuals themselves.
- Despite having all these differences both the public and private finance sectors have some similarities. Both face the issue of scarcity, need for borrowing and the importance of precedence of income.
- Both the public and private finance contribute towards a country's economy and are co-dependent neither can exist without the other.



CHECK YOUR PROGRESS

Q 8: State the subject matters of public finance.

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Q 9: What is included under public revenue as the subject matter of public finance?

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Q 10: What is private finance? State two similarities between private and public finance/

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1.4 ROLE OF GOVERNMENT IN AN ECONOMY

We all know that the need of a government in an economy is felt when market fails to allocate resources efficiently. It is believed that a market serves society by efficiently organising economic activity. In a market it is the price that communicates the wants and limits of a diverse society so as to bring about coordinated economic decisions in the most efficient manner and hence no central planner is needed to allocate resources. Rather, market prices allocate resources to those who value them the most based on Adam Smith's invisible hands and thereby results in what is best for the society as a whole. To be very specific, in a market economy, self-interest and competition among economic agents result in private optimum and lead to enhancement of social welfare. Thus, a market is successful when it produces an efficient allocation of resources. It is important to mention here that efficiency in economics is defined as *Pareteo optimality* – a condition where resources are so allocated that through reallocation no one can be made better off without worsening off the others. But markets can fail especially when private means contradict with the social ends of an efficient allocation of resources. In nutshell, in the presence of externalities both in consumption and production, in case of provision of social goods, in the absence of well defined property rights, in the presence of asymmetric information among the parties involved in exchange of goods and services etc. a market fails to allocate resources efficiently. Since market mechanism alone cannot perform all economic functions, there is need of public policy to guide, correct and supplement in certain aspect of economic decisions. Musgrave and Musgrave (2011) notes that some forms of government or public regulation is needed (a) to ensure competition based on conditions such as free entry and perfect knowledge of the economic agents, (b) to eradicate inefficiency in competition due to decreasing cost, (c) to provide legal structure to give protection and enforce contractual arrangements and exchange needed for market operations, (d) to correct problem of externalities using public policy such as budgetary provisions, subsidy and tax penalty, (e) to ensure employment, price level stability and the socially desired rate of economic growth etc.

In this context we can mention three distinct functions of government or any budget policy of the govt. *viz.* (1) allocation function: that basically considers provisions for social goods or the process by which total resource use is divided between privateand social goods or provision in which the mix of private and social good is chosen. (2) distributive function: that mainly deals with adjustment of the distribution of income and wealth to ensure fair or just state of distribution and (3) stabilisation function : which explains the use of govt. policy or budget policy to maintain high employment, a reasonable degree of price level stability and an appropriate rate of economic growth. Following is the illustration of these functions of the government.

1.4.1 Allocation Function of Government

Since economic resources are scarce production of a good involves opportunity cost. That is in order to produce one type of good by using given resources implies that we have to scarify the production of other goods. Government intention is to use such resources i.e. reallocation of resources to provide for the goods or services which are not provided by the private market mechanism i.e. voluntary transaction between individual consumers and producers. This is especially is the situation in the case of social or public good as different from the private goods. In the provision of public goods or social goods the market fails entirely while in others it can function only in an inefficient way. Since no consumer can be excluded from partaking in the benefits from the consumption of public goods, benefits from social goods are not vested in the property rights of particular individual hence market can not function. At the same time as the benefits become available to all consumers do not voluntarily offer payments to the supplier of such goods believing that some others will pay for the provision of such goods and goods will be provided anyway. This is discussed as the free rider problem. With the presence of free rider problem the linkage between producer and consumer is broken the government steps in to provide for such goods. In some cases Government imposes tax programmes to

transfer resources from one to other sector and provide subsidies through such tax amount in some socially desirable sectors. Obviously there are some allocation effects of government policies. However, in some cases such allocation of resources is not obvious. e.g. government subsidies in food have little or no effect on resources allocation. People simply curtail their private purchases of food, leaving total food consumption intact.



LET US KNOW

Public goods are those which are non-rival in consumption and non-excludable in use as opposed to private goods which are rival and excludable. Non-rival means consumption of the goods doesn't reduce its availability to others while non-excludable means it's technically almost impossible to exclude potential users from the use of the goods.

Free Rider Problem: it is the non-willingness on the part of the user of public goods not to pay for the provision of the goods believing that the goods will be provided anyway.

National and local social goods: By the definition, social goods are available equally to all. But the benefits from them may be spatially different. While benefits from certain public good accrue to people nationwide, they accrue only to certain local residents in case other. Examples: national defence is national social goods and streetlights are local social goods

Public Provision Vs. Public Production:

Private goods may be produced and sold to private buyers either by private firms or by public enterprises. Similarly, social goods may also be produced by private firms and sold to government or they may be produced directly under public management. When social goods are provided publicly, it means that they are financed through govt. budget and made available free of direct charge ignoring how they are produced.



CHECK YOUR PROGRESS

Q 11: State the function of the govt.

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Q 12: Public goods and private goods are same. (True/False).

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Q 13: Market mechanism works through voluntary exchange between economic agents. (True/False)

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1.4.2 Distribution Function of Government

Distribution of goods and services remains as one of the major areas of debate in any public or budget policy. Though efficient use of resources rests upon given prevailing distribution of income and pattern of consumer preferences, the task of govt. here is to ensure distribution of income to be socially fair or just. Typically in a society distribution of income and wealth depends upon the distribution of factor endowments, personal income earnings abilities and the ownership of accumulated or inherited wealth. In a competitive market economy distribution of income is determined by the process of factor pricing factor returns being equal to the value of the marginal product. However, this distribution of income may or may not be in line with what society considers as fair or just. In this respect, distinctions must be made between (a) the principle the competitive factor pricing ensures efficient use of resources and the (b) the proposition that distribution of income among families should be fixed by the market processes. While the first principle is governed by economic rule irrespective of economic system, the second principle has a serious problem. The factor prices as determined in the market may not correspond to the competitive

norms and the resulting pattern may not be acceptable. It is observed that it involves some degree o inequality especially in the distribution of capital income. Hence, some adjustment is required and distributive policies must be designed.

Government policies often affect both the mix of goods and services and their distribution i.e. the distribution of real income e.g. any public expenditure which increases the income of the poor has a favourable distributional effect. Such expenditures reduce the gap between the poor and rich. It is said that any policy change that benefit someone without hurting others are desirable but however such consideration implicitly involves value judgements. That's why it is very obvious that how the government policies effect the distribution of real income is not so clear i.e. in some cases it is obvious but in some cases it is not. However, the following fiscal instruments are the key to achieve distributive justice.

- Progressive taxes used to finance the public services, especially for those which benefit the low income group people, e.g. public housing, free primary education etc.
- Distribution of goods of mass consumption through subsidised fair price shops helps the poor and increases their real income.

Expenditure on the promotion of industries in backward regions has also great distributive effects

1.4.3 Stabilisation Function of Government

Having discussed the role of government or budget policy in matters of allocation and distribution, we will turn now to discuss its role on determining macroeconomic parameters like maximum feasible employment and a reasonable degree of general price stability. However, it should be noted with caution that achieving these broad objectives requires some forms of concerted policy guidance without which the economy might suffer from sustained

periods of unemployment or inflation. Government fiscal instruments, both expansionary and contractionary are used as counter cyclical policies to combat inflation and unemployment. Important fiscal instruments include taxation, public expenditure, deficit financing etc. An increase in government expenditure or reduction tax or both signify an expansionary fiscal policy to combat recession or demand deficiency. A decrease in government expenditure or increase in tax or both signifies a contractionary fiscal policy undertaken to fight inflation.



CHECK YOUR PROGRESS

Q 14: Economic efficiency is defined in Pareto optimality sense. (True/False)

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Q 15: Mention policy instruments adopted by a govt. to ensure distributive justice.

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1.5 LET US SUM UP

- Public finance is a study of the financial aspects of the government. In a narrow sense public finance deals with the income and expenditure of public authorities where the term public is used to refer to the Government or State and public authorities include all sorts of governments: Central, State and Local.
- According to Bastable “Public finance deals with expenditure and income of the public authorities of the state and their mutual relation as also with the financial administration and control”.

- According to Dalton, “Public finance deals with income and expenditure of public authorities and with the manner in which one is adjusted to the other”.
- Public finance has several branches; public revenue, public expenditure, public debt, budget policy and the fiscal policy.
- The subject matter of public finance can be summed up under the following heads: (i) public income/revenue (ii) public expenditure, (iii) public debt and debt management, (iv) financial management, (v) federal sharing of resource, (vi) controlling public expenditure (vii)fiscal policy and economic stabilisation and (viii) resource allocation.
- Private finance is of two categories: personal finance and business finance. Personal finance is the financial planning of individuals such as people, families and single consumers and includes savings accounts, insurance policies, consumer loans, stock market investments, retirement plans and credit cards. Business Finance is the financial planning of the business organizations and involves asset acquisition and proper allocation of funds to in a way that maximizes the achievement of set goals.
- The public sector comprises of all the government owned agencies, companies and state offices. The private sector comprises of businesses, companies and the individuals.
- The public sector’s main objective is to create social benefits while the private is to make profits.
- The overall benefits acquired for the public sector’s strategies is the citizens themselves, however the beneficiary of the private finance strategies are the owners, shareholders or the individuals themselves.
- Despite having all these differences both the public and private finance sectors have some similarities. Both face the issue of scarcity, need for borrowing and the importance of precedence of income.
- Both the public and private finance contribute towards a country’s economy and are co-dependent neither can exist without the other.

- There are three distinct functions of government or any budget policy of the government *viz.:*
  - ➢ *allocation function:* that basically consider provisions for social goods or the process by which total resource use is divided between private and social goods or provision in which the mix of private and social good is chosen.
  - ➢ *distributive function:* that mainly deals with adjustment of the distribution of income and wealth to ensure fair or just state of distribution, and
  - ➢ *stabilisation function :* which explains the use of govt. policy or budget policy to maintain high employment, a reasonable degree of price level stability and an appropriate rate of economic growth.



1.6 FURTHER READING

1) Musgrave, R. A. & Musgrave, P. B. (2011). *Public Finance in Theory and Practice.* New Delhi: Tata McGraw Hill.
2) Choudhury, R. K. (2015). *Public Finance and Fiscal Policy.* New Delhi: Kalyani Publishers.
3) Tyagi, B. P. (2005). *Public Finance.* Meerut, UP: Jai Prakash Nath and Co.
4) Sundharam, K. P. M. & Andley, K. K. (1986). *Public Economics and Public Finance.* Delhi: Ratan Prakashan Mandir.
5) Browning, E. K. & Browning, J. M. (1994). *Public Finance and the Price System.* Macmillan Publishing Company.



1.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Public finance is a study of various financial aspects of the government. In a very restricted sense, it is preferred to be

defined as the study of the nature and principles of state expenditure and state revenue.

Ans to Q No 2: Wealth of Nations" authored by Adam Smith in 1776

Ans to Q No 3: David Ricardo and John Stuart Mill

Ans to Q No 4: Bastable in his book "Public Finance" published 1892.

Ans to Q No 5: Prof. Harold Groves's definition is considered to be a suitable definition of public finance which covers almost all aspects of public finance "A field of enquiry that treats on income and outgo of government (federal, state and local). In modern times this includes four major divisions: public revenue, public expenditure, public debt and certain problems of fiscal system as whole such as fiscal administration and fiscal policy."

Ans to Q No 6: False

Ans to Q No 7: Public finance has four distinct branches: public revenue, public expenditure, public debt, budget policy and the fiscal policy.

Ans to Q No 8: The subject matter of public finance can be stated as (i) public income/revenue (ii) public expenditure, (iii) public debt and debt management, (iv) financial management, (v) federal sharing of resource, (vi) controlling public expenditure (vii) fiscal policy and economic stabilisation and (viii) resource allocation.

Ans to Q No 9: Public revenue as an important part of the study of public finance includes the study of the methods of raising public revenues and the principles of taxations. The study of taxation mainly covers analysis of the principles and characteristics of sound tax system, different types of taxes and their merits and demerits, the impact of shifting and incidence of taxation and the problems to which they give rise to, taxable capacity and its determinants, effects if taxation on production, employment, distribution and economic stability, the use of taxation as fiscal instrument, different types of tax rates, tax evasion and the issue of black money.

Ans to Q No 10: Private finance as personal finance is the financial planning of individuals such as people, families and single consumers and includes savings accounts, insurance policies, consumer loans, stock market investments, retirement plans and credit cards. Similarly private finance as business finance is the financial planning of the business organizations and involves asset acquisition and proper allocation of funds to in a way that maximizes the achievement of set goals.Two dissimilarities between private and public finance can be stated as the following: (a) The public sector comprises of all the government owned agencies, companies and state offices. The private sector comprises of businesses, companies and the individuals and (b) The public sector's main objective is to create social benefits while the private is to make profits.

Ans to Q No 11: There are three distinct functions of government *viz.* (1) allocation function: that basically consider provisions for social goods or the process by which total resource use is divided between private and social goods or provision in which the mix of private and social good is chosen. (2) distributive function: that mainly deals with adjustment of the distribution of income and wealth to ensure fair or just state of distribution and (3) stabilisation function : which explains the use of govt. policy or budget policy to maintain high employment, a reasonable degree of price level stability and an appropriate rate of economic growth.

Ans to Q No 12: False

Ans to Q No 13: True

Ans to Q No 14: True

Ans to Q No 15: Some of the fiscal instruments adopted by a govt. to achieve justice in redistribution of income are the following:

- Progressive taxes used to finance the public services, especially for those which benefit the low income group people, e.g. public housing, free primary education etc.

- Distribution of goods of mass consumption through subsidised fair price shops helps the poor and increases their real income.
- Expenditure on the promotion of industries in backward regions has also great distributive effects.



1.8 MODEL QUESTIONS

A) Very short type questions

Q 1: Define the term public finance.

Q 2: Who is termed as the father of public finance?

Q 3: Define the term private finance.

Q 4: What is meant by market failure?

Q 5: What is meant by externality?

Q 6: Define the term property rights.

Q 7: What is meant by market mechanism?

Q 8: Name two neo-classical economists?

Q 9: What is meant national social good? Give an example.

Q 10: What is meant by public provision?

Q 11: State any two monetary instruments.

Q 12: What is meant by fiscal federalism.

B) Short type questions

Q 1: Define public finance.

Q 2: Discuss Bastable's definition of public finance.

Q 3: State the normative aspect of public finance.

Q 4: State the positive aspect of public finance.

Q 5: State the major areas of public finance.

Q 6: Why did neo-classical economists not five much attention to the study of public finance?

Q 7: State one similarity between private and public finance.

Q 8: State two important subject matter of public finance.

Q 9: State how market works to deliver efficient allocation of resource.

Q 10: What is meant by Pareto optimality?

Q 11: State the functions of the government or any budget or public policy?

Q 12: What is meant by social good? How is it different from private goods?

Q 13: Mention two fiscal instruments? Explain their role in stabilising the economy.

Q 14: How does government try to achieve distributive equity in an economy?

C) Essay type questions

Q 1: Define public finance. Discuss the subject matter and scope of public finance.

Q 2: Discuss the development in the study of public finance. Discuss the definitions of public finance.

Q 3: What is meant by private finance? What are its types? Discuss the similarities and dissimilarities between private and public finance.

Q 4: What is meant by market failure? Discuss the need of govt. intervention in addressing market failure.

Q 5: Discuss the role of government in a market economy.

Q 6: Discuss various functions of government or budget policy.

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UNIT 2: PUBLIC GOODS & MARKET FAILURE

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Public Goods and Private Goods: Concepts & Characteristics

2.4 Public Goods & Free Rider's Problem of Public Goods

2.4.1 Public Goods and Merit Goods

2.5 Public Goods & Market Failure

2.6 Common Resources, Property Rights & Tragedy of Commons

2.7 Efficient Output of Public Goods

2.8 Club Goods and Local Finance: Theory of Clubs and Tiebout Hypothesis

2.8.1 Club Goods and Tiebout's Hypothesis

2.9 Concluding Remarks

2.10 Let Us Sum Up

2.11 Further Reading

2.12 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- put forward the concepts, features of public goods, private goods & merit goods
- discuss on various issues relating to public goods, like the free rider's problem
- explain the linkages between public goods and market failure
- deliberate on the common resources, property rights and tragedy of commons
- discuss the concept and theories club goods and of local finance, and also the Tiebout hypothesis
- explain the efficient level of output of public goods

2.2 INTRODUCTION

Public goods are those which are made available to all for consumption simultaneously. They are not diminished if one person or group of people enjoy and still remains for others. Such products can be put in either positive or negative manner. Thus the goods and services those are meant to consume by all at a time and no one can be denied from the benefits of those goods and services. Moreover, unlike the other market goods, the consumers don't reveal their demand, though they are beneficial for them. Hence such goods and services are mostly supplied by the public sector. It is public good if benefits everyone and remain available for others benefit. Some environment directly supplied things such as clean water, defence service provided by state, public institutions, etc, are common example of public goods. On the contrary, the products those decrease the well being of others simultaneously are called public bads. For example polluted air, water or soil is such public bads. One thing is clear that people are affected by these public goods and bads regardless who are paid for them or not. Thus one is getting benefits from public goods even he is not paying for them. Again someone may face hazard of polluted air even he is not responsible for creating for such hazard. Thus there is externality and non attainment of Pareto optimality for such environmental goods and bads. Even internalisation through imposing pollution tax or other market based measures sometimes is not easy to overcome the market failure caused by such externalities especially when the common property rights are properly defined.

2.3 CHARACTERISTICS OF PUBLIC GOODS

From the concept of public goods, we can list out some characteristics of public goods as under:

1. **Non-rival in consumption:** Public goods are such types of goods that if consumed by one individual, they are still available for the consumption of others. In other words, they don't take away the

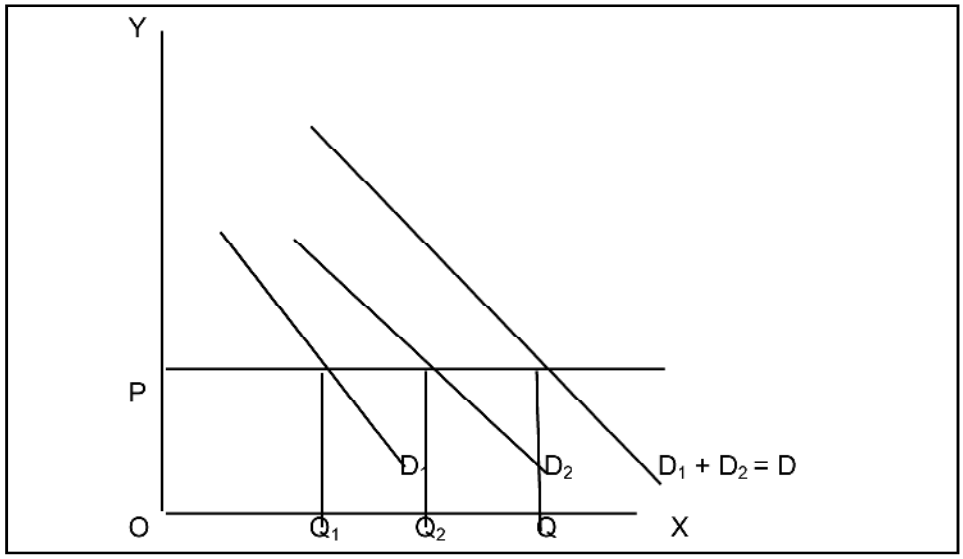
opportunity for consumption by others if some other individuals consume it. For example, the benefits of the services of clean water or the beauty of a public perk remain available for all individuals at a time. They don't get exhausted after consumed by one group of individuals. But the private goods such as medicine or cloths produced by one firm decrease in amount and gradually may get exhausted after consumed fully.

2. **Non-excludability:** No one can be excluded from the benefits of the public goods irrespective of anyone paying or not for the services of those. Individuals cannot deny each other the opportunity to consume a good. All individual of any places have equal rights to move through a national high way. Though some are paying some road tax of other kinds of charges, and some are not, the tax payers cannot deny the free riders to use the roads. Thus public goods are equally consumed by all at a time.

Non-rivalry and non-excludability are the basic characteristics of purely public goods. There are certain other characteristics also which distinguish public goods from other private goods. These features are discussed below:

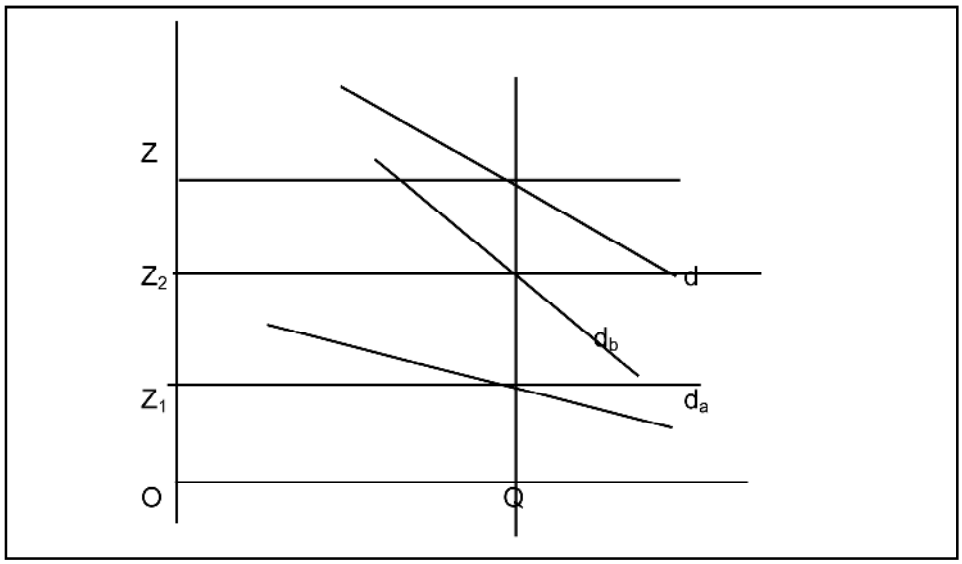
3. **Vertical addition of demands:** In case of private goods, if consumed by one individual, it gets reduced in availability for the others. In other words, those commodities are consumed by one by one and the portion availed for one, doesn't available for other. Next consumers have to consume the remaining portion of the good. Hence the market or total demand curve is obtained by adding the individual demand curves horizontally. But since the public goods can be consumed simultaneously by the entire consumers in the market, the market demand curve for such goods are obtained by adding the individual demand curves vertically. In the following figure it is shown how the market demand curves for private goods and public goods are derived from the individual demand curves.

Figure 2.1: Horizontal summation of demand curves for private goods



In Figure 2.1, it is seen that individual 1 OQ_1 amount of output at the given price of the commodity, individual 2 demands Q_1Q_2 amount of the commodity and thus total market demand is $OQ_1+Q_1Q_2 = Q_1Q$. However for public goods, which can be consumed by all, demand curve is added vertically as shown in the figure below.

Figure 2.2: Vertical addition of demand curve for public goods



In the figure, d_a, d_b and d are the demand curves for individual A, individual B and market demand curves respectively. Amount of public good supplied is OQ which is equally available for both the individuals. However, according to their individual demand curves, individual A will consume OZ_1

amount of it and individual B will consume Z_1Z_2 amount of it. This the market demand will be added vertically to get Z amount of total demand for the good.

1. **Absence of revealed preference:** For public goods, consumers don't show their preference, rather in most cases seeing the utility and needs; the Govt. supplies such goods with minimum or no charge for it. No individual offer its demand and hence output and price are not determined by market.

Nearly Zero marginal cost: The marginal cost of supplying public goods are almost zero as they are available equally for all at the same time and also doesn't exhausted even consumed by one, it remain available for others too. Hence there is no extra cost for supplying an additional amount of such goods.

2.4 PUBLIC GOODS & FREE RIDER'S PROBLEM

The distinguishing feature of such public goods from private goods is that their demand is added vertically. This indicates that if consumed by one, it remains in same quantity for others. This means some people can consume such commodity freely. For example, the residents of an apartment need a maintenance service for their community hall. If they opt for a private service to pick up the trash regularly, the cost of this service has to be financed by a voluntary fee paid by each resident of that area. Now, the problem is since this is voluntary, several residents can refuse the pay their share of trash collection fee and continue to throw garbage with a hope that their neighbors will pay and they will enjoy the free service at other's cost.This gives the free rider's problems to the public goods. Since individuals are able to enjoy the benefits paid by others, each will contribute less what he would if acted individually. Therefore the maintenance of such commodities becomes a challenge. In other words, due to free users, the performance of public goods doesn't remain up to the mark as it would be if paid. This is called the free riders problem of public goods.

2.4.1 Public Goods and Merit Goods

Sometimes, the public sector may actively participate in the allocation of certain economic goods which are essentially private goods in nature, that is, which are rival and excludable in consumption- and therefore can be otherwise supplied by the private sector. These economic goods are considered by the government as meritorious or important for better interest of the society. For examples, education, healthcare, jobs training facilities, public library and others. For these goods, the government thinks that everybody in a society should consume at least a certain level of these goods irrespective of their ability and willingness to pay for those goods and also believes that if left to the private sector alone, these goods will be under supplied. These government supplied or heavily subsidized goods are called the ***Merit goods.*** In other words, ***merit goods*** are those goods and services which have large social benefits and hence supplied by the Government thinking that people will under consume if left to private market and which ought to be subsidized or to be provided free of cost so that everybody can consume regardless of their ability to pay for the good.



ACTIVITY

Please try to find out the pure public goods and merit goods around you. How they differ in nature?

2.5 PUBLIC GOODS & MARKET FAILURE

Market failure is such a situation when market doesn't operate fully efficiently. Market failure may occur due to many reasons such as asymmetric or imperfect information, lack of fully competitive market, underutilisation of resources, etc. For the most efficient market or maximum social welfare, we often use to talk about Pareto optimality. Thus, by market failure too, it's the situation, the Pareto Optimality conditions don't fulfils.

According to Pareto Optimality, the economic efficiency refers a situation, when no one can be made better off without making anyone worse off. Such situation is referred as the Pareto optimality as the resources are said to be distributed optimally and thus market operate optimally. Alternatively, if any redistribution can benefit anyone without anyone harm, then that is not the most economic efficient situation. The most ideal market situation for satisfying Pareto optimality is the perfectly competitive market, where there is no asymmetric information, or monopolistic exploitation. Both buyers and sellers have the perfect knowledge about the market. Therefore, where there is lack of competitiveness or monopolistic element in the market, market fails to operate efficiently. Public goods are such goods, where for different reasons market fails to operate optimally.

Public goods are those which are made available to all for consumption simultaneously. They are not diminished if one person or group of people enjoy and still remains for others. Such products can be put in either positive or negative manner. Thus it is public good if benefits everyone and remain available for other's benefit. Some environment directly supplied things such as clean water, defence service provided by state, public institutions, etc, are common example of public goods. One thing is clear that people are affected by these public goods and bads regardless who are paid for them or not. Thus one is getting benefits from public goods even he is not paying for them. Again someone may face hazard of polluted air even he is not responsible for creating for such hazard. Thus there is externality and non- attainment of Pareto optimality for such environmental goods and bads. Due to externalities, there may be over production or under production.

2.6 COMMON RESOURCES, PROPERTY RIGHTS & TRAGEDY OF COMMONS

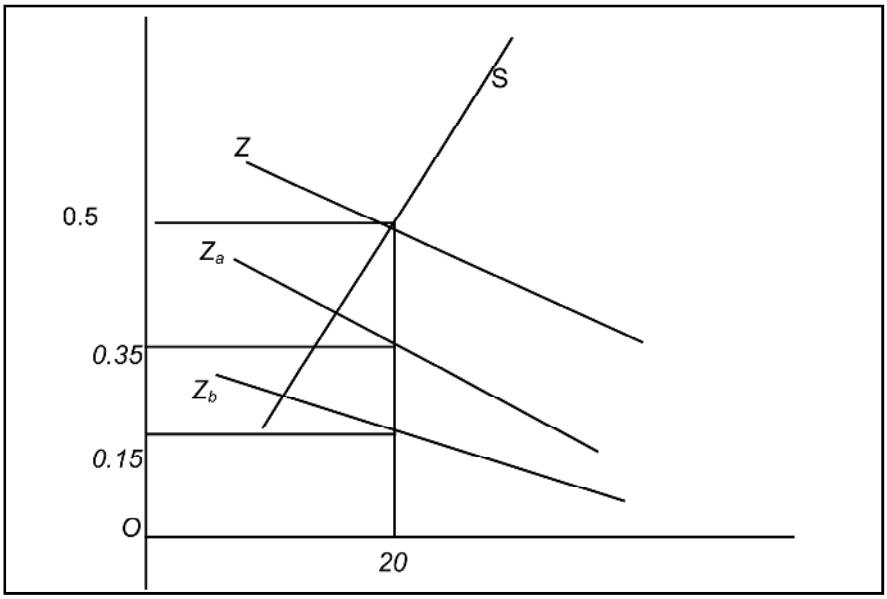
Most of the public goods are common for usage by the public which the individual can consume equally and simultaneously. Ownership is mostly common or in the hand of public or Government. For such common resources one question makes the difference is that who will bear the pain

of maintenance of such resources. Here the issues of property rights and Tragedy of commons arise. Being common for all in terms of sharing benefits as well as the responsibility of maintenance, they are over used and not maintained properly by anyone. As the property rights are not well defined, they don't have any inducement to development or maintenance of the asset or resources.. Hardin explained the situation of common resources and tragedy of commons with an example of cattle grazing field which having common ownership. Due to externality caused by common resources harms the other's property as well as the property itself. Even in private firms creating pollutions too have some externalities which cause harm to other firms or individual and problem of defining property rights arise. When a firm creates pollution it thinks it has right to create pollution whereas the other party thinks they have right to have clean air. Again Coase tries to find some solutions for such problems relating to property rights with defining the property rights and bargaining the responsibilities between the parties.

2.7 EFFICIENT OUTPUT OF PUBLIC GOODS

Due to market failure, public goods cannot give its full efficient output. However, we can have an optimum provision of public goods. Let us consider the following figure representing the demand for a pure public good, such as National defense whose market demand is the vertically added individual demand curves. Let us assume, the Government decides to supply Z quantity of pure public good. We have the two consumers A and B with $a\,Z$ and $b\,Z$ levels of consumption of the public good respectively. As discussed before, a pure public good like national defense is non-rival and non-excludable in consumption. Therefore, it is not divisible among consumers. Once supplied at a given level, this good is jointly consumed equally by all consumers in a society. Assuming the total supply of pure public good Z to be 20 units, both consumer A and B will consume 20 units of the good. In other words, if the good is supplied to one of the consumers, it must also be supplied at the same level to the other consumer. So, for both consumers, the equations are: $Z = a\,Z$ and $Z = b\,Z$.

Figure 2.3: Provision of pure public good



As seen in Figure 2.3, the consumers A and B each individually consumes the total quantity (20 units) of the pure public good. S denotes the supply curve of public good. The equilibrium is achieved at point y where market demand curve Z intersects the supply curve S. The equilibrium supply of public good is 20 units with a price of 50 cents per unit. As observed from the diagram, in case of pure public good, individual consumers are not able to vary the quantities of the good that can be purchased at a particular market price. Instead, both consumers must consume the entire public good provided (20 units here) equally regardless of the price they are willingto pay for that particular quantity of the good. As we can see from figure, consumer A would be willing to pay 35 cents and consumer B 15 cents per unit for 20 units of the public good if a pricing mechanism as same as in the case of private good could be worked out. The phenomenon of different consumers willing to pay different prices for the consumption of a particular quantity of public good can be better understood if we consider the marginal benefit and marginal cost of public good consumption. As before, the vertical distance under each consumer's demand curve at their chosen quantity measures the marginal benefit they receive from public good consumption in figure. The marginal benefit to each consumer in this case (35 cents to consumer A and 15 cents to consumer B) sum up to the

marginal cost of 50 cents as determined at point y in the diagram. Therefore, in case of pure public good, the efficiency condition is to set the marginal cost equal to the sum of marginal benefits rather than setting it equal to each individual's marginal benefit. So, we have the following:

$MB_a + MB_b = MC$?Or

0.35 + 0.15 = 0.50 for pure public good.

Therefore, comparing the efficiency of public and private good provision, we see two significant distinctions. Firstly, the key feature of the private good's market equilibrium is that consumers demand different quantities of the good at same market price. So, in private market, we horizontally sum the individual demands of consumers to get the market demand of the private good. On the other hand, the key feature of the public good market is that whatever amount of the public good is provided must be consumed equally by all consumers. That is each person is forced to choose a common quantity of the public good. So, in public good's market, we vertically sum the individual demands of consumers to get the social value of the public good. Secondly, in case of private good, the marginal benefit received from the good for each consumer is equal to the marginal cost of production (*MB* ??*MC* for both A and B). On the other hand, for public good, the social efficiency is maximized when the sum of individual marginal benefits equals the marginal cost.

2.8 CLUBS GOODS AND LOCAL FINANCE

There are certain public goods which are managed and also financed locally with some artificially built systems. If at all there is private provision to the public goods, then we can only expect a suboptimal allocation of resources under such systems. Club goods are that type of good in economics, those are excludable but not rivalry in nature, at least till they reach a point where in congestion occurs. There are some goods, which are under the control of local bodies like clubs, or other community organisations who enjoy the monopoly of maintaining and supplying the goods under their control to the consumers. Often these goods exhibit

high excludability, but at the same time low rivalry in consumption. These goods are often provided by a natural monopoly. Club goods have artificial scarcity. Club theory is the area of economics that studies these goods. Thus they may be placed in the subset of public goods in the sense that they are non-rivalry. But since they are excludable, they are not purely public goods. It is to be noted that responsibility and management of club goods are undertaken locally. That is they are financed locally. For example, for maintaining a local road toll gate is established which is run by certain body who collects tax from the user. By that collected funds, the body bear the cost to maintain the particular road, and thus the maintenance of that good is financed locally.

2.8.1 Club Goods and Tiebout's Hypothesis

Tiebout's Hypothesis deals in the difference in the nature of the federal expenses and the local public expenses. The core of the model lies in the fact that there is a non-political solution to the free rider problem in local governance. To make the consumers of public goods pay, the Government will have to make the consumer voters to reveal their preference and collect tax accordingly. But the consumers are clever enough and will understate their preference to avoid tax. Tiebout explained that the local governments have a more accurate and comprehensive knowledge of the needs of the local people, thus making them more readily able to precisely tax the people on the goods and services it provides to the local people. He later on tried to explain how municipalities in the region can offer different goods at different prices. Given that individuals have conflicting personal valuations on these services and varying ability to pay the attendant taxes, individuals will move from one local community to another which maximizes their personal utility. The model states that during the choice method of individuals, jurisdictions and residents will decide an equilibrium provision of local public goods in accord with the tastes of residents, thereby

sorting the population into optimum communities. The model has the advantage of solving two major problems with government provision of public goods: preference revelation and preference aggregation.

According to Tiebout, the communities have two ways to acquire more persons in their community. First, formation of cartel and enforcing a singular tax rate among various communities. Second, tax competition amongst the communities to acquire the individuals to their communities. This tax competition is what Tiebout stressed in his model as an integral part of allocation of local resources without any government provisions. It is the one that instead of benefiting the total population of consumers; it benefits only consumers in the local community. The fundamental notion here is that individuals must consume all goods—both public and private—at the same location. Tiebout interpreted that if the public goods are local, i.e. if consumption of the public goods and location choice are bundled, then a market type solution may exist, at least "approximately and hence no government intervention will be required".

The assumptions of Tiebout's model are:

- consumers are perfectly mobile where their preference patterns, which are set, are best satisfied
- Full knowledge of differences among revenue and expenditure patterns and to react to these differences
- Huge number of communities in which the consumer-voters may choose to live
- No spillovers among communities that the public services supplied exhibit no external economies or diseconomies between communities.
- Average cost of providing public goods as a function of population is U-shaped, i.e. there exists a cost minimizing population size
- Communities with population sizes below (above) the cost minimizing size seek to expand (contract).

Tiebout asserted that under these assumptions, efficient provision of public goods would obtain. That is, communities would be of the optimal (cost-minimizing) size and citizen-voters would live in communities where the public good-tax bundles were optimal for them.

A Tiebout equilibrium is composed of an allocation; a price for each commodity; and a tax system for each region such that the following conditions are fulfilled: (i) consumers select their consumptions bundles optimally (ii) consumers select their regions of residence/consumption optimally (no household wishes to move, treating as given public good levels and taxes across regions.(iii) Firms maximize profits (iv) markets clear (v) each regional government balances its budget(vi) Each regional government's public goods and tax plan maximizes its objective.

2.9 CONCLUDING REMARKS

Public goods cannot be provided through the market system that is, by transactions between individual consumers and producers. Public policy or budget policy of the government is required to produce these goods. However, public goods are not necessarily to be supplied by the Government, rather, they may be environmentally available or managed by the local community too. While allocating the public goods and consuming the same by the different categories of consumers in the society, it creates some externalities, imperfect information and some others problems which cause market failure for these goods. Club goods are some categorised goods which are excludable but non-rivalry which are managed by local authorities. This is one kind of federal governance where responsibilities are under such bodies. Thus there are many types of goods which have been discussed by various authors and economists. In modern era, due to complexities in the lives and sophisticated economic policies, role of Government has increased every country. In welfare objectives, Government has to interfere even in certain activities, which are private in nature. Thinking

of common public who are either have limited resources to consume some necessities or they may neglect to avail some essential services at market prices or even don't reveal their demand, Government gets into the market, supplies some of them at free of cost or at affordable prices. Thus, importance of public goods have been increasing day by day.

The existence of market failure for the public goods is often the reason for government intervention in a particular market. The basic reason for market failure in the provision of public goods is that the benefits that public goods give rise are not limited to one particular consumer who purchases the good but becomes available to others as well. The theory of public goods provides a rationale for the allocation function of public policy. The difficulty lies in deciding the type and quality of a public good that should be supplied and how much a particular consumer should be asked to pay. To serve as an effective mechanism of preference revelation voting process on tax and expenditure decisions could be taken.



2.10 LET US SUM UP

- Public goods which include environmental goods and other community managed goods, etc. are common pehenomenon in the present day world.
- Public goods may be pure or impure. Pure public goods are those which are characterised by non-excludability and non-rivalry. But there are some other public goods are there which are non-excludable, but not non rival. They bear the other characteristics of public goods and hence called impure public goods. Merit goods are impure public goods.
- Sometimes Government actively participate in providing some goods which are private in nature or can be supplied by market force too, but seeing the need of such goods for the society, Government decides to supply those goods either fully free of costs, or at subsidised cost. Such Goods are called merit goods. Government Schools, Hospitals are examples of merit goods.

- Demands for public goods are vertical summation of the individual demands. Preference for such goods are not revealed by the consumers. Public goods are generally not divisible in allocating among the consumers, while the private goods are divisible.
- There is free rider's problem in case of public goods. Since no one can be excluded from consumption of public goods regardless whether they are paying or not for them, free riders create problem in maintaining those goods.
- Market doesn't work efficiently in case of public goods. This is mainly due to various externalities and imperfect information relating to the public goods.
- Club goods are another types of goods which are excludable but non-rivalry. They are managed locally by local bodies like clubs, societies, trusts or other authorised bodies. Finance for maintenance is done through the tax or charge collected from the consumers of such goods collected by the body under whose responsibility the goods have been given. These goods are often provided by a natural monopoly and having artificial scarcity.
- Tiebout has tried to sort out the problem arising for maintaining such club goods where it becomes difficult to collect the tax by the local body due to free rider's problem. Tiebout's hypothesis deals with the difference in the nature of the federal expenses and the local public expenses. The core of the model lies in the fact that there is a non-political solution to the free rider problem in local governance.



2.11 FURTHER READING

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4) Bhattacharya, R.N. (Ed). (2014). *Environmental Economics: An Indian Perspective*. New Delhi: Oxford University Press.



2.13 MODEL QUESTIONS

Q 1: Distinguish between public goods and merit goods.

Q 2: What are the characteristics of public goods?

Q 3: Explain how the derivation of market demand curves for private goods and public goods are different?

Q 4: Write a note on the free rider's problem of public goods.

Q 5: What is market failure? Why does market fail in case of public goods?

Q 6: Explain the optimal allocation of public goods.

Q 7: What are the club Goods? Explain with example.

Q 8: Explain the Tiebout Hypothesis.

Q 9: Write the assumptions of Tiebout hypothesis.

Q 10: How does free riding become a constraint to attain social optimality of the public goods?

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UNIT 3: PUBLIC CHOICE

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Theories of Public Choice

3.4 The Median Voter Model

3.5 Logrolling and its Role

3.6 Let Us Sum Up

3.7 Further Reading

3.8 Answers to Check Your Progress

3.9 Model Questions

3.1 LEARNING OBJECTIVES

After reading the unit, you will be able to -

- Understand the theories of public finance.
- Discuss and comprehend the median voter model.
- Appreciate the need and importance of median voter model.
- Understand the concept of logrolling and examine its role.

3.2 INTRODUCTION

Public choice is a concept that is applicable in the field of political science. The concept provides the sociologists and political scientists the scope of applying the methods and theories of economics to understand and evaluate the political behavior of the people. The fathers of the theory of public choice includes, Kenneth Arrow, Duncan Black, James Buchanan, Gordon Tullock, Anthony Downs, William Niskanen, Mancur Olson, and William Riker who aimed to explain the rationale behind public decision-making in any society or country. As per the theorists of public choice, it is propounded that the government of the country, applies the methods of economics in practicing the theories of politics. In general, the self-interest of a person impacts his/her decision-making depending upon the

commercial benefits derived out of it, in a similar way, it also affects the communal decision-making. Thus, people acting as voters, politicians, lobby groups, government officers, etc., would always prefer outcomes that shall maximize their desired outcome with least possible efforts.

Since, every economy has different sets of individuals with different combinations of values and related interests, such value-pluralism makes the competition among these individuals inevitable, thus making is important to understand the role of political process in resolving these issues. The political processes are regulated by the constitution of the nation. The process does not only look into the vote counting but also decides on the rules to chose people's representatives based on election decision, it also determines the taxes to be imposed on the countrymen. The political process needs to estimate the government expenditures on various government programmes on national development and the ways by which such expenditures can be distributed among the citizens. It is the through this process that the ruling government decides about the rebates and subsidies to the different interest groups. Such evaluation and measurements are then applied by various contesting political parties in their election campaign to provide people with the information about the cost-benefits associated with these alternative decisions in order to develop their understanding to decide who and how to vote.

Thus, the public choice theory explains the concept of political process in deciding the ways of resource distribution and reassigning of the incomes. Other than economics factors the political process is also influenced by 'ideology' of the ruling government. According to economic outlook, politics is to provide 'useful goods and services' to public, at large, however, the public choice theory examines the political process in determining the 'quantity of goods and services' to be supplied to the public, at large.

3.3 THEORIES OF PUBLIC CHOICE

Public choice is the application of collective choice through cost and benefit analysis in various political decision making. The theory of

public choice is applied in designing and mechanisms of elections, constitution, lobbying, political parties, bureaucracies, interest groups, committees, parliament, other government systems, etc. In common parlance, under the public choice the people who bear the cost are not always the ones who shall be the user (beneficiary) of goods/services, so offered. Thus, unlike in a market where a buyer and seller needs to drive a common agreement to complete the transaction, else in case of any discontentment either of the parties can walk out of the deal, in political set-up such flexibility is not offered in the case of public choice and therefore the minority has to accept the decision taken by the majority and bear the cost of any sacrifice demanded as a result of public choice decision. Thus, such arrangement provides power to majorities which can be used in favor of self-interest or public interest. Public choice theories help in understanding the decision-making process of any government, to identify the possibilities of potential privilege of such decision of any particular group or exploitation/coercion of minority and to offer ways to overcome or limit the shortcomings.

In one of the most important contribution made by Noble Prize winner American economists James M. Buchanan in 1986 along with his co-author Gordon Tullock, by challenging the orthodox assumption of officials, politicians, legislators, etc., in the government systems to be “rational maximisers”, who are free from any biasness and those who are expected to make logical and rational decision of distribution of public goods to achieve public interest. Buchanan and Gordan explained that the legislators, politicians, officials, voters, etc., they all behave in the same manner as they do in a marketplace and use the political process to serve their self-interests. They shocked the orthodox thinkers by stating that political decisions are not always made efficiently and with intention to achieve public interest rather the decision are mostly manipulated for achieving some vested self-interest.

Public choice is a tool to understand the political debates that reflects different dynamics among motivated individuals from various political and

government institutions and also explains the expected outline of outcomes accompanying such debates. In one of the theories of public choice – "the calculus of voting" - it is explained that voting does not reflect the true position of elections, every time. It is believed under this theory that public vote tactically rather than following their true opinion. Also, it is stated that small group of people with much vested interest in voting may exert strong power which shall exceed the large group despite of their majority. This happens in cases where the cost of such interest of small group, is very thinly to be borne by large group in comparison to cost associated with campaigning against such decision and therefore such large group despite in majority, will chose to walk away than to protest or cast vote against such self-interest. In some cases, different small groups also tend to form coalitions or alliances among themselves to create powerful influence in decision-making in political systems.

In *median voter theorem* of public choice, which was rediscovered by Duncan Black in 1948 (first work of Borda and Condorcet), he suggested that on issues that are simple and straight-forward, the political parties will settle to the center point of the opinion, where most of the votes shall be casted. Any party which shall move away from the center will lose the vote in favor of those in agreement to the decision. Since every party wants to win votes, all parties will try to hold together at the center, thus reducing the extent of choice-making.

In 1951, the American economists (later Nobel Prize winner) Kenneth Arrow propounded the *impossibility theory* which questioned the accuracy of group decision in any electoral system in relation to its prevalence, nature, and strength of preference of the voting community. In 1957, Arrow's student Anthony Downs contributed rational choice theory stating political parties intending to achieve self-interest such as income, power, position in the political system, prestige, etc., will make all deliberate and efficient efforts to achieve it, rather than incorporating any policies for public interest. On the other hand, voters would cast votes for parties offering maximum benefits to them through various policies. In yet another theory propounded by Arrow

– *rational ignorance* – he mentions about the lack of time and efforts made by voters to analyze the voting opinion of people, at large about various policies of the political parties contesting the election and therefore, most of the voters cast their votes on the basis of label of the parties or may choose to walk away from voting.

In 1962, William H. Riker, an American political scientist, suggested the *minimum coalition theory*. He explained that large coalition do not survive for long period, therefore are short lived. It is thus advisable for small interest group to form minimum coalition group comprising of just enough members to win the election but not too big to be together. He also introduced "Game Theory" into Public Choice to apply mathematical tools to prediction the situation in elections, where the part of individual decision is based on the decision of the others.

In 1965, Mancur Olson, in his book "The Logic of Collective Action", explained the impact of special small groups on political parties indicating the strong effect of lobbying in decision making. The book explains that in certain case the large group tends to find it hard to represent themselves over the small special groups who has the approachability and power to influence the political decision making. These large group includes tax-payers and consumers. The prominent reason of such ignored representation is due to "free-rider" attitude. In such case, people assume that if the lobby group wins to attract any benefit under the political set-up, the benefit will be available to everyone (whether one participates or not in such act) and therefore why must one bother to join actively, if one can avail free ride on the efforts of others. Thus, large groups do not participate in the decision-making as they are governed by 'free-rider" attitude to gaining some benefit which may accrue to small groups that are active in driving benefits under political set-up. However, these small special groups such as trade unions, professional bodies, etc., may tend to restrict the privilege derived to their own members, has over presentation in public debates than the consumers and tax-payers who are under-presented due to free-rider attitude and are hard to be organized in one group.

In 1971, an American economists William A. Niskanen, in his book, "Bureaucracy and Representative Government" examined that people in the bureaucratic setup tend to negotiate and influence the budgets by maximizing the allocation for their departments on ground of their work experience and inherent understanding of the department functionalities over the information and experience of the legislator/politician. Once such allocations are made, bureaucrats will than force the legislator/politician to implementation of such budgets, on grounds of losing public image and facing humiliation, in case of failure of such implementation. This results in less competent bureaucracy than expected by the legislator/politician.

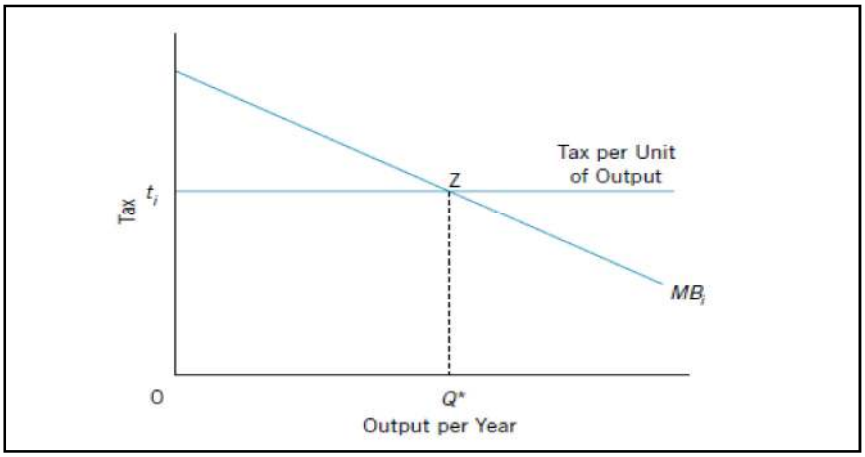
Thus, it is a matter of question how can one decide on distribution of public goods, on what rules should the collective decision-making be based on, what should be size of majority to decide, etc. It is however, tedious and time consuming to get millions of people to agree. Even if this happens in some cases, the minorities or small dissenting groups are forced to accept the majority decision-making. It is also difficult to determine the majority number, as large number makes it difficult to reach unanimity and small number would lead to high chances of exploitation of minority.

The most promising method is trade-off between "decision-making cost" and "external costs". Such trade-off will lead to such number of majority small enough to reach agreement but large enough to avoid chances of exploitation.

3.4 THE MEDIAN VOTER MODEL

Public choices are usually based on the elections which provide individual voting rights to every voter. In common parlance, public evaluates the benefits-cost of public goods while casting their votes, in favor or against any decision, in a manner similar to their buying behavior in any marketplace. In case of a rational voter, the most preferred political outcome shall be the quantity of government goods supplied intersecting the point corresponding to the tax (t_i) share paid by him is equal to marginal benefit (MB) of such goods, as illustrated in Figure 3.1.

Figure 3.1: Median Voter Model



The voter achieves maximum net satisfaction at point Z. This is the point at which $MB_i = t_i$. The voter's most-preferred political outcome corresponding to this point is Q^* units of the public good per year.

Source: Hyman David, Public Finance, 2011

As shown in figure 3.1, increments in the quantity of goods supplied by government up to Q^* shall be a welcome decision as it shall result in high marginal benefits for the amount of tax share paid, however, increase in supply of public goods beyond Q^* shall result in decline in marginal benefit and higher tax share, thus resulting in more cost and less benefit to the voters resulting in rejection of such proposal. Thus, it is necessary to understand that an individual would cast vote on the basis of the cost-benefit analysis. It is necessary to achieve political equilibrium for rational decision-making.

The median model as developed by Anthony Downs in 1957, provides an explanation of public choice based on "median voter theorem". The median voter model is applicable in evaluating the voting results by determining one of the, most preferred outcome as the median among the other most preferred outcomes of the entire voting. In simple words, for single-peaked (one-dimensional) and straight-forward, the political parties will settle to the center point of the opinion, where most of the votes shall be casted. Any party which shall move away from the center will lose the vote in favor of those in agreement to the decision. Since every party wants to win votes, all parties will try to hold together at the center, thus reducing the extend of choice-making by voters.

The assumptions of the median voter theory are as under –

- The issue under consideration is single-peaked. The political parties shall place their policies close to the median voter point for attracting more votes and agreements.
- The median voter theory is applicable to one-dimensional preference and shall not apply to several possible preferences.
- There should be two competing parties with two different policies for voters to choose. The voters shall cast vote in favor of policies of party, that are close to their preferences.

In order to understand the concept, let us assume three friends A, B and C wishes to enjoy ice cream at ice-cream parlor. A prefers to go to ice-cream parlor where the ice-cream costs Rs. 10/-. B wishes to visit ice-cream parlor where ice-cream is Rs. 15/- and C wants to go to ice-cream parlor with Rs. 25/- ice-cream. Here, B can be called as the median voter, as there are equal number of voters who prefer ice-cream cost higher and lower than his preference. If the example is further extended, let us assume that every individual is given two options to make a choice close to their preferred cost of ice-cream, the table 3.1 represents the prospective combinations–

Table 3.1

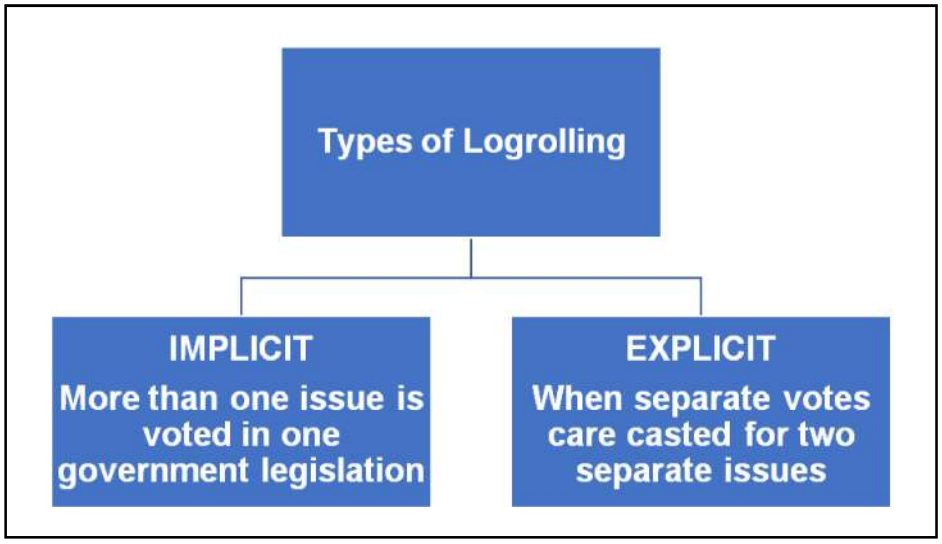
Options	Voting Pattern			Results
Rs. 15/- vs. Rs. 25/-	A: 15	B: 15	C:25	15
Rs. 10/- vs. Rs. 25/-	A: 10	B: 10	C:25	10
Rs.10/- vs. Rs. 15/-	A: 10	B: 15	C:15	15
Rs. 10/- vs. Rs. 20/-	A:10	B:10	C:20	10

In the table 3.1 reflects that the median voter will always cast the vote in favor of policy that is accepted, in case of weak form of median voter theorem. As may be noted that in every case B will cast the vote in favor of winning party. Also, that the preference of B will defeat any other preference from other voter when compared to pairwise selection. Once, the median voter preference is established, it cannot be defeated even by any other majority pairing combination. In case of strong form of median voter theory, the median voter (B) will always get the most preferred policy.

3.5 LOGROLLING AND ITS ROLE

At times when more than one issue is debated at the same time, as is normally the case—voters, sometimes face the political packages that have both favorable and/or unfavorable proposals. In certain cases, the voter feels stronger about certain issues in comparison to others, or in case where he is better or well-informed on certain issues than others, at that point his vote (in favor of the package) shall be the function of the degree to which all these issues are covered in the package, so offered. At the point where the voter preferences differ or vary on these issues, there are encouragements in the form of some incentives for voters to exchange votes in favor of those issues of major interest to them. This arrangement of 'vote-trading' is called logrolling.

Figure 3.2: Logrolling



- **Implicit logrolling:** Implicit logrolling is a process of vote trading where political parties bundle several unrelated issues into a proposal to be voted in one legislation. This kind of voting happens when election contesting parties declares their manifestos before the voters, covering diversified issues to be voted for. Such legislative proposal would have issues which may be favorable or unfavorable for the voters. The favorable voting shall depend on the extend of the possible benefits exceeding the possible costs of unfavorable issues. Such

logrolling is beneficial for the legislator, as they can bundle issue to match the interest of other voters and can attract majority support in favor of such legislation.

- **Explicit logrolling:** Under explicit logrolling, the voters shall cast their votes on two different issues under two different legislations. Under explicit logrolling, the vote-trading is unambiguous and straight forward arrangement of voting to generate favorable votes on the issues/proposals. These are applicable in case where specific laws are to be implemented that would not become applicable independently.

Logrolling is a practice that leads to generate more favorable results on grounds of the power of preference but it bundles with inherent threat of tactful application by political parties to incorporate issues of self-interest to gain favor. However, it also has some inherent benefits of drawing the trust of minority small group who may vote-trade in favor of issues they prefer. Voting trading is not only favorable in case where the benefit accruing to a large group is more than cost associated with it but, it is favorable in case where the such issues are blocked to be favored by group and though is it favorable for others it cannot be implemented. In such case vote-trading helps in removing the block and get it implemented.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True or False.

(a) Public choice is a concept that is applicable in the field of political science. (T/F)

(b) The median voter model is propounded by Kenneth Arrow. (T/F)

(c) In case of rational voter, the political equilibrium shall be achieved when the benefit accruing to the distributed goods/services will exceed the cost associated with it. (T/F)

(d) In implicit logrolling, two separate issues are voted under separate legislations. (T/F)

(e) There are two types of logrolling viz., implicit and explicit. (T/F)



3.6 LET US SUM UP

- Public choice is the application of economic theories to understand the process of collective decision-making under any political set-up.
- The orthodox thinkers assumed that people in government offices are rational and not biased in decision-making for the distribution of public goods. However, several public choice theories such as rational maximizer, calculus of voting, median voter theory, minimum coalition theory, impossibility theory, rational ignorance, free rider, bureaucracy and representative government, etc., have challenged the orthodox thinkers to instate that decision by individuals shall be governed by motive of self-interest and preference based on cost-benefit analysis.
- The median voter model indicates one, of the most preferred outcome, out of the other most-preferred outcomes of the voting.
- Under the logrolling process the vote trading arrangements are made to generate favorable votes for any legislation.
- Logrolling has inherent merits and demerits which may be applied by political parties to seize self-interest or to provide public benefits.



3.7 FURTHER READING

1) Tresch, R . *Public Finance – A Normative Theory.* Academic Press.

2) Gruber, J. *Public Finance and Public Policy.* Worth Publisher.

5) Ghosh, A. *Public Finance.* New Delhi: Prentice Hall India Learning Private Limited.



3.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) False (c) True (d) False (e) True



3.9 MODEL QUESTIONS

(A) **Short Questions** (Answer in 150 words)

Q 1: State the meaning of Public Choice.

Q 2: Write the assumptions of "median voter theorem".

Q 3: Examine the role of logrolling in political system.

(B) **Essay-type Questions** (Answer in 300-500 words)

Q 1: Briefly explain the theories of Public Choice.

Q 2: Explain the meaning and types of logrolling.

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UNIT 4: EXTERNALITIES AND MARKET INEFFICIENCIES

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Externalities and their Nature

4.4 Inefficiency due to Externalities and their Corrective Measures

4.5 Coase's Voluntary Bargaining in Small Groups

4.6 Let Us Sum Up

4.7 Further Reading

4.8 Answers to Check Your Progress

4.9 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- explain the concept of externalities in public finance
- discuss and comprehend the role and nature of externalities
- examine the various corrective measures to overcome externalities
- appreciate the application of Coase's theorem.

4.2 INTRODUCTION

The term ‘externalities’ in economics means the cost or benefit, incurred or received by any unrelated third party, by virtue of any economic activity performed, due to the consequences of uncontrolled factors permitting the incurrence or receipt of such cost or benefit. In other words, the cost or benefit accruing to an unrelated third individual or organisation, in the course of happening of any economic event, in which they have no contribution for its creation, is termed as externalities. For example, emission of poisonous industrial gas that pollutes the environment and affects the heath of the population in the area, is example of an externality. As these

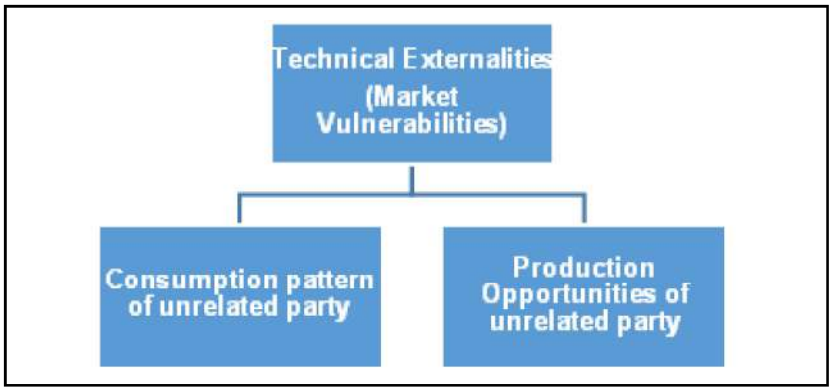
externalities are not computed in the total cost of the product/services produced, therefore, the economists believe that the presence of these externalities create market inefficiencies which results in market failures. One of the major reasons for such externalities is improper definition of property rights. The unclearity of the unclear ownership of certain resources that are freely available, creates a situation where few economic agents would start producing more while the others, those which are not directly related to such production, would either bear the cost of such production or avail the benefits accruing to it. For example, the environment and its ecological variables such as wildlife, air, water etc., are few of the examples of improperly defined property rights.

4.3 EXTERNALITIES AND THEIR NATURE

Externalities are related to the impact of the happening or non-happening of an event arising due to the happening of an economic event, resulting in a cost or benefit which would be affecting or benefitting not only those who are directly related but also to all others that are unrelated to such activities. These externalities in the economy arise when any unrelated party (those who are not directly involved in the production/ consumption of goods and services) are influenced by such production/ consumption of goods or services. The externalities are borne by third parties who do not have any control over the generation or creation of these externalities in the economy. In general, all the externalities are technical in nature. Technical externalities impact the consumption behavior and production opportunities of unrelated third parties to any production or consumption, but the while calculating the price of consumption/production the cost of impact of these externalities are ignored. The activities undertaken by any individual/organisation is often stimulated with private gains but overlooks the bigger picture of economic gain or loss from such activities, at large. Economists, in common parlance, assume technical externalities as market vulnerabilities and advocate government interventions to regulate the market vulnerabilities to reduce these

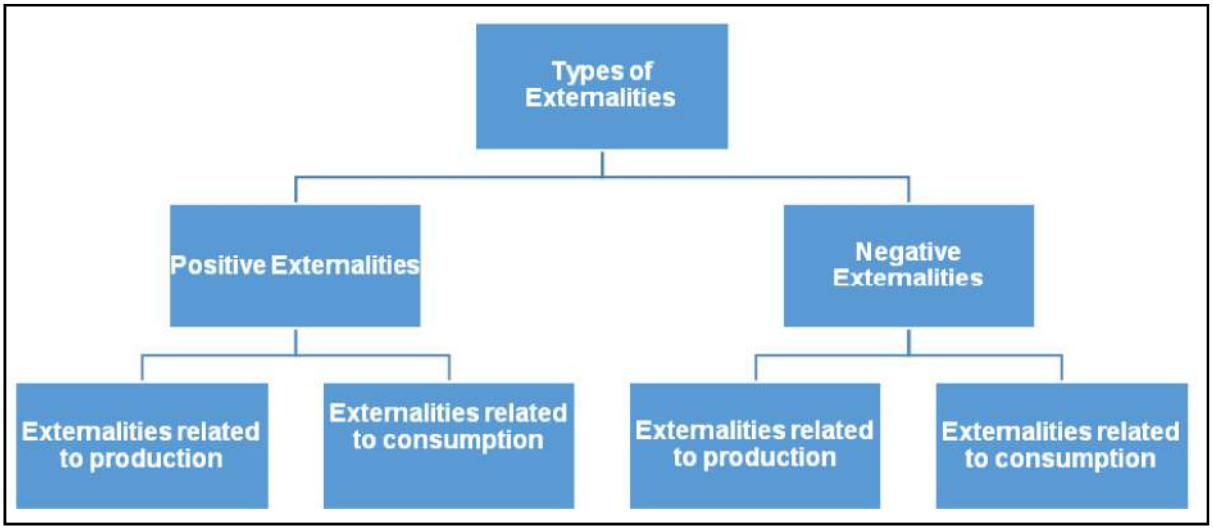
externalities. Earlier in some countries the municipal government would pay for the pollution impact caused by factories in their areas however, the healthcare costs would be borne by the residents of the area. Later in the 1990s under the several legislation enacted by the government through which the cost of pollution was transferred to the industrialists/producers, thereby increasing the cost of production which ultimately got transferred to the end-users (consumers).

Figure 4.1: Impact of Technical Externalities



Types of externalities: On the basis of the impact of the externalities on the market, it can be categorized into two viz., - Negative and Positive.

Figure 4.2: Types of Externalities



- **Negative externalities:** An economic activity which results in adverse consequences to any unrelated third party, it is known as negative

externalities. By nature, majorly all externalities are negative. Environmental pollution is one of the prominent examples of negative externalities. Externalities are negative when the private cost exceeds the social cost. The externalities which increases the aggregate cost to the economy and society, at large, results in negative externalities.

Negative Externality =Private Costs – Social Costs

Negative externalities can further be classified as – externalities related to production and externalities related to consumption. Example for externalities related to production can be – a) dumping of industrial waste in natural water bodies thereby impacting the aquatic ecology and health of residents in nearby areas consuming the contaminated water, b) poisonous gases emission from industries/ motor vehicles into air thereby deteriorating the air quality to breathe and ultimately impacting the health of the residents in the areas, c) Noise pollution created by loud speakers, crackers, etc., or by airplanes leads to hearing impairments among the residents in the areas. The example of externalities related to consumption shall include, passive smoking (affects the health of not only the smoker but also others inhaling the cigarette smoke), traffic congestions (more user of roads shall result in high traffic congestion), urbanisation (high demand for house leading to deforestation in sub-urban areas), petroleum consumption, plastic consumption etc.

- **Positive externalities:** An economic activity which results in benefits to any unrelated third party, it is known as positive externalities. Externalities are positive when the social cost exceeds the private cost. The externalities which increases the aggregate benefit to the economy and society, at large, results in positive externalities. The examples of positive externalities include – Research and Development activities performed by industries/government/individual resulting in not only generating extra revenue but also leads to social benefits by creating awareness and improving knowledge of population at large. Training and skill development activities result in educated and trained manpower which ensures the transferability of

the knowledge and skill to next generation alongwith emphasis to education.

Positive Externality = Social Costs– Private Costs

Positive externalities can also be further classified as – externalities related to production and externalities related to consumption. Example for externalities related to production can beinfrastructural development, R&D, etc. The example of externalities related to consumption shall include, education centres, free vaccinations and medical care camps, etc.



CHECK YOUR PROGRESS

Q 1: Fill in the blanks:

(a) In economics, externalities mean …….. Incurred or received by unrelated third party due to the happening of an economic event.

(b) Externalities can be classified into two i.e.……..……..and ……..……

(c) Market Vulnerabilities are also known as ……..……

(d) A negative externality arises when ……..…….. exceeds ……..……

(e) Positive externalities are classified as ……..……and ……..……

(f) Technical externalities impact on ……..……and ……..……

4.4 THE MEDIAN VOTER MODEL4.4 INEFFICIENCY DUE TO EXTERNALITIES AND THEIR CORRECTIVE MEASURES

An externality results from the consumption or production of goods or services that results in a cost/benefit to any unrelated third party. A perfect equilibrium arises when the buyers' benefit equals the producers' cost; on the other hand, lack of equilibrium gives rise to market inefficiencies

resulting out of inefficient distribution of goods and services leading to market failures.

The market failures are the indicators of inaccurate computation of true cost and benefits attached to any product or service. Where there are major externalities, the degree of equilibrium will be skewed creating the market situations that will induce individual economic agents to act and take decision which shall adversely affect the community, at large. This situation is known as market failure.

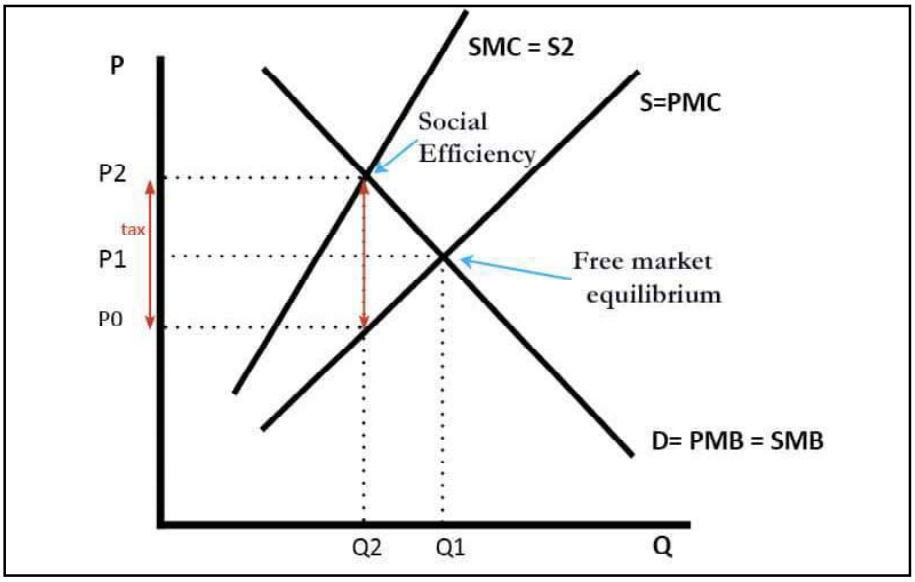
Market Equilibrium arises when - Buyers' benefits=Producers' costs

Briefly, the economists apply equilibrium models to measure externalities as loss or gain of the dead weight. This results as a difference between the societies' marginal cost and benefit curves and that of the individuals. However, theoretically it is easy to measure externalities but in practice it is difficult to estimate the effects of these externalities due to their uncertain nature of occurrence.

Corrective measures to overcome externalities: In order to acquire optimisation in allocation of resources in the presence of externalities, the British economist Arthur Pigou (propounded the concept of economic externalities) developed the concept of government interventions to control externalities by the application of taxes and subsidies. He emphasised the role of the government to encourage the production of goods/services with positive externalities by providing subsidies to producers on per unit of commodity.

Similarly, tax concession would also be extended to consumers to encourage more consumption of such goods or services that result in creation of positive externalities. On the contrary, to discourage the negative externalities, heavy tax impositions should be administered to limit the consumption of such goods or services that give rise to negative externalities in the market.

Figure 4.3: Tax imposition to overcome negative externalities



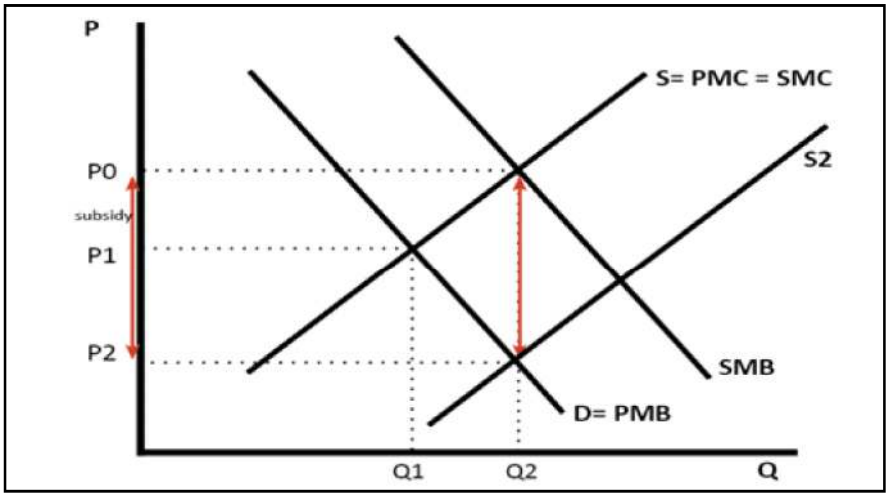
In Figure 4.3, if any negative externality related to a product/service, it shall lead to over consumption, as people tend to ignore external costs (Q1 where D=S). The imposition of tax, to reduce negative externalities would result in shifting the supply curve and inducing the consumers to pay full social marginal cost. At this point the output shall fall from Q1 to Q2 resulting in socially efficient point of intersection whereSocial marginal benefit (SMB) = Social marginal cost (SMC).

Arthur C Pigou's prescription gave rise to the term "Pigouvian Tax" which means – the amount of tax payable by the producer on its product or services that shall be equivalent to the harm caused, in the due course of production/consumption of goods/services, to others.

In case of grant of subsidies to encourage positive externalities, figure 4.4 indicates the free market equilibrium at Q1 where S = D. At this point people, at large, would maximize their welfare because the private marginal cost (PMC) here is equal to private marginal benefit(PMB).But, at Q2, social efficiency occurs, where social marginal cost (SMC) = social marginal benefit (SMB). Since at the free market equilibrium there is a possibility of social marginal benefit to exceed social marginal cost, hence society, at large, will be benefitted with increase in production/consumption of goods/services. In order to encourage more production of such goods/services, the

government shall offer subsidies to reduce price and increase quantity for consumption.

Figure 4.4: Subsidies imposition to encourage positive externalities



Sources: www.economichelp.org

Table 4.1 lists other corrective measures that can be adopted by the government to overcome externalities or market failure.

Table 4.1: Policies to overcome externalities/ market failure

Tax	Raising price of goods to reduce demand
Subsidies	Government paying part of the cost
Laws and regulations	Maximum age for buying alchohol
Pollution permits	Firms given right to pollute certaion amount
Advertising	Government waring of dangers of tobacco
Nudges	Making is harder to purchase demerit goods
Government price controls	Maximum prices/Minimum prices/Buffer stocks
Policies to reduce unemployment	Education, training, better information
Labour market regulation	Minimum wages, maximum working week

Sources: www.economichelp.org



CHECK YOUR PROGRESS

Q 2: State whether True or False:

(a) Market equilibrium arises when producers cost is more than buyers benefit. (T/F)

(b) Tax and subsidies are measures to overcome market externalities. (T/F)

(c) Pigouvian tax implies the amount of tax payable by consumers for consumption of goods or services that has caused damage. (T/F)

(d) Subsidies motivate producers to produce more goods for social benefits. (T/F)

4.5 COASE'S VOLUNTARY BARGAINING IN SMALL GROUPS

The legal and economic theory developed by economist Ronald Coase in 1960 is known as Coase Theorem which states that "if trade in an externality is possible and there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights." In other words, it asserts that in case of perfect competition private and social cost shall be equal. The theorem sets potential beneficial ways to resolve a conflict among the competing parties or other economic utilisations of limited resources. The theorem to stand true is based on the assumption of efficient hypothesis with information to be free, symmetrical and perfect, prefect competition with no transaction costs between economic agents, as the presence of these costs in the form of obligation or enforcement would affect the outcomes.

The Coase Theorem refers to events where the economic cost of one party adversely affects, either by damaging the property or leads to an expense to be borne by, the other party. On the basis of the negotiations between the competing parties, funds may either be transferred to compensate one party for the damage caused by the activity of the other or to pay the party whose action induces the damage, to abort the activity.

To understand the theorem let us assume that there is a fish market next to a coffee shop and the smell of the fish market affects the business of the coffee shop. Also, let us evaluate the damage of coffee shop in monetary terms. Assuming the cost of damage to the coffee shop is Rs. 100/- per kg of fish. When the matter was filed in the court, the court shall decide who is liable for damage and has right to complain i.e., who to be penalised - fish market or coffee shop. Table 4.2 indicates the possible decisions that the court may announce.

Table 4.2: Possible Decision of the Court

Fish Market is Liable	Coffee Shop is Liable
1) Pay Coffee Shop Rs. 100/- per kg of fish	1) Suffer from smell Rs. 100/- per kg of fish
2) Install Air Cleaner Rs. 500/- per kg of fish	2) Pay Fish Market for Scrubber Rs. 500/- per kg of fish
3) Fish Market Moves Rs. 800/- per kg of fish	3) Pay Fish Market to Move Rs. 800/- per kg of fish
4) Pay Coffee Shop to Move Rs. 1000/- per kg of fish	4) Coffee Shop Moves Rs. 1000/- per kg of fish

According to the Coase theorem, the parties would agree to the cheapest penalty which would be pay coffee shop Rs.100/- per kg of fish. However, in other case, if the cost to the coffee shop was greater than assumed, the coffee shop would have chosen to install air cleaner, as it would have been the cheapest option.

Taking the example of a wind turbine, it is efficient to allow the turbine to make noise while its operation, if the value of the benefit from the operation is greater than the cost of noise imposed upon the people living in the area and vice-versa. However, there is a clear conflict between Turbine Company and local households in the area, which will lead to legal intervention by the court. In this matter, the court may confer the right to operate the wind turbine to the turbine company at the cost of the quietness of the households or may confer the right to the household of their demand for quietness at the cost of the operations of the turbine. Coase theorem states that the decision of court to confer property right has no effect on whether the turbine company continues operation till the time the parties are able to bargain without any cost. Supposedly, if the value of operations for the turbine company is more than the cost imposed on the household, and when the court confers the property right of quietness onto the households, the turbine company shall be willing to compensate households to stay in the business rather than shutting down the operations. On the other hand, if court confers the property rights upon the turbine company and regards that the turbine operation is efficient over the quietness of the local household, no compensation will be exchanged, as the households shall not agree to pay sufficient amount to compensate the losses from shutting of turbines to the company and therefore, the company would continue the operations.



CHECK YOUR PROGRESS

Q 3: Fill in the blanks:

(a) The Coase's Theorem was propounded by……..……...

(b) The important assumptions of Coase's theorem are .....……..... and ……..

(c) According to Coase's theorem, in case of prefect competition …….. = ……..

(d) Coase's theorem states that the conferring of the property right to any competing parties will have no effect till the time parties are able to bargain ……..



4.6 LET US SUM UP

- Externality is a resultant of market inefficiencies arising out of the production of goods or services which causes an impact in the form of a cost or benefit to any unrelated third party who has no control or contribution in such activities of production of goods and services.
- Market inefficiencies lead to market failures due to inefficient distribution of goods and services in the market.
- Externalities create discrepancy between private and social cost/ benefits and results in negative or positive externalities.
- Coase's theorem provides a platform for evaluating possible solutions for the conflicting parties in the presence of externalities. It asserts that if the trade externality is made possible with no transaction cost involved, the negotiations among the parties will result in an efficient outcome without government interventions to confer upon the property rights.



4.7 FURTHER READING

1) Tresch, R . *Public Finance – A Normative Theory.* Academic Press.

2) Gruber, J. *Public Finance and Public Policy.* Worth Publisher.

3) Ghosh, A. *Public Finance.* New Delhi: Prentice Hall India Learning Private Limited.



4.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) Cost or Benefit (b) Negative and Positive

(c) Technical externalities

(d) Externalities related to production and Externalities related to consumption

(e) Consumption behavior and production opportunities of unrelated third parties.

Ans to Q No 2: (a) False (b) True (c) False (d) True

Ans to Q No 3:

(a) Ronald Coase

(b) Efficient hypothesis of free, prefect and symmetric information, perfect competition and no transaction cost.

(c) Private and social cost shall be equal (d) Without any cost.



4.9 MODEL QUESTIONS

(A) Short Questions (Answer in 150 words)

Q 1: Explain the meaning and nature of externality.

Q 2: Differentiate between negative and positive externalities.

(B) Essay-type Questions (Answer in 300-500 words)

Q 1: Examine the measures to overcome externalities with diagrammatic representation.

Q 2: Briefly discuss the implication of Coase's theorem with example.

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UNIT 5: THEORIES OF PUBLIC EXPENDITURE

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Public Expenditure

5.4 Public vs. Private Expenditure

- 5.4.1 Dissimilarities between Public and Private Expenditure
- 5.4.2 Similarities between Public and Private Expenditure

5.5 Classification of Public Expenditure

5.6 Main Canons of Public Expenditure

5.7 Theories of Public Expenditure

- 5.7.1 Lindahl's Voluntary Exchange Theory
- 5.7.2 Samuelson's Theory of Public Expenditure

5.8 Let Us Sum Up

5.9 Further Reading

5.10 Answers to Check Your Progress

5.11 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- Explain the meanings, similarities and dissimilarities of 'public expenditure' and 'private expenditure'.
- Understand how public expenditure can be classified.
- Discuss the canons of public expenditure
- Explain the theories of public expenditure as put forward by Lindahl & Samuelson.

5.2 INTRODUCTION

Before going into the theories of public expenditure, the basic concept of public expenditure need to be understood. Further, its basic difference

with private expenditure shall also be analysed that will definitely make the concept more clear. The canons, classification of public expenditure shall also be analysed before analysing the theories.

Two primary models of public expenditure shall be discussed in this unit. Firstly, Lindahl's Voluntary Exchange Theory and Secondly, Samuelson's Benefit Theory of Public Expenditure shall be discussed.

5.3 PUBLIC EXPENDITURE

Public expenditure plays a significant role in public finance. There was very little interest towards public expenditure in the academic arena in the nineteenth century and it was thought that public expenditure was wasteful. At that time, the functions of the government were restricted only to justice, police and arms. It was believed that public expen-ditures should be kept low as far as possible. The cliché was that *'the very best of all plans of finance is to spend little, and the best of all taxes is that which is least in amount.'* Moreover, there was also no proper classification of public expenditure. However, this traditionalist view witnessed a change in the twentieth century, particularly after the Second World War. J. M. Keynes emphasized the importance of public expenditure in the 1930s. With time, when the economic activities became more multifaceted and diversified, the economists realized the importance of public expenditure.

Let us now look into the definition of public expenditure that throws lights on what public expenditure actually is in the changed scenario.

Public expenditure refers to the expenses incurred by the public authorities namely, Central, State and Local self-governments (municipalities and public corporations). Such expenditures are made for meeting the expenses of the government, for the satisfaction of collective needs of the people as well as for the benefit of the society.

5.4 PUBLIC VS. PRIVATE EXPENDITURE

5.4.1 Dissimilarities between Public and Private Expenditure

- **Different objectives:** Public expenditure is intended for the welfare of the society or the country. The motive of private expenditure, on the other hand, is restricted to the welfare of self and her/his family.
- **Expenditure vs. income:** The total public expenditure for different welfare activities is first estimated by the government and then methods are formulated to raise the required revenue through various avenues. In case of private expenditure, the individual tries to adjust the expenditure based on his income.
- **Methods of Raising Resources are Different:** The government has that power to raise revenues from the citizens in the form of taxes or by selling bonds. Government may also bring money from external sources like IMF, World Bank, foreign countries; and can even print money to meet the public expenditure. An individual, however, cannot compel others to pay him money in any form and does not have the right to print money.
- **Duration of benefit:** Public expenditure is generally planned for long-term benefits of the society. The plans of private expenditure are, on the contrary, short termed, though in recent years such expenditure is also targeted for long-term benefits in some cases.
- **Profit motive:** The main objective of public expenditure is welfare of each people of the society. The objective of private expenditure is maximising private profits.

5.4.2 Similarities between Public and Private Expenditure

- In case of both the expenditures, the individual and the State try to derive maximum satisfaction out of the respective expenditures at minimum cost.

- The individual and the State adjust their income to expenditure. If public expenditure exceeds the income, the government may impose more taxes. If an individual's expenditure exceeds his income, he will try to earn more by putting hard labour or by sacrificing leisure.

5.5 CLASSIFICATION OF PUBLIC EXPENDITURE

Different economists have classified Public Expenditure into different forms. On the basis of functions performed by the government, Prof. Adam Smith classified public expenditure into defence expenditure, commercial expenditure and development expenditure. Prof. Dalton classified public expenditure into grants and purchase price. When the government transfers its resource without any quid pro quo, it is grant. When the government transfers revenue to individuals or community in return for specific services, it is called purchase price.

Normally, public expenditure is classified into:

- **Revenue expenditure:** Revenue expenditures are recurrent expenditures that include expenses on maintaining existing assets but do not create any asset by itself. Revenue expenditure includes spending on civil administration, defence and welfare schemes, etc.
- **Capital expenditure:** Capital expenditures are incurred to create assets for future flow of income or that adds to the existing production capacity. This type of expenditure is non-recurring and is incurred once. Capital expenditure includes expenses on multipurpose projects, on large industries like iron, steel and cement, on machinery, building and land.
- **Development expenditure:** This consists of expenditures made on irrigational development, industrial development, improvement of education and health facilities, etc.
- **Non-development expenditure:** This is the expenditure on civil administration, police force, defence forces, judiciary, etc.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True (T) or False (F).

(i) Public expenditure is intended for the welfare of any individual. (T / F)

(ii) The objective of private expenditure is maximisation of profit. (T / F)

Q 2: What is meant by public expenditure? (Answer in about 40 words)

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Q 3: What is meant by capital expenditure? (Answer in about 40 words).

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5.6 MAIN CANONS OF PUBLIC EXPENDITURE

The eight main canons of public expenditure are:

(i) Canon of Benefit

(ii) Canon of Economy

(iii) Canon of Sanction

(iv) Canon of Surplus

(v) Canon of Elasticity

(vi) Canon of Neutrality

(vii) Canon of Productivity

(viii) Canon of Equitable Distribution

- **Canon of Benefit:** According to Prof. Findlay Shirras, 'other things being constant, public expenditure should bring with it important social advantages such as increased production, preservation of society

as a whole against external attack and internal disorder and as far as possible a reduction in the inequalities of income. In short, public funds must be spent in those directions most conducive to the public interest i.e. maximum utility is to be attained in public expenditure. (Dalton, Principles of Public Finance)



According to Dalton, "public expenditure in every direction must be carried just so far, that the advantage to the com-munity of a further small increase in any direction is just counter balanced by the disadvantage of a corresponding small increase in taxation or in receipts from any other source of public income".

Canon of Benefit, the fundamental canons of public expenditure, thus states that money should be spent so as to pro-mote Maximum Social Advantage (MSA). Benefits from public expenditure should not be targeted towards any individual or group, rather should be equitably distributed for the benefit of the entire society.

- **Canon of Economy:** Canon of Economy states that a country should be economical in spending money for the society. The existing limited revenue resources should be used in a productive manner. The money spent should result in the creation of productive powers of the society considering the present and taking care of the future. Duplication of expenditure, wasteful & extravagant expenditure and over-lapping of authorities should be avoided. According to Prof. Shirras, 'canon of economy means protecting the interests of the tax payer and not merely in effecting economies in expenditure but in develop-ing revenue'.
- **Canon of Sanction:** Canon of sanction requires that the public authorities should spend money, only after obtaining sanction a-priori from the concerned authority for particular purpose. This is done to restrict or prevent the possibility of injudicious and out of control expenditure. Stated alternately, canon of sanction mentions that no public expenditure should be incurred without proper sanction in order to avoid misappropriation of funds and possibility of unneces-sary spending of public money. Systematic audit and necessary inspection are compulsory to ensure accountability.
- **Canon of Surplus:** The government should always aim at a surplus of income over ex-penditure and should avoid deficits. Prof. Shirras observes, 'public authorities must earn their living and pave their way

like ordinary citizens. Balanced budgets must, as in the private expenditure be the order of the day. Annual expenditure must be balanced without the creation of fresh credits unpresented by the new assets'. Government should not always overspend and run into permanent deficits and consequent debt years after years.

Efforts should be made to keep the expenditure less than the earnings of government, so that the surplus gen-erated can be used at times of unavoidable deficit.

- **Canon of Elasticity:** Canon of elasticity requires that the rules guiding the expenditure policy of the government should not be rigid and should vary according to needs and circumstances. In other words, the expenditure should be flexible and 'the government should be able to increase public expendi-ture during periods of economic emergency and to decrease during periods of normalcy'. If the economy suffers from high unemployment and consequent deficiency in demand, the government should spend more to increase purchasing power of the people in order to generate employment opportunities and increase effective demand.
- **Canon of Neutrality:** Canon of neutrality implies that public expenditure should not adversely affect production, distribution and exchange activities of the economy. Public expenditure should only result in increased production and productivity, re-duced inequality of income & wealth and augmented economic ac-tivity. In short, public expenditure should only facilitate improvement of the production-distribution-exchange relationship in the economy.
- **Canon of Productivity:** This canon implies that, expenditure policy of the government should encourage production and productive efficiency of the economy. Major percentage of public expenditure should be allocated for productive and development purposes in order to raise level of employment, income, effective demand, etc. of the economy.

- **Canon of Equitable Distribution:** According to this canon, public expenditure should be incurred in such a way that the noticeable inequalities in the distribution of income and wealth be **minimized** significantly. The govern-ment spending should be so designed to benefit the poorer sections of the community. Expenditure programmes should be planned to provide educational facilities, medical benefits, cheap housing facili-ties, old age pension and other social security measures to the poorer and weaker sections of the community.

Besides these eight canons of public expenditure, three other canons namely, canon of certainty, canon of programmes and canon of performance were also suggested by economists.



CHECK YOUR PROGRESS

Q 4: State whether the following statements are True (T) or False (F)

(i) Canon of Benefit states that benefits from public expenditure should be targeted towards any individual. (T / F)

(ii) Canon of sanction states that the public authorities should spend money only after obtaining sanction in advance from the concerned authority. (T / F)

Q 5: Briefly state the thrust area of Canon of Benefit. (Answer in about 40 words)

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Q.6: What does Canon of elasticity state? (Answer in about 40 words).

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5.7 THEORIES OF PUBLIC EXPENDITURE

Public expenditure did not receive much attention in ancient times and classical theorists/economists did not felt the urge to propound any theory on this issue. The governments in various countries also had minimal spending towards public services. However, in the twentieth century after the initiation of the concept of welfare state, the role of the government had changed significantly and the importance of public expenditure came in front. Adam Smith confined the subject of *public expenditure to defence, administration of justice and certain public works*. Pigou pointed out "*Expenditure should be spent in all directions up to the point at which satisfaction obtained from the additional shilling spent is equal to the satisfaction cause in respect of the last shilling called upon by the government to be paid by the people by way of revenue*".

However, the theories of public expenditure that were proposed at different times are broadly classified into (i) Pure theories of Public Expenditure, and (ii) General theories of Public Expenditure.

The Pure theories are further classified into:

(a) Pigou's Ability to Pay theory (1954)

(b) Lindahl's Benefit Analysis (Voluntary Exchange Theory) (1919)

(c) Samuelson theory (1955)

(d) Johansen theory (1966)

The General theories are classified into:

(a) Adolph Wagner hypothesis

(b) Peacock-Wiseman hypothesis

(c) Colin Clark hypothesis or Critical Limit hypothesis

However, we would discuss only two models as incorporated in your syllabus. The two theories of public expenditure as put forward by Lindahl and Samuleson are discussed in the following sections.

5.7.1 Lindahl's Voluntary Exchange Theory

In unit 2, you have learnt about public goods and free rider problem.

We know that for provision of public goods, a price mechanism does

not exist due to joint consumption by the individuals. The public goods cannot be sold separately & individually and no member of the society can be excluded from the consumption of that particular good (whether an individual pays or not). Various economists proposed and constructed models to introduce price mechanism on the consumption of public goods.

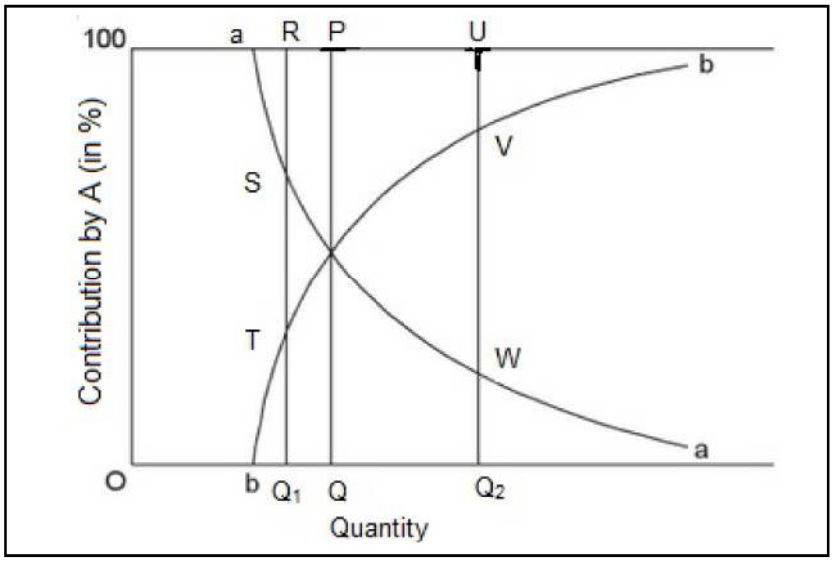
The Swedish economist, Eric Lindahl (1919) explains that the price of public good will be charged accordingly as the demand and supply of any other commodity, and he regards the determination of public expenditure in connection with the distribution of the corresponding tax burden among the groups within the community. The distribution ratio for this burden will then play a role similar to that of prices in the adjustment between supply and demand in any ordinary market.

The theory constructed by Lindahl can be established based on a three-step choice. *Firstly*, a choice must be made between the satisfactions of alternative wants by private households, before determining the relative distribution of tax shares between tax payers. If a certain amount is to be raised in the form of tax from the tax-payers A & B, and if B pays larger share of the total tax, then tax-payer A pays less tax and curtailment of his own private outlays will be smaller. Opposite is the case if A pays larger share (Lekhi, 2011). *Secondly*, a choice between the satisfactions of alternative wants in the public sector is required. In order to spend more on defence, expenditure is to be curtailed in other heads. *Thirdly*, a choice is to be made between public wants and private wants in order to determine the total revenue to be collected and spent. If public expenditures are decided to be lower, then less tax revenue need to be collected and tax-payers will curtail less of their private spending. It is clear by now that the three choices are mutually interdependent and must be rendered jointly.

In this theory, it is assumed that two joint product X & Y are produced and the allocation of the total cost of production of these joint products is made based on their respective supply prices (not according to cost input) depending on the demand for these two products in the market. It is assumed that, individual A purchases X and individual B purchases Y. If A is willing to share smaller portion of the total cost of production of both X & Y, then B will have to contribute larger share. Again, if B is willing to share less, A will have to contribute larger share. *A's dependence on B is due to the fact that benefits derived from the supply of public services are not divisible into individual benefits. They are jointly received by all members of the community*.

Let us consider Figure 5.1 to analyse the theory. In the diagram, the total cost percentage contributed by tax-payer A is plotted along the horizontal axis and the quantities of the public goods that the tax-payers A & B purchase is plotted along the vertical axis.

Fig. 5.1: Lindahl's Voluntary Exchange Model



In Figure 5.1, the total cost implies the cost incurred in providing the public goods X & Y. The percentage of total cost that A is willing to contribute is indicated by the curve aa. Similarly, the percentage that B is willing to contribute is shown by the curve bb. It is shown in

the diagram that the maximum amount of pubic good that can be produced is OQ. At this level of production, A contributes EQ percentage of total cost of production, while B contributes EP percentage.

It can be shown that for any other quantities of public good produced, the total cost is either 'under-contributed or over-contributed'. The cost of production is under-contributed if quantity produced is more than OQ, whereas it is over-contributed if the total production is less than OQ. If the quantity of good produced is OQ_1, A is willing to contribute SQ_1 percentage, while B is interested to make a payment of RT percentage of the total cost. The joint contribution of A & B comes out to be (SQ_1 + RT), which is more than the total cost RQ_1. This is a case of over-contribution. On the other hand, when production is at OQ_2, A is willing to pay WQ_2 percentage and B will prefer to contribute UV percentage. The joint contribution is (WQ_2 + UV), which is not sufficient to cover the total cost of production. Hence, there is under-contribution. VW percentage of total cost remains uncovered.

However, the theory is criticised on the ground that only two tax-payers have been considered in the model. The situation is more like isolated barter or bilateral monopoly than a competitive market with many sellers and many buyers. It is also assumed here that both A & B possess equal bargaining power, which is quite impossible.

5.7.2 Samuelson's Theory of Public Expenditure

In 1954, Paul A. Samuelson presented on just two and half pages what he claimed to be 'a pure theory of government expenditure on collective consumption goods'. Just a year later, he supplemented this theory by an equivalent diagrammatic formulation and a few clarifying comments (Pickhardt M., 2006). Samuelson 'explicitly assumed two categories of goods: ordinary private consumption goods

which can be parcelled out among different individuals and collective consumption goods which all enjoy in common in the sense that each individual's consumption of such a good leads to non-subtraction from any other individual's consumption of that good' (Samuelson, 1954). Private goods are provided on the basis of preferences revealed freely by the individuals. On the other hand, public goods are provided collectively and individual preferences cannot be known. As such, the market principle cannot be applied to the provision of public goods. 'In a democratic society the optimal justification of the government provision of public goods or other activities is the desire of the members of the society for such goods and activities rather than an authoritarian determination that such action is desirable. Though the government may largely influence individual preference for public goods, it may be assumed that such preferences are the ultimate source of justification for governmental activities' .

Based on these assumptions, the application of market principle for the determination of the optimal provision of financing of public goods can be analyzed. Let us consider Fig 5.2(a) and Fig. 5.2(b) to analyze the theory.

Figure 5.2: Samuelson's Theory of Public Expenditure

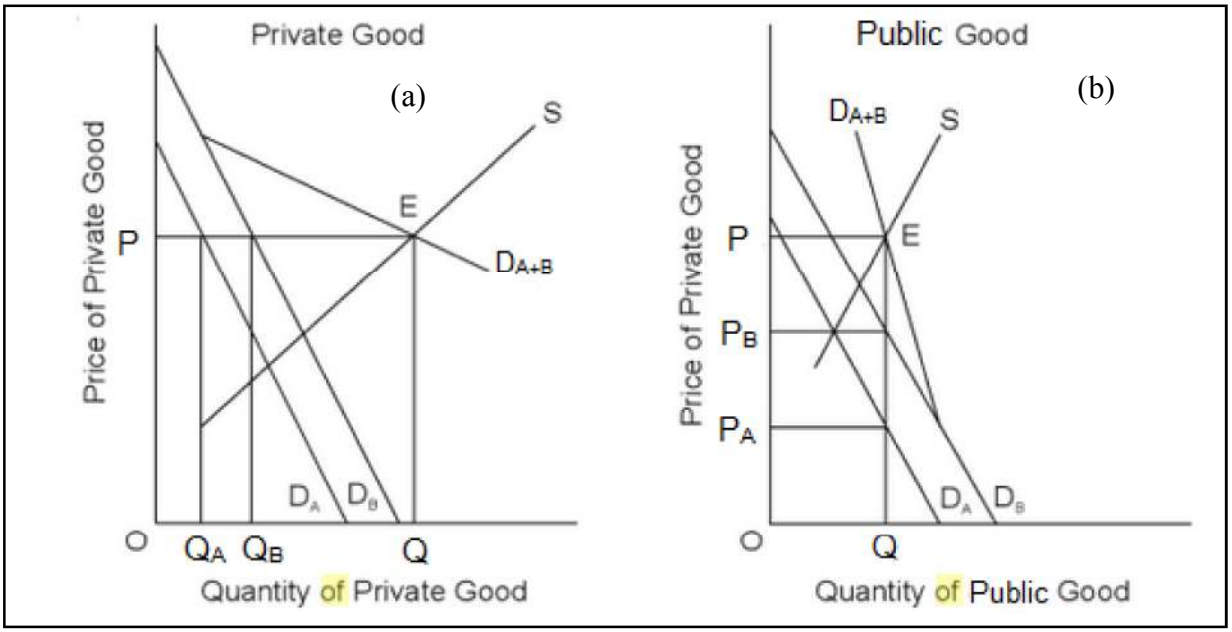


Figure 5.2(a) shows the demand for a private good, whereas Figure 5.2(b) displays the demand for public good. The two figures show the demand for a private good as well as for a public good for two individuals A & B in a situation when income distribution and prices of other goods are given.

In Figure 5.2(a), D_A and D_B are the demand curves for private good X for individuals A & B respectively. The horizontal summation of these two demands gives the market demand for X as shown by demand curve D_{A+B}. The supply is S. The equilibrium point is E at which the market demand curve D_{A+B} intersects supply curve S. Price of good X is OP for both A & B. The total quantity of good X purchased is OQ, out of which A purchases OQ_A and B purchases OQ_B quantities such that $OQ_A + OQ_B = OQ$.

In Figure 5.2(b), D_A and D_B are the demand curves for public good Y of individuals A & B respectively. D_{A+B} is the market demand curve for that good obtained by vertical summation of D_A and D_B. Question may arise that why individual demand curves are added vertically to get market demand curve. The answer is: since the public good Y is consumed in same quantity by all individuals of the market, the market demand curve is obtained by vertical addition of individual demand curves. Supply curve is S. Equilibrium point is at E. The total quantity consumed by individuals A & B is OQ. The combined price is OP, out of which A pays OP_A and B pays OP_B such that $OP_A + OP_B = OP$.



CHECK YOUR PROGRESS

Q 7: State whether the following statements are True (T) or False (F)

(i) Voluntary Exchange Theory was proposed by Eric Lindahl. (T / F)

(ii) Market principle cannot be applied to the provision of public goods. (T / F)

Q 8: 'The theory constructed by Lindahl can be established based on a three-step choice'. - What are these three choices? (Answer in about 40 words)

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5.7 LET US SUM UP

- Public expenditure refers to the expenses incurred by the public authorities namely, Central, State and Local self-governments (municipalities and public corporations). Such expenditures are made for meeting the expenses of the government, for the satisfaction of collective needs of the people as well as for the benefit of the society.
- Public and private expenditures have similarities on grounds of (i) maximisation of satisfaction out of the respective expenditures at minimum cost, and (ii) adjustment of income to expenditure.
- Public and private expenditures are dissimilar as their objectives are different - public expenditure targeting welfare maximisation and private expenditure restricted to the welfare of self and family. These two expenditures are different in methods of raising resources, adjustment of expenditure, duration of benefit and motive of expenditure.
- Public expenditure can be classified into revenue expenditure, capital expenditure, developmental expenditure and non-developmental expenditure.
- There are eight main canons of public expenditure viz., Canon of Benefit,Canon of Economy, Canon of Sanction, Canon of Surplus, Canon of Elasticity, Canon of Neutrality, Canon of Productivity, and Canon of Equitable Distribution

- The theories of public expenditure that were proposed at different times are broadly classified into (i) Pure theories of Public Expenditure, and (ii) General theories of Public Expenditure.
- The Pure theories are further classified into:
  (e) Pigou's Ability to Pay theory (1954)
  (f) Lindahl's Benefit Analysis (Voluntary Exchange Theory) (1919)
  (g) Samuelson theory (1955)
  (h) Johansen theory (1966)
  The General theories are classified into:
  (d) Adolph Wagner hypothesis
  (e) Peacock-Wiseman hypothesis
  (f) Colin Clark hypothesis or Critical Limit hypothesis
- The Swedish economist, Eric Lindahl (1919) explains that the price of public good will be charged accordingly as the demand and supply of any other commodity, and he regards the determination of public expenditure in connection with the distribution of the corresponding tax burden among the groups within the community. The distribution ratio for this burden will then play a role similar to that of prices in the adjustment between supply and demand in any ordinary market.
- Samuelson's theory of public expenditure emphasizes on an efficient allocation of public and private goods in an economy, thus, indirectly pointing towards a greater uniformity in the public expenditure pattern for provisioning of public goods.



5.8 FURTHER READING

1) Lekhi, R.K. (2011). *Public Expenditure and Theories of Public Finance.* Ludhiana: Kalyani Publishers.
2) Gruber, J. *Public Finance and Public Policy.* Worth Publisher.
5) Ghosh, A. *Public Finance.* New Delhi: Prentice Hall India Learning Private Limited.

5.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (i) False (ii) True

Ans to Q No 2: Public expenditure refers to the expenses incurred by the public authorities namely, Central, State and Local self-governments (municipalities & public corporations) that are made for meeting the expenses of the government, for the satisfaction of collective needs of the people as well as for the benefit of the society.

Ans to Q No 3: Capital expenditure is a type of public expenditure which is non-recurring and is incurred once. Expenses on multipurpose projects, on large industries like iron, steel and cement, on machinery, building and land are included in capital expenditure.

Ans to Q No 4: (i) False (ii) True

Ans to Q No 5: The Canon of Benefit stresses that public expenditure should be made in a manner such that it confers highest social benefits and should not provide benefit to an individual or a particular group of the society.

Ans to Q No 6: Canon of elasticity requires that the rules guiding the expenditure policy of the government should not be rigid. The expenditure should be flexible and the government should be able to increase public expenditure during periods of economic emergency and to decrease during periods of normalcy.

Ans to Q No 7: (i) True (ii) True

Ans to Q No 8: Firstly, a choice must be made between the satisfactions of alternative wants by private households, before determining the relative distribution of tax shares between tax payers. Secondly, a choice between the satisfaction of alternative wants in the public sector is required. Thirdly, a choice is to be made between public wants and private wants in order to determine the total revenue to be collected and spent.



5.10 MODEL QUESTIONS

(A) Short Questions (Answer each question in 150 words)

Q 1: Make a comparative analysis between public expenditure and private expenditure.

Q 2: Mention various theories of public expenditure.

Q 3: What types of expenditures are included in Revenue expenditure, capital expenditure, development expenditure and non-development expenditure?

(B) Essay-type Questions (Answer each question in 300-500 words)

Q 1: Discuss the various canons of public expenditure.

Q 2: Discuss the Voluntary Exchange Theory as proposed by Lindahl.

Q 3: Discuss Samuelson's theory of public expenditure.

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UNIT 6: PUBLIC EXPENDITURE AND PROJECT APPRAISAL

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Public Expenditure

- 6.3.1 Meaning and Definition of Public Expenditure
- 6.3.2 Classification of Public Expenditures

6.4 Perspectives of Public Expenditure:

- 6.4.1 Effects of Public Expenditure on Production
- 6.4.2 Effects of Public Expenditure on Distribution
- 6.4.3 Effects of Public Expenditure on Economic Stability
- 6.4.4 Role of Public Expenditure in Developing Economy
- 6.4.5 Government Investment and Social Cost-Benefit Analysis

6.5 Let Us Sum Up

6.6 Further Reading

6.7 Answers to Check Your Progress

6.8 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- derive the meaning of the terms 'public expenditure' and discuss the classification of government expenditures
- discuss the perspectives of public expenditure in terms of its effects on production, distribution and economic stability, role in developing economy; and government investment and social cost-benefit analysis

6.2 INTRODUCTION

In the previous unit (unit 5), we have discussed about theories of public expenditure. From the unit you have already known the two influential

theories of public expenditure- Lindahl's voluntary exchange theory and Samuelson's benefit theory, with respect to government expenditure on public goods and inputs. Thus, public expenditure simply refers to government's spending on various *public goods* (and services) so as to satisfy *public needs*. However, the detail of public expenditure is complex and this unit does not attempt to provide comprehensive coverage of every aspect. In this unit, we shall try to look at some important definitions of public expenditure. We shall also discuss the classification of government expenditures.

It is also important to discuss significant perspectives that characterise public expenditures. In this unit, we shall discuss the different perspectives of public expenditure in terms of its effects on production, distribution and economic stability. In addition, we shall look at the role of public expenditure in developing economy, including government investment and social cost-benefit analysis.

6.3 PUBLIC EXPENDITURE

As stated earlier, public expenditure refers to government's spending on various *public goods* (and services) so as to satisfy and serve *public needs*. Here, the two phrases '*public goods* and *public needs'* are important. First, the phrase *public goods* denote representations of collective identity of a particular community or groups of communities –that is goods that people enjoy together without competing with each other over benefits. They are goods endorsed by the communities—for example, buses and trains, the arts, armies, the police, public schools, public parks, public highways, infrastructure and some environmental goods such as water and sunshine. In some cases, they also symbolise common interests that should undermine private interests. The second phrase, *public needs*, can be described as projects or activities that are designed to be beneficial to a particular community or groups of communities. Examples of public needs include internal security, medical service, educational programs, and transportation, among others.

6.3.1 Meaning and Definition of Public Expenditure

As stated earlier, public expenditure is incurred on various activities for the welfare of the people. Put simply, public expenditures are expenditures incurred by the central, state and local governments to satisfy the collective social wants of the people. This unit does not deal with the theories since the previous unit has dealt with them. Taken together, the detail of public expenditure is complex because the modern 'state' is such a difficult concept to analyse. Also, care is always required in the way public expenditures are defined, especially when these become the subject of heated political debate.

Although the term 'state' is mostly used in theoretical discussions in economics and political science, it is rarely used in political debate in developing countries. Instead, the term 'government' is used, with distinctions made between central, state and local government. The three governments constitute the 'general government' sector in the national accounts. This brings it to one level. But there is a wide range of other organisations including, public enterprises and a host of *ad hoc* bodies established by government to carry out particular kinds of activities and expenditure. Still, bodies that are effectively controlled by central government and rely on it for most of their funding are generally seen as part of the central government. In addition, there can be considerable argument where the public sector (that is, central government plus public corporations) ends. The term 'quasi-public sector' is used by social scientists as umbrella term for organisations that are very close to central government (perhaps by virtue of financial dependency or effectively being under government's control). Following conventional practice, our emphasis in this unit is on central government and public sector since the latter is mostly under government's control in most developing countries.

6.3.2 Classification of Public Expenditures

Public expenditures can be grouped in different ways. In this unit, we shall basically classify various programs of government spending in a manner that sets out the background for Unit 7 (Public Expenditure Analysis). This classification represents a ranking of government expenditures with respect to the problems of allocating benefits of these expenditures to different income groups. In this unit, government expenditures are divided into four major categories: (i) transfer payments; (ii) purchases of goods and services; (iii) general expenditures; and (iv) interests on the public debt. Interests on the public debt are placed in a separate category because it does not share the main characteristics of either transfers or purchases.

- **Transfer Payments:** Transfer payments are payments made by the government for the purpose of redistributing income and wealth without procuring goods and services in return. Transfers payment may be divided into transfers to persons and transfers to business.
  - **Transfers to Persons:** Transfers to individuals can be divided into two components: direct transfers to individuals and indirect transfers. Direct transfers comprise all the payments that government makes directly to individuals without receiving any returns. Indirect transfers comprise all the cash grants to non-business organisations, such as charitable and non-profit organisations, which use these funds to deliver cash and non-cash benefits to targeted groups of individuals and families.

    Direct transfers to individuals involve a direct relationship between cost to government and benefit to individuals because a Rupee spent by the Indian Government adds a Rupee of income to the individual. In addition, one can easily identify the beneficiaries of these transfers because these programs are usually targeted to select groups (for example, scholarships).

The allocation of indirect transfers is a bit complex because, in this case, private sector institutions serve as intermediaries between the government and the intended beneficiaries and because the benefits received may be in the form of goods and services instead of income. For example, grants to cultural organisations that sponsor theatre or music performances. If those performances are made possible by the government grants, the expenses incurred are likely to benefit both patrons and performers, who otherwise would have to seek alternative employment. Normally, the allocation of these indirect transfers requires a distribution between performers and patrons and the identification of patrons according to their income levels. In practice, a rougher approximation may be used, depending on the type of data available and details of the expenditure (see further details on public expenditure analysis in Unit 7).

- **Transfers to Business:** Transfers to business are government subsidies to firms in selected economic sectors. Here, government wants to deliver special benefits to individuals who consume particular private goods and services, and it uses the producers as intermediaries. The allocation of subsidies is facilitated by the selective use of these government transfers, which allows identification of the targeted sectors. One can identify the beneficiaries as the producers or the consumers of the subsidised commodities. Whether the benefits of these subsidies are retained by their recipients or are passed on to consumers depends mostly on the extent of price flexibility for the commodities being subsidised. For example, in most developing countries that make heavy use of marketing boards for the purpose of stabilising farm prices, agricultural subsidies are likely to benefit farmers as producers because, in those cases, farmers would be price takers.

- **Purchases of goods and services:** Purchases of goods and services are usually referred to as 'in-kind transfers'. This is because the beneficiaries are recognisable but the benefits they receive are in the form of free goods and services rather than cash. The relationship between cash and in-kind transfers is best explained by the case of education. The government may provide school vouchers to each child of school age to pay for the full cost of education. Alternatively, the government may build schools and pay teachers to provide free education services to children of school age. Aside from the issues associated with comparisons between private and public schools, the students receive the same benefits from these two public spending programs; only the delivery mechanisms differ. In the first case there is a direct transfer payment, while in the second case there is a noncash transfer of equivalent value.

- **General Expenditures:** This type of expenditures includes all expenses for which specific beneficiaries cannot be identified. The primary components in this type of expenditure are central administrative expenditures, spending on the executive and legislative arms of government, spending on environmental protection, national defence expenditures, and expenditures on the protection of persons and property, which include spending on the police, the court system, and correctional facilities. The main concern about general expenditures is that it contains mainly public goods. Because the benefits of these goods are enjoyed by the entire population and the benefits received by individual A do not affect the benefits received by individual B, it is not realistic to allocate these expenditures to specific beneficiaries. Thus, one must find some general rules for distributing these expenditures to all members of society.

Interest Payments on the Public Debt: These expenditures are cash payments to individuals or institutions but they involve a

quid pro quo because they are considerably paid to those who hold government bonds. Since they are conditional payments, one may argue that they do not provide benefits to the recipients and, therefore, should not be included in expenditure incidence. After all, the owners of government bonds might have purchased private securities if government bonds were not available. Eliminating interest on the debt from expenditure incidence, however, would create an inconsistency in the treatment of revenues and expenditures. The costs of servicing the public debt in a given year are financed through current taxation. That tax revenue is fully allocated to those who bear its burden. To maintain consistency, all the expenditures that are financed through current taxation must also be allocated. The relevant issue is how this component of public spending should be allocated. Public debt accumulates because taxpayers, through the political process, decide to receive in a given year public services for which they are not willing to pay immediately. The interest on the debt may be considered a measure of the benefit from consuming public goods and services before they are fully paid. The allocation of the interest on the public debt, therefore, raises the issue of intergenerational equity. In theory, these payments should be allocated to those who benefit from public expenditures financed through borrowing. In practice, the identification of these beneficiaries is an impossible task. Therefore, one is left with the choice of somewhat arbitrary allocation rules.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True (T) or False (F).

(i) Public expenditure satisfies and serves governmental needs. (T/F)

(ii) The three governments that constitute 'general government' sector in the national accounts are central, state and local government.

(T/ F))

Q 2: What is meant by public expenditure? (Answer in about 40 words)

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Q 3: Distinguish between public goods and public needs? (Answer in about 50 words)

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Q 4: Pick two out of the following lists of classification of public expenditures and briefly explain them: a) Transfer payments, b) Purchases of goods and services, c) general expenditures, d) Interest payments on the public debt (Answer in about 50 words)

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6.4 PERSPECTIVES OF PUBLIC EXPENDITURE

In the previous section, we have outlined and briefly explained the composition of public expenditures which include transfer payments, purchases of goods and services, general expenditures and interests on the public debt. The section shows that government spends money for financing various socio-economic programs in order to promote people's welfare, she also plays active role in the production of goods and services. In the modern world, public expenditure influences the national economy in various ways. It is therefore important to examine how public expenditure affects the economy in different ways:

6.4.1 Effects of Public Expenditure on Production

According to Dalton, the effect of government spending on production is based on following three factors; viz., capacity to work, save and invest, willingness to work, save and invest, and productive utilisation of resources. Let us discuss each of these briefly.

- **Capacity to Work, Save and Invest:** Socially desirable public expenditure increases community's productive capacity. For example, expenditure on education, health, communication increases individual's productivity at work and therefore improves their income level. With the rise in income, savings also increase and this in turn has a beneficial effect on investment and capital formation.
- **Willingness to Work, Save and Invest:** Government spending, sometimes, brings unfavourable effects on people's willingness to work and save. Government spending on social security facilities may bring about such unfavourable effects. For example, government spends a considerable portion of its income towards provision of social security benefits such as unemployment allowances, old age pension, insurance benefits, medical benefits, among others. Such benefits reduce the desire to work. In other words, they act as disincentive to work.
- **Productive Utilisation of Resources:** Government can spend money in the conversation of economic resources. Therefore, the diversion of resources from private to public sector for the construction of basic infrastructure and for preservation and conservation of scarce resources is very important for economic development. These kinds of expenditure can have a positive effect on production and economic activities of a country.

  Prudently planned public spending can bring about diversion of resources between regions. This may improve the economic position of marginalised and backward regions, and thereby increase production and employment.

6.4.2 Effects of Public Expenditure on Distribution

Public expenditure can influence distribution in the following ways:

- **Reduction in inequality in distribution of wealth:** Government expenditure can reduce inequality in terms of distribution of wealth across regions of a country. By increasing the production capacity and income of the people in the backward regions, their standard of living will increase to catch up with the living standard in other developed regions of the country.
- **A fair distribution of income among different classes of people:** Government tries to achieve this objective partly through taxation or levelling down the wealth of the rich and partly by means of public expenditure or levelling up the wealth of the poor. There are certain items of public expenditure that are beneficial to individuals and there are some that are beneficial to the whole society. For individuals, the expenditure on social services—in form of free medical aid and free education out of government funds—will benefit the poor more than the rich. Such services imply a net addition to the income of the poor classes. Expenditure that benefits the society as a whole can be those ones that relate to general improvement; for example, good roads, free water supply in urban areas, among others.
- **Empowering the poor to work:** Distribution of income can also be used as a tool to empower the poor to work by using the public expenditure. This can be done through direct help to the poor people, in form of cash, commodities and service. It could also be done indirectly by providing loans to the poor at a low rate of interest or more social services to them. Empowering them through this means makes them to be efficient and improves their income level and raise the standard of living.

6.4.3 Effects of Public Expenditure on Economic Stability

Economic instability takes the form of depression, recession and inflation. Public expenditure is used as a mechanism to control instability.

The modern economist Keynes advocated public expenditure as a better device to raise effective demand and to get out of depression.

Public expenditure is also used as a mechanism to control inflation by increasing production during inflation. Increase in production during inflation implies increased flow of goods and services in the economy. In the backdrop of rising prices, increased flow of goods and services will help strike a balance between demand and supply.

Public expenditure can also be used as a policy mechanism to reduce consumption. In a state of price-rise, government can reduce its consumption expenditure. This will reduce the pressure of demand on the goods and services. Prices are expected to fall or at least their pace of rise will be arrested.

6.4.4 Role of Public Expenditure in Developing Economy

The importance of public expenditure in developing economy is considered in terms of economic development, redistributions of income and balanced regional development.

- **Economic Development:** The main objective of the fiscal policy in developing countries is the attainment of a high rate of growth. The rate of growth of an economy can be maximised through rapid development of heavy and basic capital goods, public expenditure and creation of socio-economic overheads such as, transport, communication and banking. Since public expenditure concentrates on the development of investment goods sector and social overheads, it would lead to a more rapid rate of growth of output in the long run.
- **Removal of inequality:** For greater distributive justice in the growth process in the economy, the investment of the weaker region of the population will be necessary in the process of development, as well as in the process of sharing of its fruits. For this purpose, direct measures are suggested to tackle the problem of poverty. Programmes to resolve this would include the whole

population in the productive employment to increase their earning capacity so that both growth and distributive justice can be realised.

- **Balanced Regional Development:** Through public expenditure, government breaks the vicious circle in which the poorer areas in a large country are caught up with. In this way, public expenditure plays a dominant but basic role in lifting up the backward and underdeveloped areas from the situations of extreme poverty, low productivity and large-scale unemployment to the level of self-sustained growth. Hence, public expenditure plays crucial role in developing economy, especially the economies in developing countries.

6.4.5 Government Investment and Social Cost-Benefit Analysis

Let us briefly explain these two important interwoven terms:

- **Government Investment:** Government investment generally constitutes a relatively small percentage of overall public spending but is an important element for upgrading the productive environment and improving the welfare conditions at different regions and localities. Thus, much government investment takes the form of infrastructural outlays—for road and rail networks, ports, bridges, energy-generating plants, telecommunications structures, and water and sanitation networks, government buildings—which can have a productive life of several decades. But other types of outlays, some of a more current form, can also contribute to capital formation. In particular, public expenditure on education and health contributes not only to an individual's human capital but also to that of society, with benefits that can extend for a lifetime. Here the capital good is less tangible than a building or a piece of equipment. While government traditionally classifies spending on education and health as current expenditure, the policy implications of this treatment are often contentious, particularly when government seeks to justify borrowing only for public investment.

The challenge of classifying government investment is rendered more complex in the context of privatisation efforts, where the sale of a government asset is classified, in budgetary terms, as a 'negative investment', though the transaction represents a reclassification of ownership. Rather than being misled by a narrow budgetary classification, what is important to recognise are the ways in which government have a responsibility in the creation of capital goods and their need to intervene, particularly when market failure leads to underspending on goods essential for the realisation of government policy objectives for citizenry.

Overall, government investment has been considered necessary for the provision of certain vital goods and services that are either impossible for the private sector to efficiently supply (public goods) or are such that only one supplier could invest in them economically (natural monopolies).

- **Social Cost-Benefit Analysis (SCBA):** A social cost-benefit analysis is a decision-making strategy which helps in assessing the impact of complete investment projects on the society. Also, it is an organised and cohesive tool to contemplate the impact of development projects on society. The rationale behind analysing the social cost-benefit is to weigh the impacts of development project on societal elements such as pollution, real estate, legal prospects, health, and environment and so on. As a result of the analysis, the project decision maker can precisely explain the social welfare impact of such project.

  The principal objective of SCBA is to resolute monetary benefits of any project in view of shadow prices, how projects influence savings and investment of people in the society, the influence of the project on the money distribution in the society. It is also important to review how particular indicators such as employment, self-sufficiency would be fulfilled if the project is executed.

SCBA is applicable to both government and private investments, especially in developing countries. Analysis the social impact of the project becomes important when government of a country plays an integral part in structuring the economy of a country. For private investment, SCBA becomes important because private projects are approved based on government and quasi-government agencies.

The result of making SCBA is that it helps the business managers to take policy decisions on the basis of the calculated risks involved if the project is implemented. The scrutiny gives clear picture between cost and benefit distribution, allowing the managers to take an informed decision. At the end, we can conclude how the project will impact the employment opportunities and standard of living of the society. In addition, externalities (harmful or beneficial impact of the project) related to the project can be assessed after the social impact of such project has been analysed. The outcome of this analysis helps the government to take up projects that are purely beneficial to the entire society and not just a few individuals which further improves the economy of the country. Let us now turn to the last section in this unit.



LET US KNOW

- **Public expenditure** are expenditures incurred by the central, state and local governments to satisfy the collective social wants of the people
- **Public goods** are goods that people enjoy together without competing with each other over benefits. They are goods endorsed by the communities—for example, buses and trains, the arts, armies, the police, public schools, public parks, public highways, infrastructure and some environmental goods such as water and sunshine.
- **Public needs** are projects or activities that are designed to be beneficial to a particular community or groups of communities. Examples of public needs include internal security, medical service, educational programs, transportation, among others.

- ***Qua*si-public sector** is a term used for organisations that are very close to central government (perhaps by virtue of financial dependency or effectively being under government's control).
- **Government expenditures** can be divided into four major categories: (i) transfer payments; (ii) purchases of goods and services; (iii) general expenditures; and (iv) interests on the public debt.
- **Transfer payments** are payments made by the government for the purpose of redistributing income and wealth without procuring goods and services in return
- **Transfers to individuals** can be divided into two components: direct transfers to individuals and indirect transfers
- **Direct transfers** comprise all the payments that government makes directly to individuals without receiving any returns
- **Indirect transfers** comprise all the cash grants to non-business organisations, such as charitable and non-profit organisations, which use these funds to deliver cash and non-cash benefits to targeted groups of individuals and families.
- **Transfers to business** are government subsidies to firms in selected economic sectors
- **In-kind transfers** are benefits received in the form of free goods and services rather than cash.
- Examples of **general expenditures** include spending on the executive and legislative arms of government, spending on environmental protection, national defense expenditures, and expenditures on the protection of persons and property, which include spending on the police, the court system, and correctional facilities
- **Interest Payments on the Public Debt** are cash payments to individuals or institutions but they involve **a *quid pro quo*** because they are considerably paid to those who hold government bonds.



CHECK YOUR PROGRESS

Q 5: State whether the following statements are True (T) or False (F)

(i) Socially desirable public expenditure decreases community's productive capacity. (T / F)

(ii) Public expenditure always brings favourable effects on people's willingness to work and save. (T / F)

(iii) Public expenditure improves the economic position of the marginalised populations. (T / F)

Q 6: How can government spending influence distribution? (Answer in about 50 words)

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Q 7: How does public expenditure bring about economic stability? (Answer in about 50 words)

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Q 8: How does public expenditure improve the economy? (Answer in about 50 words)

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Q 9: Briefly explain these two terms: a) government investment b) social cost-benefit analysis? (Answer in about 50 words)

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6.6 LET US SUM UP

- Public expenditures are expenditures incurred by the central, state and local governments to satisfy the collective social wants of the people.
- The term *'quasi-public sector'* is used by social scientists as umbrella term for organisations that are very close to central government (perhaps by virtue of financial dependency or effectively being under government's control).
- Public expenditures can be grouped in different ways but it is classified into four in the unit: (i) transfer payments; (ii) purchases of goods and services; (iii) general expenditures; and (iv) interests on the public debt.
- Transfer payments are payments made by the government for the purpose of redistributing income and wealth without procuring goods and services in return. Transfers payment may be divided into transfers to persons and transfers to business.
- Purchases of goods and services are usually referred to as 'in-kind transfers'. This is because the beneficiaries are recognisable but the benefits they receive are in the form of free goods and services rather than cash.
- General expenditures are central administrative expenditures, spending on the executive and legislative arms of government, spending on environmental protection, national defense expenditures, and expenditures on the protection of persons and property, which include spending on the police, the court system, and correctional facilities.
- Interest Payments on the Public Debt are cash payments to individuals or institutions but they involve a *quid pro quo* because they are

considerably paid to those who hold government bonds. Since they are conditional payments, one may argue that they do not provide benefits to the recipients and, therefore, should not be included in expenditure incidence.

- The effect of government spending on production is based on following three factors;
  - Capacity to work, save and invest
  - Willingness to work, save and invest, and
  - Productive utilisation of resources
- Public expenditure can influence distribution in the following ways:
  - Reduction in inequality in distribution of wealth
  - A fair distribution of income among different classes of people
  - Empowering the poor to work
- Public Expenditure affects economic stability in the following ways:
  - used as a mechanism to control instability
  - used as a mechanism to control inflation by increasing production during inflation
  - used as a policy mechanism to reduce consumption
- Public expenditure plays these roles in developing economy:
  - lead to a more rapid rate of growth of output in the long run.
  - growth and distributive justice can be realised.
  - government breaks the vicious circle in which the poorer areas in a large country are caught up with
- Government investment has been considered necessary for the provision of certain vital goods and services that are either impossible for the private sector to efficiently supply (public goods) or are such that only one supplier could invest in them economically (natural monopolies).
- A social cost-benefit analysis is a decision-making strategy which helps in assessing the impact of complete investment projects on the society. The rationale behind analysing the social cost-benefit is to weigh the impacts of development project on societal elements such as pollution, real estate, legal prospects, health, environment and so on.

- The outcomes of SCBA:
  - helps the business managers to take policy decisions on the basis of the calculated risks involved if the project is implemented.
  - The scrutiny gives clear picture between cost and benefit distribution, allowing the managers to take an informed decision.
  - impact the employment opportunities and standard of living of the society.
  - externalities (harmful or beneficial impact of the project) related to the project can be assessed after the social impact of such project has been analysed.
  - helps the government to take up projects that are purely beneficial to the entire society and not just a few individuals which further improves the economy of the country.
- Project appraisal is therefore the analysis of a proposed project to determine its merit and acceptability in accordance with established criteria. This is the final step before a project is agreed for financing. It checks that the project is feasible against the situation on the ground and that the objectives set remain appropriate and the costs are reasonable.



6.7 FURTHER READING

1) Musgrave, R. A. & Musgrave, P. B. (2011). *Public Finance in Theory and Practice.* New Delhi: Tata McGraw Hill.
2) Choudhury, R. K. (2015). *Public Finance and Fiscal Policy.* New Delhi: Kalyani Publishers.
3) Tyagi, B. P. (2005). *Public Finance.* Meerut, UP: Jai Prakash Nath and Co.
4) Sundharam, K. P. M. & Andley, K. K. (1986). *Public Economics and Public Finance.* Delhi: Ratan Prakashan Mandir.
5) Browning, E. K. & Browning, J. M. (1994). *Public Finance and the Price System.* Macmillan Publishing Company.



6.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (i) False (ii) True

Ans to Q No 2: Public expenditures are expenditures incurred by the central, state and local governments to satisfy the collective social wants of the people. It refers to government's spending on various public goods (and services) so as to satisfy and serve public needs.

Ans to Q No 3: Public goods are goods that people enjoy together without competing with each other over benefits e.g. buses and trains, the arts, armies, the police, public schools, public parks. While public needs, can be described as projects or activities that are designed to be beneficial to a particular community or groups of communities e.g. internal security, medical service, educational programs and transportation.

Ans to Q No 4: The four terms are explained as followed:

Transfer payments are payments made by the government for the purpose of redistributing income and wealth without procuring goods and services in return. Transfers payment may be divided into transfers to persons and transfers to business.

Purchases of goods and services are usually referred to as 'in-kind transfers'. This is because the beneficiaries are recognisable but the benefits they receive are in the form of free goods and services rather than cash.

General expenditures includes all expenses for which specific beneficiaries cannot be identified. The primary components in this type of expenditure are central administrative expenditures, spending on the executive and legislative arms of government, spending on environmental protection, national defense expenditures, and expenditures on the protection of persons and property, which include spending on the police, the court system, and correctional facilities

Interest Payments on the Public Debt: These expenditures are cash payments to individuals or institutions but they involve a quid pro quo because they are considerably paid to those who hold government bonds.

Ans to Q No 5: (i) False (ii) False (iii) True

Ans to Q No 6: Government spending can influence distribution in the following ways:

- Government expenditure can reduce inequality in terms of distribution of wealth across regions of a country.
- A fair distribution of income among different classes of people.
- By empowering the poor to work through direct help to the poor people.

Ans to Q No 7: Public expenditure can bring about economic stability in the following ways:

- Public Expenditure may be used as a as a better device to raise effective demand and to get out of depression.
- Public Expenditure may be used as a mechanism to control inflation by increasing production during inflation
- Public expenditure can also be used as a policy mechanism to reduce consumption

Ans to Q No 8: Public expenditure can improve the economy in the following ways:

- Public expenditure can lead to a more rapid rate of growth of output in the long run.
- Public expenditure can increase earning capacity so that both growth and distributive justice can be realised.
- Public expenditure plays a dominant but basic role in lifting up the backward and underdeveloped areas from the situations of extreme poverty, low productivity and large-scale unemployment to the level of self-sustained growth

Ans to Q No 9: Government investment constitutes a relatively small percentage of overall public spending but is an important element

for upgrading the productive environment and improving the welfare conditions at different regions and localities.

Social cost-benefit analysis: A social cost-benefit analysis is a decision-making strategy which helps in assessing the impact of complete investment projects on the society. Also, it is an organised and cohesive tool to contemplate the impact of development projects on society.



6.9 MODEL QUESTIONS

(A) Short Questions (Answer each question in 150 words)

Q 1: Discuss the following terms with examples: a) public expenditure b) public goods c) public needs.

Q 2: Write short note on four categories of public expenditures.

Q 3: Briefly explain the effects of public expenditure on production.

(B) Essay-type Questions (Answer each question in 300-500 words)

Q 1: Critically discuss how government spending can influence distribution in your own local region with relevant examples.

Q 2: What are the major contributions of public expenditure towards economies of developing countries?

Q 3: Write essay on social cost-benefit analysis (SCBA) and its outcomes, using current scenarios in a particular developing country you are familiar with.

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UNIT 7: PUBLIC EXPENDITURE ANALYSIS

UNIT STRUCTURE

7.1 Learning Objectives:

7.2 Introduction

7.3 Public Expenditures on Non-marketed Goods

- 7.3.1 Allocative Effects
- 7.3.2 Distributive Effects
- 7.3.3 Production Inefficiency
- 7.3.4 The Role of Taxes
- 7.3.5 Overall Effects of Public Expenditure

7.4 Over consumption and Under-consumption of Marketed Goods under Fixed Quantity Subsidy

- 7.4.1 Definition of Fixed Quantity Subsidy
- 7.4.2 Over-consumption of Marketed Goods under Fixed Quantity Subsidy
- 7.4.3 Under Consumption of Marketed Goods under Fixed Quantity Subsidy

7.5 The Allocative and Distributive Effects of Excise Subsidy

- 7.5.1 Allocative Effects of Excise Subsides
- 7.5.2 Distributive Effects

7.6 Let Us Sum Up

7.7 Further Reading

7.8 Answers to Check Your Progress

7.9 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- know the significant economic effects of specific government expenditures programs in detail
- discuss expenditure on non-marketed goods
- describe fixed quantity subsidies and excise subsidies especially focussing on the allocative and distributive effects.

7.2 INTRODUCTION

From the previous unit it is clear that any government expenditure has numerous effects on production and consumption. It has serious welfare implications too. Under public expenditures analysis, in this context, an attempt is made to determine the consequences of government expenditure programs using economic theories. Such an analysis seems quite important in the sense that there is no general analysis that is applicable to all expenditure programs as these programs take many different forms with various combined objectives. Depending upon the quantum or volume of public expenditure and plans of making such expenditures the consequences of such programs vary to a great extent. While case by case analysis is very important, it is undoubtedly clear that some types of programs are clearly more important than the others. The main intent of this unit is to examine some of the more significant economic effects of specific government expenditures programs in detail. The economic effects of any government expenditure are categorised under two different types: allocative effects and distributive effects. Allocative effects basically refer to the way that an expenditure program affects the pattern of goods and services produced by an economy. For example, whether a particular subsidy lead to an increase in the output and consumption of subsidized goods is assessed under allocative effects. The distributive effects, on the other hand, refer to the impact of an expenditure programme on real income or well-being of people in an economy taking into consideration how many people are better off and how many of them are worse off. Though government expenditure programme tries to achieve 'Pareto improvement' sometimes it does not happen. Rather many government expenditure programs benefit some groups at the expense of the others and thereby redistribute income. Though, the redistributive effects of a public expenditure are desirable in the context of developing countries with incidence of poverty, such effects are not self-evident in nature. In many cases benefits of public expenditure programs is deduced by the non-targeted groups more than the targeted groups. Mention may be made here to public expenditure

programs like unemployment insurance, subsidies to higher education and agricultural subsidies whereby middle- and upper-income families deduce benefits more than the poor income groups, the targeted groups. This unit delves into analysing effects of three basic types of expenditure programs i.e. (a) expenditure on non-marketed goods, (b) fixed quantity subsidies and finally (c) excise subsidies especially focussing on the allocative and distributive effects.

7.3 PUBLIC EXPENDITURES ON NON-MARKETED GOODS

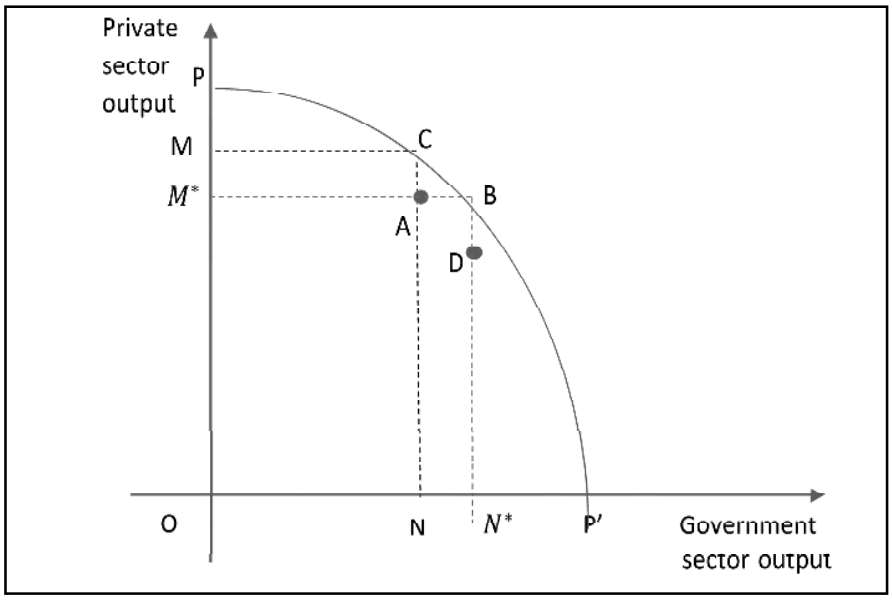
Government spends a sizeable amount of money on non-marketed goods like defence programmes, foreign aid, space exploration etc. These programmes have the characteristics of public goods, known as national public goods giving nationwide benefits as discussed in Unit -1. But economic analysis relating to effects of such programmes is very limited. In the following section a detailed analysis of public expenditures programmes on these no marketed goods is presented.

7.3.1 Allocative Effects

For non-marketed goods, the public expenditures can be made in two ways in order to increase output of such goods. In one way, the government pays the private firms to produce public or social goods. In this approach, the public expenditure represents a market demand for the good which provides the incentives to the private firms to produce the good. For example: the government purchases non- marketed goods like aircrafts, rifles etc. for defence activities from private firms which produce these goods. In the other way, the government hire the resources like capital, labour etc. to oversee the production directly. In case of postal services, the government employs resources directly to oversee production itself. Whichever approach is used, the main objective is to increase the production of non-marketed goods. Since economy's resources are given, any attempt

to increase production of such goods involves opportunity cost. As the resources required for production of such goods can be used for production of other private goods, hence, increase in production of one reduces the production of the other. This trade-off can be explained with the aid of the figure 7.1.

Figure 7.1: Allocative Effects of Government Expenditure on Non-marketed Goods



In figure 7.1, the government sector output and private sector outputs are measured along the horizontal and vertical axes respectively. PP' is the production possibility curve (PPC) representing all the possible combination of production of government sector and private sector goods with given resources. Let's assume that initially the economy is at point C, producing OM amount of private sector goods and ON amount of government sector goods. Suppose the government increases the production of government sector goods from ON to ON^* or by the amount N resulting in rightward movement on the PPC from point C to point B. This increase in government sector output from ON to O, leads to a reduction in the production of the private sector goods from OM to O or by the amount M. This loss in the production of private sector goods is equivalent to M which is the opportunity cost of producing more of the government sector

goods. It is thus clear that the non- marketed public goods that are provided by the government are not actually free of cost. There is opportunity cost of producing more of government sector goods in the form of reduction of the production of the private sector goods, which are not worthless. Despite this opportunity cost, government produces public goods as the benefit associated with the increase in government sector goods is greater than the sacrifice associated with the reduction in the private sector goods which ultimately enhances aggregate welfare in the society.

7.3.2 Distributive Effects

The distributive effect of public expenditure on non-marketed public sector goods is not easy to evaluate. When government stimulates the production of non-marketed goods, it is very difficult to ascertain the actual benefits accrued to different groups of people in an economy as there is no market prices for such goods.

7.3.3 Production Inefficiency

The opportunity cost associated with the production of non-marketed public goods, as shown in figure 7.1, is assumed to be the least (minimum) based on the assumption that government produces the non-marketed goods most efficiently. But, if the government produces goods less efficiently, there will be larger opportunity costs i.e., more sacrifices. There are various ways to combine the resources to produce incremental amount of NN^* of the non-marketed goods and some of these will result larger sacrifices. For example, if the government increases the production of non-marketed goods to O inefficiently, the economy will be at point D and it involves larger sacrifices of amount DB (refer to the figure 7.1). Moreover, point D lies inside the PPC which implies that resources are underemployed and signifies misallocation of resources. Misallocation implies that resources which could be used more efficiently for the production of

the private goods than the production of the non-marketed goods. As the production of goods by the government involves inefficiencies, it is better that the government should purchase the goods from the private firms. Private firms are generally considered to be more efficient in the sense that they work mainly to maximize profit by minimizing cost of production. This provides for the case of public provision of private goods.

7.3.4 The Role of Taxes

Public expenditure analysis addresses one of the intricate questions how the public expenditure programmes are financed. In general, the public expenditure programmes are financed by taxes, borrowing or printing of money. Among these, taxes are mostly used for financing public expenditure projects. The role of taxation in financing government programmes has two aspects. In the first instance, the tax or other forms of finance determines the composition of the sacrificed private good. The private good can be of different types like it can be a necessity (food, house or cloths), a luxury (cars, air conditioner, aeroplanes etc.). In figure-7.1, MM^* measures the aggregate reduction in private sector output(considered as an index of all private sector output). But whether this reduction is mainly composed of fewer cars, less food, smaller homes or less of some other goods etc. rely mostly on the means of funding. For instance, a tax on cars will definitely reduce output of cars than a tax on food would. However, the overall reduction in output, MM^*will remain the same. In the second case, the tax also determines who will bear the burden of the reduction in the private sector goods. If the tax rate system is progressive then the higher income group will bear the more opportunity cost than the lower income group. Thus, the different types of taxes will distribute the burden of reduction in private goods (measured by the opportunity cost) differently among different groups of people. It thus clear that the methods of financing government expenditure projects have both allocative (which types of goods are

sacrificed) as well as distributive effects (how does the sacrifices are distributed among different income earners). Therefore it is imperative that in framing the policies, both tax and expenditure policies are analysed together.

7.3.5 Overall Effects of Public Expenditure

Let's evaluate the overall effects of public expenditure on non-marketed goods in an economy. So far we have assumed that initially the economy is operating on the PPC. But if involuntary unemployment exists in the economy, then the economy will be operating inside the PPC. This is shown at A in the figure 7.1. Let's assume that the economy is initially at point A and there is involuntary unemployment. Suppose there is public expenditure programme initiated by the government employing involuntary unemployed labours. This programme increases production of non- marketed public goods without reducing the amount of private goods. This is shown in the figure 7.1 as a movement from point A to point B. This seems that this increase in the non- marketed goods has no opportunity cost. But it is not correct. This involuntary unemployed resource could be used by the private sector instead of public sector and increase the production of private goods. This could be shown in the figure 7.1 as a movement from point A to point C. Here, the employment in the private sector can also be increased by a tax reduction, an increase in the money supply or an increase in the government transfer payments. Thus, there is opportunity cost of not using unemployed resources in the private sector. Therefore, the opportunity cost of increasing production of non- marketed goods from ON to ON^* is MM^* even there is involuntary unemployment.

Let's discuss about the overall impact of the public expenditure on the price level in an economy. Since there are various ways of financing the public expenditure programmes the impact economy are different. If the mode of finance these programmes are taxation

then there will be no direct impact like inflation in an economy. But if the financing these programmes is via printing money then there will be inflation in the economy. Because printing of money increases money supply in an economy which results in increase in purchasing power and ultimately increases the general price level of the economy. Inflation can be treated as a type of tax which reduces the value of money. Inflation is harmful for an economy. Thus, the public expenditure should be financed by non- inflationary methods of finance. Again, the overall effects of public expenditure on employment, output or price levels in an economy is not irrelevant regarding the financing of a particular public expenditure programme on non-marketed goods.



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- **Non-Marketed Goods:** the goods which are not provided by the private markets or if provided, would be in negligible amounts, are known as non-marketed goods.
- **For example:** defence, foreign aid, space exploration etc.
- **Opportunity cost:** Cost associated with opportunities that are forgone when a firm's resources are not put to their best alternative use.
- **Inflation:** A sustained rise in the general price level.



CHECK YOUR PROGRESS

Q 1: What is meant by public expenditure?

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Q 2: What is meant by non-marketed good?

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Q 3: What are different modes of financing public expenditure programmes?

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Q 4: Public expenditure programme should be financed by non-inflationary methods of finance. (State whether True or False).

Q 5: Give examples of non-marketed goods.

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Q 6: Inflation ……value of money. (Fill in the blanks)

Q 7: What is the opportunity cost associated with increase in the output non-marketed goods by public expenditure programmes?

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7.4 OVER CONSUMPTION AND UNDER-CONSUMPTION OF MARKETED GOODS UNDER FIXED QUANTITY SUBSIDY

In this section, we will discuss about the fixed quantity subsidy and how the fixed quantity subsidy results in overconsumption and under-consumption of the subsidised good.

7.4.1 Definition of Fixed Quantity Subsidy

Subsidy is a payment made by the government or possibly by private individuals which is a difference between the price consumers pay and the costs incurred by producers, such that price is less than the marginal cost. Subsidy has the following main objectives: (1) a transfer from taxpayers to producers or consumers of a particular good, for example, in order to raise farmers' incomes, (2) to influence

behaviour of suppliers or demanders via the mechanism of elasticity of supply or demand, (3) to keep prices of certain goods low or stable, for example, as part of an anti- inflation policy.(Macmillan Dictionarry of Modern Economics 2005).

The fixed quantity subsidy is a type of in -kind subsidy where the government provides a certain quantity of a particular good available to a consumer either at no cost or at a cost below the market price. This subsidy is known as fixed quantity subsidy because the government fixes the quantity of the subsidized good. The consumers do not have any control over the quantity of the subsidized good. The government only decides how much quantity is made available for consumption at free of cost or at a subsidized price. For example:, suppose a government provides food stamps that a consumer can use to buy Rs. 2000 worth of food only. If the consumer wants to consume more amount of food, then the consumer must pay the market price for that additional amount requirement. Public schools are another example of fixed quantity subsidy. In public schools, a certain degree of teaching quality is available, but if a parent is not satisfied with that quality and want to provide more quality teaching learning experience to their children then they have to send their children to private schools or provide them tuition by spending their own money. The government transportation is also an example of fixed quantity subsidy. In public transport, some facilities are provided at a lower fair. But if the passenger wants more comfortable journey, then he/she must bear the cost of hiring private car, taxi or own a car. There are many more examples of fixed quantity subsidy in reality like government hospital, government housing colonies etc. Thus, in case of a fixed quantity subsidy, only a certain amount of good is subsidized, but if the consumer wants a larger quantity, then the consumer has to purchase the additional amount of the good at the market price.

LET US KNOW



- Subsidy is a transfer of money from the government to an entity. It is a financial aid or support provided by a government to individual, businesses or institutions.
- *In kind subsidy* means a type of subsidy where a consumer receives as subsidy, an amount of the good that can be purchased by that subsidy. In case of in- kind subsidy,
- A subsidy is linked to the consumption of a particular good. For example: Food stamp Programme in USA after 1979. Under this programme, low income families receive food stamps which they can use to buy food only.
- In case of *fixed quantity subsidy*, the quantity of a good being subsidised is beyond the control of the recipient i.e., consumer of the subsidy.

The allocative and distributive effects of a fixed quantity subsidy may have the results like, (a) over-consumption, (b) under-consumption, and (c) redistribution of incomes.

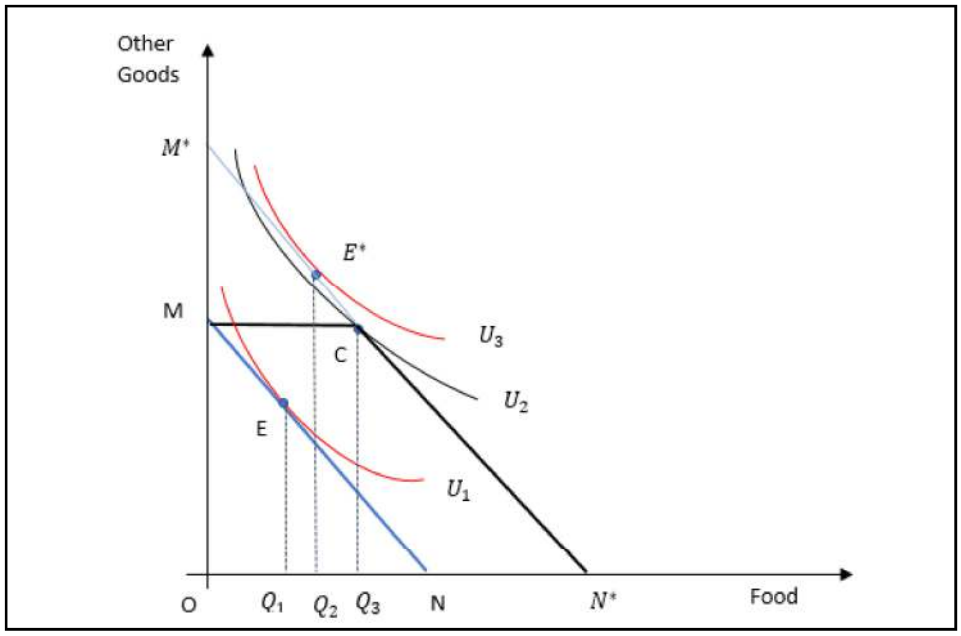
Here, we will confine our discussion only to overconsumption and under-consumption of a fixed quantity subsidy.

7.4.2 Over-consumption of Marketed Goods under Fixed Quantity Subsidy

A fixed quantity subsidy is provided by a government, increases the consumption of the subsidized good. This happens when the quantity provided by the government is greater than the consumer would purchase the good if the consumer had the cash transfer rather than the in-kind subsidy. It is worth noting that when a consumer receives a subsidy but pays no taxes, then the fixed quantity subsidy provides the same effect as the consumer could have with cash transfer of equal cost. How a fixed quantity subsidy leads to overconsumption of the subsidized good is explained with the help of Figure 7.2.

In Figure 7.2, food is the subsidised good and quantity of food is measured along the horizontal axis while on the vertical axis the quantities of the other goods is measured. MN is the pre- subsidy budget line and E is the pre-subsidy equilibrium point. At E, a consumer is consuming Q_1 amount of food and Eamount of other goods. Let the government provides amount of food at no cost. This shifts MN to new budget line MCN*, indicated by black bold line in the figure. Thus, consumer is consuming at C on a higher indifference curve.

Figure 7.2: Over-consumption of marketed goods under fixed quantity subsidy



Here, the cost of the subsidy is MC. If the consumer is given cash transfer equal to this cost of the subsidy MC, the budget line of the consumer would be M*N* and he/she would consume less amount of food i.e., Q_2 at the equilibrium point E* on M*N*. Point E* is located on a higher indifference curve U_3. Therefore, the consumer is better off with a cash transfer equal to cost of the subsidy rather than the subsidy. When the consumer is provided with the subsidy, consumption of food increases by Q_2Q_3 (this is an increase in consumption in relation to consumption with cash transfer). Thus, the fixed quantity subsidy leads to over consumption of food.

7.4.3 Under Consumption of Marketed Goods under Fixed Quantity Subsidy

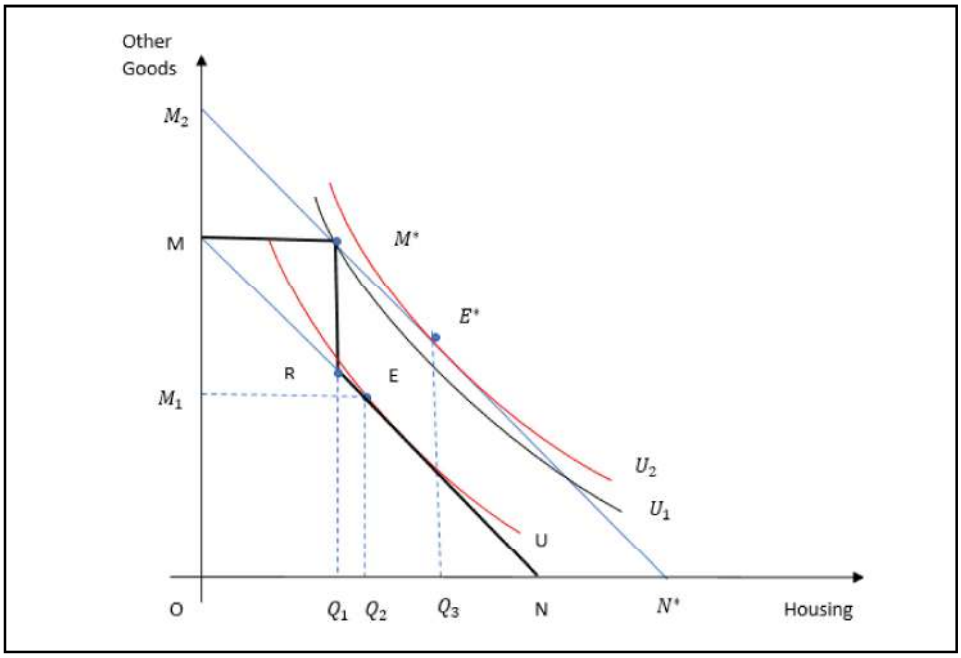
Generally, it is thought that fixed quantity subsidy increases the consumption of the subsidised good. But there are situations where this type of subsidy reduces consumption of the subsidised good. The under-consumption of the subsidised good occurs when the additional consumption of the good is very expensive or impossible to consume. For some types of goods and some types of subsidies, it is very costly to consume more than the quantity provided by the government. Some examples of fixed quantity subsidy which leads to under-consumption of good are housing subsidy, subsidies for public schools and institutes of higher education, subsidies on medical subsidies etc. Let's elaborate how under-consumption takes place in case of public housing. Suppose the government provides a two bed room apartment at no cost to a family. Thus, the subsidised good is public housing. But the family prefers a three bed rooms apartment and even to pay the difference in cost between a two bed rooms and a three bed rooms apartment. But this option is not available in this subsidy programme. The family cannot accept the government subsidy of two bed rooms apartment and also the family cannot pay the extra cost for a bed room to convert two bed rooms apartment into a three bed room apartment. The options available for the family: either the family accept the two bedrooms apartment or forgo the subsidy and buy a three bed room apartment at market price with own money. In this situation, it is quite possible that the family will choose the two bed room apartment when the government pays the bill rather than the three bed rooms apartment they would have chosen in the absence of the subsidy. Thus, under-consumption results when the subsidised good is 'lumpy' and the good is not easily divisible.

Aiding figure 7.3, we can explain the under-consumption of marketed good under fixed quantity subsidy. Units of housing (the subsidised good) and the quantities of other goods are measured

along the horizontal and vertical axes respectively. MN is the pre-subsidy budget line. Without any subsidy, a family consumes at point E on MN. This gives Q_2 units of housing with OM_1 amount of other goods. Now, government offer the family a smaller housing unit Q_1 at no cost. The new budget line is MM*RN. If the family wants to consume housing unit larger than unit, the family must scarify the subsidised housing unit and bear the entire cost of the housing units along RN portion of the initial budget line MN.

With the budget line MM*RN, the family would opt to accept the subsidised housing and consume at M*, even though this involves less housing than the family consumed without the subsidy. The family is better off at M* than at E because though the family losesunits of housing, it also gains MM* amounts of other goods than at E. This can also be understood by looking at the indifference curves where the points M* and E are located. As M* is on a higher indifference curve U_1 than point E on indifference curve U.

Figure 7.3: Under-consumption of marketed goods under fixed quantity subsidy.



If the family is provided with a cash transfer equal to the subsidy, then the family would be better off at point E* on the budget line M_2N*

as E^* is lying on the indifference curve U_2. At point E^*, the family would consume Q_3 units of housing. This extra Q_1Q_3 units of housing are worth more than their cost. Under-consumption of units results from fixed quantity subsidy on housing.

The fixed quantity subsidy on lumpy goods, whose extra unit consumption is impossible, or if possible, is very expensive, leads to overconsumption for some consumers, under consumption for some other consumers and appropriate level of consumption for some other consumption. This depends on the many factors like size of the subsidy in relation to the preferences and incomes of the recipients of the subsidy. Overconsumption occurs when quantity of the subsidised good is lump sum, when consumer's income is less or when the unsubsidised quantity chosen by the consumer is less. On the contrary, under-consumption results when quantity of the subsidised good is small, when consumer's income is high or when the unsubsidised quantity chosen by the consumer is large. Various empirical evidences support the under-consumption of marketed good under fixed quantity subsidy. Two empirical studies have found that some subsidies of this type restrict the consumption of subsidised good, at least for some recipients. One study is done by John Kraft and Edgar Olsen and another is carried out by Sam Peltzman. John Kraft and Edgar Olsen studied a sample of public housing tenants and found that 49 percent of the families were consuming less housing than if they had been given the subsidy as cash. Peltzman studied the effects of state-supported colleges and universities on the consumption of higher education and he found that the expenditures per students would be higher in the absence of subsidies to higher education and more students consume attended colleges as a result of subsidy. He also found that some students consume less schooling and others (those who would not have attended college without the subsidy) consume more as a result of state support of institutions of higher education.



CHECK YOUR PROGRESS

Q.8: What is fixed quantity subsidy?

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Q.9: Do the consumers have any control over the quantity of fixed quantity subsidy?

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Q.10: When does the fixed quantity subsidy produce under-consumption of the good?

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Q.11: Give examples of fixed quantity subsidy.

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7.5 THE ALLOCATIVE AND DISTRIBUTIVE EFFECTS OF EXCISE SUBSIDY

We have already got some ideas on excise subsidy in our earlier studies. We have discussed that excise subsidy is a type of subsidy where government pays a part of the per unit of a good and the amount of the good is allowed to be determined by the consumers itself. Example of excise subsidy is housing policy where government is decided to pay an amount for each unit of housing consumed and the amount of house to be constructed is determined by the consumers. There are two types excise subsidy: i) ad-valorem excise subsidy and ii) per unit excise subsidy. While

ad-valorem excise subsidy is the subsidy where the government pays a certain percentage of the per unit cost of some goods or what amounts to the same thing, a specific percentage of the consumer's total expenditures on the good is known as ad valorem excise subsidy. The per unit excise subsidy is a type of subsidy where the government pays a certain amount for each unit of the good consumed.



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- It should be noted down that in case of lumpy and expensive good, the fixed quantity subsidy leads to under-consumption of the good. In case of goods like food, the fixed quantity subsidy leads to overconsumption of the subsidised food, because the expenditure on additional quantity over subsidised quantity is not expensive. But in case of not divisible lumpy goods like housing, the price of an additional unit of housing is too costly to purchase.
- With the housing subsidy, the nature of the good provided by the government makes supplementing it costly, if not impossible. Housing is a typical of a good that is not highly divisible into small units; it is "lumpy" and to increase the quantity consumed usually requires moving into a larger or better housing unit. (Browning and Browning n.d.)
- Excise subsidy is a type of subsidy where government pays a part of the per unit of a good and the amount of the good is allowed to be determined by the consumers itself.
- There are two types of excise subsidies: ad valorem excise subsidies and per unit excise subsidies.
- The ad valorem excise subsidy is given on the total value of the good consumed, where the per unit excise subsidy is provided for each unit of the good consumed.

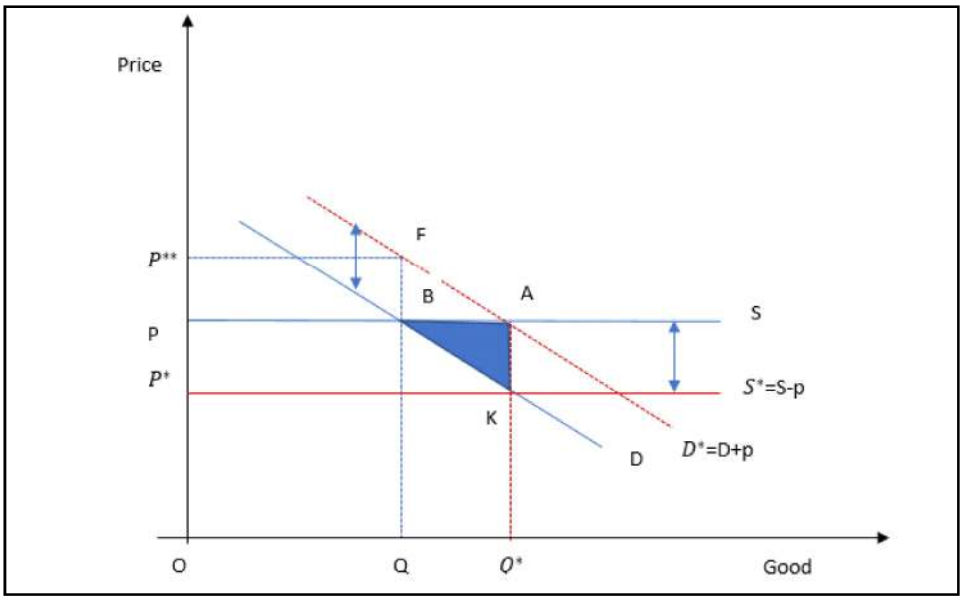
- Excise subsidy is just opposite to the excise tax.
- Excise tax: In real world, excise subsidies are less common than the fixed quantity subsidy.

7.5.1 Allocative Effects of Excise Subsides

In this section discussion on allocative effects of excise subsidies have been made. Allocative effects of excise subsidies can be analysed from two perspectives: market perspective and the individual perspectives. Again, market perspective has two cases: (a) when subsidy is given to the firm and (b) when subsidy is given to the consumer. To make the analysis complete, both the perspectives have been taken into consideration.

When the subsidy is provided to firms: Let's assume that the government provided subsidy of ¹ p per unit of food. Let the subsidised food industry operates under constant cost and initial price and output of the food industry be P and Q in the figure7.4. Here, since subsidy is provided to the firms producing food this subsidy reduces per unit cost of production by ¹ p which shifts the initial supply curve S to S^* where S^*= S-p. The lower net production cost of the food results in expansion of the food industry. Thus, there is increase in the output and reduction in the price of the food. This is shown in the figure 7.4 as new equilibrium is established at the point of intersection of original demand curve D and new supply curve S^* i.e., at point K. The public expenditure per unit of food is ¹ p (i.e., PP^*) and the total public expenditure on the subsidy is given by the area of the rectangle $PAKP^*$ (which is the per unit subsidy, PP^* times the quantity produced, OQ^*). The subsidy also reduces price of food by the amount of per unit subsidy i.e., ¹ p. but it should be noted that in case of increasing cost industry, the price of food to the consumer will not fall by exactly to the amount of the subsidy. Thus, the price is reduced to P^* and at a lower price level the consumption increases to Q^*. Therefore, with an excise subsidy consumption and output unequivocally increase.

Figure 7.4: Allocative Effects of an excise subsidy



When the subsidy is provided to the consumers: Let an excise subsidy of p is provided to the consumers for per unit of food they purchased. This will increase the price per unit of food they are willing to pay to firms. At OQ amount of food, consumers are willing to pay a maximum of BQ or OP price (refer to the figure 7.4) by themselves. But government provides them p as per unit subsidy, therefore they can pay OP^{**}at OQ level of output. Thus, their demand price including subsidy will be OP^{**} at OQ level of output. This subsidy shifts the original demand curve D to D^* (D^*=D+p). the new equilibrium is obtained at the point of intersection between D^* and original supply curve S. This is the point A in the figure 7.4 with equilibrium price Op and quantity OQ^*. At OQ^* level of output, producers receive OP price of which consumers pay only OP^* and price P^*P (=AK) is paid by the government as subsidy. It should be noted that the excise subsidy has same effect whether it is paid to the firms or consumers directly. In both the cases the equilibrium quantity and price are OQ^* and OP respectively. One can analyse the effect of subsidy either by upward shifting of the demand curve and downward shifting of the supply curve.

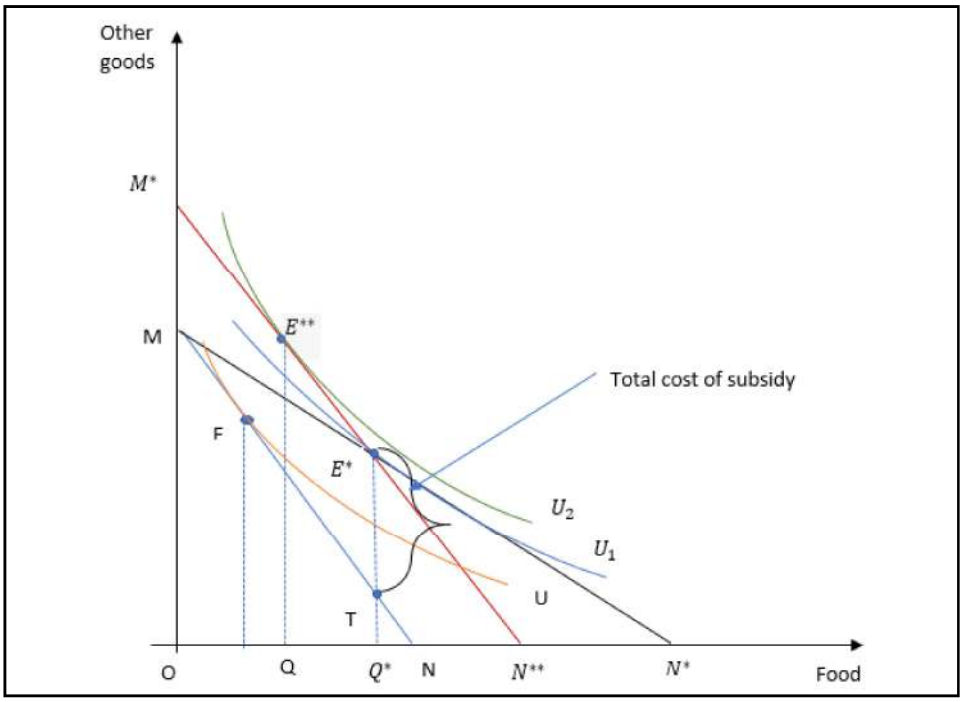
Overall analysis: The expansion of output from OQ to OQ^* represents the overconsumption of food by consumers. The benefits accruing to the consumers for this additional amount of food is less than the cost of producing this additional amount of food. The only reason behind this overconsumption is that the cost is borne by someone else. The distance between the original demand curve and the X- axis represents the marginal value of associated with consuming every additional unit of food. Thus, the benefits received by the consumers from increasing the production of food from OQ to OQ^* is shown in the figure 7.4 as $QBKQ^*$. The original supply curve represented the marginal social cost of producing each additional unit of food. Therefore, the total cost associated with expanding the output of food from Q to Q^* is $QBAQ^*$ (which is obtained by multiplying QB or OP with QQ^*). Thus, the welfare cost of subsidy is BKA which is obtained by the subtraction of QBKQ' from QBAQ'. This is shown by the blue triangle in the figure 7.4.The subsidy results in an output level where the marginal benefit Q^*K to the consumers is less than the marginal social cost of production Q^*A (=QB). This is because subsidy artificially stimulate the output of subsidised good by drawing resources from other uses that would be more beneficial for the consumers.

Allocative Effects: Individual perspectives: Let's discuss about the allocative effects of excise subsidy from the view point of individual perspective. In figure 7.5, MN is the pre-subsidy budget line. The consumer is in equilibrium at point E. But when a subsidy is provided on a good say, food, the price of the food decrease and the budget line MN rotates anticlockwise to MN^*. MN^* is flatter than MN.

Now, point E^* is the new equilibrium point for the individual with lower price of food and larger consumption of food Q^*. This E^* is the post subsidy equilibrium point. The consumer could buy only TQ^* amount of other goods if he/she increases the consumption of food to OQ^* without subsidy. But with the subsidy, the consumer can buy

Q^*E^* amount of other goods with OQ^* amount of food. Thus, the E^*T amount of cost is borne by the government. The consumption at E^* represents over consumption of food. The subsidy on food encourages the consumer to consume more amount of food and less of other goods. Thus, E^* represents inefficiency. If the subsidy is given as cash equal to cost E^*T (=MM^*) rather than lowering the price of food, then the budget line shifts to M^*N^{**} (MN || M^*N^{**}) and M^*N^{**} passes through the point E^*. This signifies that the consumer still chooses the consumption bundle at point E^* with the subsidy in the form of cash. Given the preferences shown in the figure7.5, the consumer would prefer the consumption bundle at point E^{**} i.e., purchasing less food and more of other goods. Therefore, the consumer is better off with the subsidy in the form of unrestricted cash transfer. The subsidy of cash equal to the cost has a welfare cost. The welfare cost can be interpreted as the consumer is on U_1 with the excise subsidy but could reach U_2 by consuming different bundle of goods with a cash transfer equal to the total cost.

Figure 7.5: Allocative Effects of an excise subsidy from an individual perspective



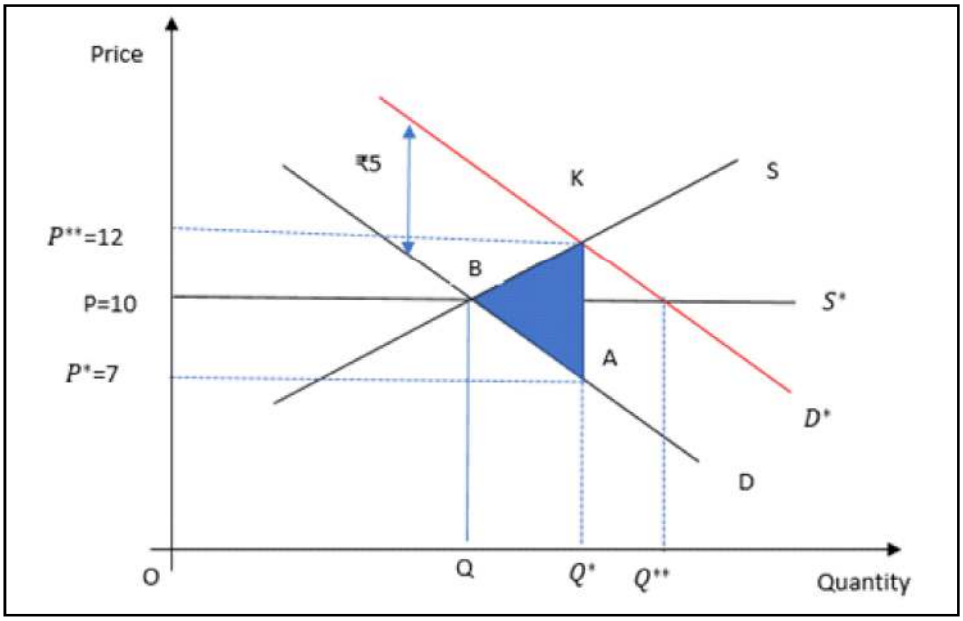
It has been assumed that the people other than the particular consumer that receive the subsidy pay the taxes to finance the subsidy. Let us discuss about the situation when consumers must pay the taxes to finance the subsidy by reinterpreting the figure 7.5. M'N" is the pre-tax and-subsidy budget line and MN' is the budget line representing the combined effects of tax and subsidy. The net result is to increase food consumption from Q to Q' and to make the consumer -taxpayer worse off. The outcomes are overconsumption of food and welfare loss. Thus, in both the cases, the excise subsidy produces welfare costs by artificially stimulating food consumption. When the consumer does not pay taxes that means tax payers are other than the recipient of subsidy, the consumer is better off consuming less food with a cash transfer. This is reflected in the figure 7.5that the consumer will be on a higher indifference curve with a cash transfer. But when the recipient is also a tax payer then the consumer is better off consuming less food without any tax or subsidy. The welfare cost is resulted from overconsumption of food due to artificially lowering of price of food.

7.5.2 Distributive Effects

In this section we will discuss about the distributional or incidental impact of an excise subsidy in an economy. Here, the distribution or incidence of an excise subsidy examines who will i.e., whether the sellers or the buyers benefit or lose from an excise subsidy. Thus, the distributional impact of an excise subsidy studies the interrelationship between the market structure and the incidence of the subsidy.

Let's illustrate the effect of an excise subsidy on a good with the aid of the Figure 7.6. It is assumed that the subsidised good is produced under increasing cost condition. The upward sloping supply curve indicates that the marginal cost of producing the good increases as the total industry output expands. D and S are initial demand and supply curve respectively.

Figure 7.6: Incidence of an excise subsidy for an increasing cost industry



Point B is the initial market equilibrium point with equilibrium price P= 10 and equilibrium quantity OQ. When an excise subsidy of say, 5 is provided to the consumers then D is shifted upward to D^* where $D^*=D+5$. Now D^* cuts S at point K. K is the post-subsidy equilibrium point with the equilibrium quantity OQ^* and equilibrium price $P^{**}= 12$. This is the price paid to the sellers, but the consumers paid only $P^*= 7$ which is the 3 below the pre-subsidy price 10. The sellers of the good also received 12 which is 2 more than the pre-subsidy price. Therefore, in this case both the sellers and buyers get benefits of 3 and 2 of the excise subsidy of 5. Thus, here the incidence of the subsidy is felt by both buyers and sellers.

There is welfare cost for an excise subsidy. In the figure7.6, the welfare cost is shown by the area ABK, the blue shaded triangle. This welfare cost is due to the over consumption of QQ^* amount of the good as the excise subsidy lowers the price of the good. This welfare cost is the difference between total social cost (shown by the area Q^*QBK in the figure7.6) and total benefit, given by the

area Q^*QBA in the figure7.6. However, there is no welfare cost due to overconsumption of a subsidised good when the supply curve is vertical.

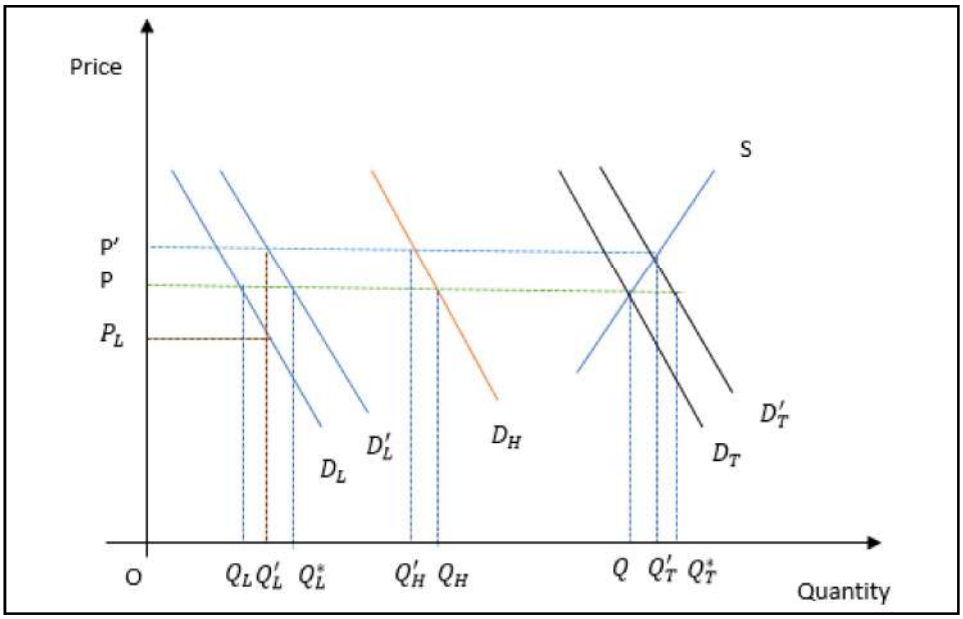
The incidence of an excise subsidy depends on the relative elasticities of demand curve and supply curve. Let's have a look at the extent of incidence of an excise subsidy on buyers and sellers considering various demand and supply elasticities.

- When the supply curve is perfectly elastic, as S^* in figure 7.6, the entire benefits of an excise subsidy is received by consumers.
- When the supply curve is perfectly inelastic i.e., vertical, then the entire benefits of an excise subsidy is received by sellers. No benefit accrues to consumers. In such cases, the price of the good increased by the same amount of subsidy.
- In case of constant cost industry, the incidence of an excise is entirely on consumers and sellers do not get any long- term benefits.

Therefore, we can conclude that for more elastic demand curve, the incidence of subsidy is more on consumers and less on sellers and vice versa. More inelastic the supply curve, incidence of subsidy is more on sellers and less on consumers and vice versa.

In the previous sections, all the consumers are taken into account to evaluate the effects of an excise subsidy. But in this section we will analyse the effect of an excise subsidy when subsidy is provided to only some of the consumers of a particular good. Thus, here our analysis will be confined only to a part/group of consumers, not all the consumers. In case of food stamps, Medicaid, Medicare, housing subsidies etc. subsidies are given to only to particular section of society.

Figure 7.7: Excise subsidy for low income households



Let us assume that food subsidy is provided to only low-income consumers. In figure 7.7, quantity of subsidised good i.e., food is measured along the horizontal axis and price is measured along the vertical axis.D_L and D_H are demand curves of low-income and high-income consumers respectively. D_T is the total market demand and =+. S is the market supply curve. The point of intersection between market demand and supply curve gives the equilibrium price and quantity as P and respectively. At P, the low- income and high-income consumers consume and respectively, where, =. When an excise subsidy is given only to low-income consumers, the shifted upward to . Now, at price P with the subsidy, the low-income consumers consume , which is larger than the pre-subsidy consumption . The subsidy does not have any effect on the demand of the unsubsidised consumers. The total demand is increased and it is shown by the shift of to by an amount (=). This new total demand is the horizontal summation of and . The intersection of and S, determines the equilibrium market price, P' and equilibrium quantity .

As the demand of unsubsidised consumers remain unchanged, they may pay higher price. They also curtail consumption to . Thus, higher income consumers are harmed by the subsidy. Moreover, they may bear an additional cost if they pay some or all of the taxes required to finance the subsidy.

The benefits of the subsidy are achieved by the subsidised consumers i.e., the lower income consumers here. With the subsidy they pay a net price of and consume amount of the good. The sellers of the subsidised good get benefits as they receive a higher price P'.

In the case of horizontal supply curve, the price of the subsidised good will not increase and entire benefits of the subsidy will accrue to the low- income consumers.

This analysis suggests how the incidence of a subsidy may be spread widely and unevenly throughout society.



CHECK YOUR PROGRESS

Q 12: What is meant by excise subsidy?

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Q 13: State the different types of excise subsidy.

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Q 14: Give examples of per unit excise subsidy.

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Q 15: How does the unsubsidised consumers harm by an excise subsidy?

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7.6 LET US SUM UP

- Government spends a sizeable amount of money on the non-marketed goods like defence programmes, foreign aid, space exploration etc. Public expenditure on non-marketed goods have both allocative and distributive effects.
- Public expenditures can be made in two ways to increase the output of such goods. In one way, the government pays the private firms to produce the goods. In this approach, the public expenditure represents a market demand for the good which provides the incentives to the private firms to produce the good. For examples: the government purchases non- marketed goods like aircrafts, rifles etc. for defence activities from private firms which produce these goods. In the other way, the government hire the resources like capital, labour etc. to oversee the production directly. For example: in case of postal services, the government employs resources directly to oversee production itself. Public expenditures on non-marketed goods have opportunity cost in the form of reduction of production of private goods.
- The distributive effect of public expenditure on non-marketed good is not easy to evaluate accurately because there are no market prices to register values that the people place on non-marketed goods.
- Public expenditure on non-marketed goods results in production inefficiency when the resources are not combined efficiently to produce nonmarketed goods.
- The role of taxes on public expenditures is twofold: first, the tax or other means of finance determines the composition of opportunity cost. Second, the tax would also determine exactly who will bear the opportunity cost.
- There are various ways (ex: taxation, borrowing, printing money etc.) of financing the public expenditure programmes. The impact of different modes of financing public expenditure programmes on an economy are different. The overall effects of public expenditure on employment,

output or price levels in an economy is not irrelevant regarding the financing of a particular public expenditure programme on non-marketed goods.

- The potential impact of government expenditures on the overall level of employment, output, or prices is irrelevant in an analysis of specific expenditure programs.
- Fixed quantity subsidy is a type of in -kind subsidy where the government provides a certain quantity of a particular good available to a consumer at no cost or at a cost below the market price.
- Excise subsidy is a type of subsidy where government pays a part of the per unit of a good and the amount of the good is allowed to be determined by the consumers itself. There are two types excise subsidy: ad valorem excise subsidy and per unit excise subsidy. In case of ad valorem subsidy, government pays a certain percentage of the per unit cost of some goods or a specific percentage of the consumer's total expenditures on the good. While per unit excise subsidy is a type of subsidy where the government pays a certain amount for each unit of the good consumed.
- Evaluation of the allocative effects of an excise subsidy can be done separately from different perspectives such as market perspective and individual perspective.
- Distributive effect of an excise subsidy depends on many factors like the relative elasticities of market demand and supply curves, market conditions like increasing cost /decreasing cost/ constant cost industry etc. thus, the incidence of an excise subsidy depends on relationship between the market structure and the incidence of the subsidy.
- When an excise subsidy is granted to a subset of all consumers, then the benefits accrue to the subsidised consumers, sometimes some benefits to the sellers also, but the unsubsidised consumers bear the cost of the subsidy in the form of higher price and lower consumption level and as a source of financing subsidy by the government as tax payers.



7.7 FURTHER READING

1) Edgar K. Browning and Jacquelene M. Browning (1994), *Public Finance and the Price System,* Macmillan Publishing Company, 4ed.



7.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The expenditure made by government as distinct from those of private individuals, organisations or firms is known as public expenditure.

Ans to Q No 2: The goods which are not provided by the private markets/ market mechanism or if provided, would be in negligible amounts, are known as non-marketed goods. Examples are defence, foreign aid, space exploration etc.

Ans to Q No 3: Different modes of financing public expenditures are tax, borrowing and printing of money.

Ans to Q No 4: True.

Ans to Q No 5: defence, foreign aid, space exploration etc.

Ans to Q No 6: Reduces

Ans to Q No 7: The opportunity cost of increasing output of non-marketed good is reduction of the production of private goods.

Ans to Q No 8: Fixed quantity subsidy is a type of in -kind subsidy where the government provides a certain quantity of a particular good available to a consumer at no cost or at a cost below the market price.

Ans to Q No 9: No.

Ans to Q No 10: When the good is lumpy (i.e., not easily divisible) and supplement to the subsidised quantity is very expensive, if not impossible.

Ans to Q No 11: Subsidies on housing, public schooling, medical treatment etc.

Ans to Q No 12: Excise subsidy is a type of subsidy where government pays a part of the per unit of a good and the amount of the good is allowed to be determined by the consumers itself.

Ans to Q No 13: There are two types excise subsidy:

i) ad valorem excise subsidy

ii) per unit excise subsidy.

Ans to Q No 14: Subsidy on housing.

Ans to Q No 15: As the demand of unsubsidised consumers is remained unchanged, they may pay higher price. They also diminish the consumption of subsidised good. Thus, unsubsidised consumers are harmed by the subsidy. Moreover, they may bear an additional cost if they pay some or all of the taxes required to finance the subsidy.



7.9 MODEL QUESTIONS

(A) Short Questions (Answer in 150 words)

Q 1: Define non- marketed goods. Give examples.

Q 2: How does the government increase the output of non-marketed goods?

Q 3: Cite examples of non-marketed good where government pays the private firms to increase the output of non-marketed goods.

Q 4: Cite an example of non-marketed good where government hire the resources require to increase the production of such goods.

Q 5: What is meant by opportunity cost?

Q 6: What is the impact of financing public expenditure on non-marketed goods by printing of money?

Q 7: The opportunity cost is zero, when there is unemployment in the economy. Is it true? If not, explain.

Q 8: What is meant by fixed quantity subsidy? Cite examples.

Q 9: What are the consequences of fixed quantity subsidy?

Q 10: Is there any empirical study which supports under-consumption of subsidised good under a fixed quantity subsidy programme?

Q 11: Mention the factors on the basis of which under-consumption, overconsumption or exact consumption of a subsidised good occurs in case of fixed quantity subsidy.

Q 12: When a good is easily not divisible and the supplement to the subsidised quantity is too expensive, if not impossible, what is the effect of fixed quantity subsidy on the consumption level?

Q 13: In case of constant cost industry, the incidence of an excise is fall entirely on …….and…….... do not get any long- term benefits. ((Fill in the blanks)

Q 14: Who will get benefit when the supply curve is perfectly elastic?

Q 15: What does happen when an excise subsidy is provided in a constant industry? Do sellers get any benefit?

(B) Essay-type Questions (Answer in 300-500 words)

Q 1: Discuss distributive effects of public expenditure on non-marketed good.

Q 2: Discuss allocative effects of public expenditure on non-marketed good.

Q 3: How does one can explain the opportunity cost associated with increase in the production of non-marketed goods through public expenditure programmes?

Q 4: Give diagrammatic explanation of opportunity cost of increasing the output of non-marketed good under public expenditure programmes.

Q 5: What are the different modes of financing public expenditure on non-marketed good and its impacts on the society?

Q 6: With the help of an appropriate diagram explain the overconsumption of subsidised good.

Q 7: How does a fixed quantity subsidy result in overconsumption of subsidised good? Explain.

Q 8: Can a fixed quantity subsidy give rise to under-consumption of subsidised good? If yes, how?

Q 9: When the supply curve is vertical, there will be no consumption and no welfare cost. Verify that with the aid of a diagram.

Q 10: Write short notes on the following topics:

(a) Non-marketed good

(b) Fixed quantity subsidy

(c) Excise subsidy

Q 11: How does the elasticity of demand curve and supply curve determine the benefit received by the consumer and seller of a market when an excise subsidy is given?

Q 12: Discuss the allocative effects of an excise subsidy from the view point of market perspective with the help of a suitable diagram.

Q 13: Explain the allocative effect of an excise subsidy from individual perspective. Give diagram.

Q 14: How does different factors determine the distributive effect of an excise subsidy? Give diagrammatic explanation.

Q 15: Discuss the effect of an excise subsidy provided to a part of consumer with the help of a diagram.

*** ***** ***

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1) Approximately how many hours did you spend for studying the units in the course? ☐☐☐

2) Please give your opinions (by ✓ mark) to the following items based on your reading of the block:

Sl. No.	Statements	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I)	The SLMs of the course fulfil the learning objectives set out in the beginning of each unit					
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V)	Ample opportunity for participation in the activities provided in the units					
VI)	Used enough Illustrations (Diagrams, tables etc.) for conceptual clarity					
VII)	Quality of content is engaging, relevant, and up-to-date					
VIII)	The self check questions are very helpful					
IX)	The Possible/model questions and the answers to check my progress have benefited me a lot					

Additional Comments: *(Please feel free to provide your open comments)*

1) Which aspects of the SLM, according to you, worked well?

.....

.....

2) What sort of changes/improvements do you feel KKHSOU could implement to improve the overall quality of the SLM?

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Thank you for taking the time to complete this form.