MAECO-403

Public Finance –I

MA ECONOMICS

1st Semester

Rajiv Gandhi University
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PUBLIC FINANCE - I

MA [Economics]

First Semester

MAECO- 403

RAJIV GANDHI UNIVERSITY

Arunachal Pradesh, INDIA - 791 112

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About the University

Rajiv Gandhi University (formerly Arunachal University) is a premier institution for higher education in the state of Arunachal Pradesh and has completed twenty-five years of its existence. Late Smt. Indira Gandhi, the then Prime Minister of India, laid the foundation stone of the university on 4th February, 1984 at Rono Hills, where the present campus is located.

Ever since its inception, the university has been trying to achieve excellence and fulfill the objectives as envisaged in the University Act. The university received academic recognition under Section 2(f) from the University Grants Commission on 28th March, 1985 and started functioning from 1st April, 1985. It got financial recognition under section 12-B of the UGC on 25th March, 1994. Since then Rajiv Gandhi University, (then Arunachal University) has carved a niche for itself in the educational scenario of the country following its selection as a University with potential for excellence by a high-level expert committee of the University Grants Commission from among universities in India.

The University was converted into a Central University with effect from 9th April, 2007 as per notification of the Ministry of Human Resource Development, Government of India.

The University is located atop Rono Hills on a picturesque tableland of 302 acres overlooking the river Dikrong. It is 6.5 km from the National Highway 52-A and 25 km from Itanagar, the State capital. The campus is linked with the National Highway by the Dikrong bridge.

The teaching and research programmes of the University are designed with a view to play a positive role in the socio-economic and cultural development of the State. The University offers Undergraduate, Post-graduate, M.Phil and Ph.D. programmes. The Department of Education also offers the B.Ed. programme.

There are fifteen colleges affiliated to the University. The University has been extending educational facilities to students from the neighbouring states, particularly Assam. The strength of students in different departments of the University and in affiliated colleges has been steadily increasing.

The faculty members have been actively engaged in research activities with financial support from UGC and other funding agencies. Since inception, a number of proposals on research projects have been sanctioned by various funding agencies to the University. Various departments have organized numerous seminars, workshops and conferences. Many faculty members have participated in national and international conferences and seminars held within the country and abroad. Eminent scholars and distinguished personalities have visited the University and delivered lectures on various disciplines.

The academic year 2000-2001 was a year of consolidation for the University. The switch over from the annual to the semester system took off smoothly and the performance of the students registered a marked improvement. Various syllabi designed by Boards of Post-graduate Studies (BPGS) have been implemented. VSAT facility installed by the ERNET India, New Delhi under the UGC-Infonet program, provides Internet access.

In spite of infrastructural constraints, the University has been maintaining its academic excellence. The University has strictly adhered to the academic calendar, conducted the examinations and declared the results on time. The students from the University have found placements not only in State and Central Government

Services, but also in various institutions, industries and organizations. Many students have emerged successful in the National Eligibility Test (NET).

Since inception, the University has made significant progress in teaching, research, innovations in curriculum development and developing infrastructure.

SYLLABI-BOOK MAPPING TABLE

Public Finance - I

Syllabi	Mapping in Book

Unit I: Rationale for Government Intervention

Role of government in economic activity: Allocation, distribution and stabilization functions-Provision of public goods and merit goods- Externalities, market imperfection and government intervention.

Unit II: Size of Government Expenditure

The classical & neoclassical views on the size of the government & its expenditure; Wagner's law of increasing state activities, Keynesianview, effects of public expenditure.

Unit III: Major Theories of Public Expenditure

Voluntary exchange principle and Lindahl's model-Samuelson's model. Musgrave's optimum budget model-Paradox of voting.

Unit IV: Principles of Taxation

Canons of taxation, benefit & ability to pay approaches, neutrality in taxation; taxable capacity, absolute and relative; factor determining taxable capacity; regressive, proportional and progressive tax; overview of Indian Tax System.

Unit V: Effects of Taxation

Tax on income and its effect on work effort, commodity tax: unit andadvalorem, impact and incidence; effects of tax on production and price in different market conditions; elasticity and buoyancy of tax.

CONTENTS

INTRODUCTION

NOTES

Public finance studies the role of the government in the economy. It is the definitive branch of Economics which assesses the government revenue and government expenditure of the public authorities and the adjustment of one or the other to achieve desirable effects and avoid undesirable ones. Public finance is a subject which has the distinction of intimate interaction between theory and practice. As such it acquires a meaning and usefulness only in the context of institutional framework of the economy with reference to which it is being studied. The theoretical concepts and policyapplications in public finance feed upon and grow out of each other. No single theoretical model can adequately fit in the framework of every economy since its institutional framework is a thing unique to itself. It is important, therefore, that the discussion of public finance should be in the context of a single economy.

Recent years have witnessed a heated debate on several theoretical and policy issues covering several segments of public finance, including the role of fiscal policy. Pleas are being made for a thorough restructuring of its various theoretical and policy premises and the framework within which these should be conducted. Exponential growth and transformation in global financial system and worldwide meltdown caused by it have fuelled rethinking on the role of fiscal policy with special focus on economic stability and growth—both in developed and developing countries. India, like the rest of the world, has also been deeply affected by these developments.

This book, *Public Finance*, is written in a self-instructional format and is divided into ten units. Each unit begins with an *Introduction* to the topic followed by an outline of the *Unit Objectives*. The content is then presented in a simple and easy-to-understand manner, and is interspersed with *Check Your Progress* questions to test the reader's understanding of the topic. A list of *Questions and Exercises* is also provided at the end of each unit, and includes short-answer as well as long-answer questions. The *Summary* and *Key Terms* section are useful tools for students and are meant for effective recapitulation of the text.

UNIT I: Rationale for Government Intervention

Structure

1.1 Introduction

In simple layman's terms, public finance is the study of finance related to government entities. It revolves around the role of government income and expenditure in the economy. Prof. Dalton in his book Principles of Public Finance states that "Public Finance is concerned with income and expenditure of public authorities and with the adjustment of one to the other". By this definition, we can understand that public finance deals with the income and expenditure of government entities at any level be it central, state or local. However, in the modern-day context, public finance has a wider scope – it studies the impact of government policies on the economy. There are three main functions of public finance as follows; the allocation function, the distribution function and the stabilization function. Further, modern-day democratic government with an objective of welfare made various provisions for providing different types of merit, public goods etc. In the process of making the provision of such goods, externalities may arise which leads to the failure of the market mechanism in the economy. Externality may be positive or negative. Therefore, government intervention is necessary to correct the externality by imposing some tax or providing subsidies. In this unit, we shall also study the various theories dealing with public expenditure. Finally, the last part deals with the voting paradox relating to public expenditure.

1.2 Objective

The unit will let you know the:

- The role of government in allocation, distribution and stablisation policy for economy.
- Meaning of public and merit goods, also the provision of these goods by the governmet.
- The externalities, its meaning and types. How the externalities leads to market failures and government intervention in to correct it.
- The Wagner's law of Increasing State Activities
- Lindahl model of public expenditure.
- Samuelson model of public expenditure
- The paradox of voting

1.3 Role of Government in Economic Activity

Government economic policy, measures by which a government attempts to influence the economy. The national budget generally reflects the economic policy of a government, and it is partly through the budget that the government exercises its three principal methods of establishing control: the allocative function, the stabilization function, and the distributive function.

Over time, there have been considerable changes in emphasis on these different economic functions of the budget. In the 19th century, government finance was primarily concerned with the allocative function. The job of the government was to raise revenue as cheaply and efficiently as possible to perform the limited tasks that it could do better than the private sector. As the 20th century began, the distribution function acquired increased significance. Social welfare benefits became important, and many countries introduced graduated tax systems. In the later interwar period, and more especially in the 1950s and '60s, stabilization was central, although equity was also a major concern in the design of tax systems. In the 1970s and '80s, however, the pendulum swung back. Once more, allocative issues came to the fore, and stabilization and distribution became less significant in government finance.

Adam Smith is often described as a bold advocate of free markets and minimal governmental activity. However, Smith saw an important resource allocation role for government when he underlined the role of government in national defence, maintenance of justice and the rule of law, establishment and maintenance of highly beneficial public institutions and public works which the market may fail to produce on account of lack of sufficient profits. Since the 1930s, more specifically as a consequence of the great depression, the state's role in the economy has been distinctly gaining in importance and therefore, the traditional functions of the state as described above, have been supplemented with what is referred to as economic functions (also called fiscal functions or public finance function). While there are differences among different countries in respect to the nature and extent of government intervention in economies, all governments are still expected to play a major role. This comes out of the belief that government intervention will invariably influence the performance of the economy positively.

Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three branch taxonomy of the role of government in a market economy. Musgrave believed that, for conceptual purposes, the

functions of government are to be separated into three, namely, resource allocation, (efficiency), income redistribution (fairness) and macroeconomic stabilization. The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function. The allocation function aims to correct the sources of inefficiency in the economic system while the distribution role ensures that the distribution of wealth and income is fair. Monetary and fiscal policy, the problems of macroeconomic stability, maintenance of high levels of employment and price stability etc fall under the stabilization function. We shall now discuss in detail this conceptual three function framework of the responsibilities of the government.

1. Allocation Function:

The provision for social goods, or the process by which total resource use is divided between private and social goods and by which the mix of social goods is chosen. This provision may be termed the allocation function of budget policy. Social goods, as distinct from private goods, cannot be provided for through the market system.

The basic reasons for the market failure in the provision of social goods are: firstly, because consumption of such products by individuals is a non-rival, in the sense that one person's partaking of benefits does not reduce the benefits available to others.

The benefits of social goods are externalised. Secondly, the exclusion principle is not feasible in the case of social goods. The application of exclusion is frequently impossible or prohibitively expensive. So, the social goods are to be provided by the government.

2. Distribution Function:

Adjustment of the distribution of income and wealth to assure conformance with what society considers a 'fair' or 'just' state of distribution. The distribution of income and wealth determined by the market forces and laws of inheritance involves a substantial degree of inequality. Tax transfer policies of the government play an important role in reducing the inequalities in income and wealth in the economy.

3. Stabilization Function:

Fiscal policy is needed for stabilization since full employment and price level stability do not come about automatically in a market economy. Without it, the economy tends to be subject to substantial fluctuations, and it may suffer from sustained periods of unemployment or inflation. Unemployment and inflation may exist at the same time. Such a situation is known as stagflation. The overall level of employment and prices in the economy depends upon the level of aggregate demand, relative to the potential or capacity output valued at prevailing prices. Government expenditures add to total demand, while taxes reduce it. This suggests that budgetary effects on-demand increase as the level of expenditure increases and as the level of tax revenue decreases.

4. Economic Growth:

Moreover, the problem is not only one of maintaining high employment or of curtailing inflation within a given level of capacity output. The effects of the fiscal policy on the rate of growth of potential output must also be allowed. Fiscal policy may affect the rate of saving and the willingness to invest and may thereby influence the rate of capital formation. Capital formation, in turn, affects productivity growth, so the fiscal policy is a significant factor in economic growth.

3.4 Provision of public goods and merit goods

In economics, a public good refers to a commodity or service that is made available to all members of society. Typically, these services are administered by governments and paid for collectively through taxation. Some examples of public goods include law enforcement, national defence, and the rule of law. Public goods also refer to more basic goods, such as access to clean air and drinking water. The two main criteria that distinguish a public good are that it must be non-rivalrous and non-excludable. Non-rivalrous means that the goods do not dwindle in supply as more people consume them; non-excludability means that the good is available to all citizens.

An important issue that is related to public goods is referred to as the free-rider problem. Since public goods are made available to all people–regardless of whether each person individually pays for them–some members of society can use the goods despite refusing to pay for them. People who do not pay taxes, for example, are essentially taking a "free ride" on revenues provided by those who do pay them, as do turnstile jumpers on a subway system. The opposite of a public good is a private good, which is both excludable and rivalrous. These goods can only be used by one person at a time — for example, a wedding ring. In some cases, they may even be destroyed in the act of using them, such as when a slice of pizza is eaten. Private goods generally cost money, and this amount pays for their private use. Most of the goods and services that we consume or make use of in our everyday lives are private goods. Although they are not subject to the free-rider problem, they are also not available to everyone, since not everyone can afford to purchase them.

In some cases, public goods are not fully non-rivalrous and non-excludable. For example, the post office can be seen as a public good, since it is used by a large portion of the population and is financed by taxpayers. However, unlike the air we breathe, using the post office does require some nominal costs, such as paying for postage. Similarly, some goods are described as “quasi-public” goods because, although they are made available to all, their value can diminish as more people use them. For example, a country’s road system may be available to all its citizens, but the value of those roads declines when they become congested during rush hour.

Public goods refer to commodities or services that are made available to all members of the society, provided free of charge through public taxation. Public goods typically have two main characteristics: they are non-excludable and non-rivalrous. Non-excludable means that a particular good is available to all citizens or that individuals cannot be excluded from using that good. Non-rivalrous means that use by one individual does not reduce availability to others as the goods do not dwindle in supply as more people use them. Public goods are the opposite of private goods.

The free-rider problem is an issue we usually associate with the concept of public goods. Since public goods are available to all people, some members of society can use the goods while refusing to pay for them. For example, people who do not pay taxes take a free ride on revenues provided by people who pay them. Hence, public goods may be under-produced and overused.

Merit goods are the goods that are provided generally by the government to certain sections of the society. Unlike in the case of pure public goods, the merit goods are not provided to the entire society; rather they are given to certain targeted people. The government here believe that the deserving people may under-consume such goods and hence provides these to them at low cost or no cost.

1.4.1 Merit goods and Social goods

The concept of merit goods in economics was introduced by an American economist Richard A. Musgrave. Musgrave was a leading public finance specialist. He divided public goods or wants into social goods (wants) and merit goods (wants). Social goods: are goods with a non-exclusion principle and their supply is jointly made. Merit goods: are those public goods that result in interference with consumer choices. Here the government will be providing the goods (merit) to a specific section of the society because of their backward status, poverty etc (depending on their merit). An example of merit goods or wants is the government's expenditure in the educational sector (like the Sarva Shiksha Abhiyan) for the schooling of the poor. The comparison between the social wants and merit wants is simple. In the case of social wants, the goods are provided to all sections of the society (road, defence). In the case of merit wants, the good is provided to certain target groups. Poor people may under-consume most of the merit goods because of their inability to pay. To counter this underconsumption, the government either subsidises them or makes them completely free. In this way, consumption does not depend on the ability to pay the consumer.

Merit goods are not provided based on consumers' preferences. Rather, they are given by the government to its preferences. Merit goods are given by the government to a particular section of society. But in the case of public goods, they are provided to all sections of the society. Merit goods produce social benefits by directly benefiting the sections that receive those goods. When primary education is provided to poor sections, it benefits the nation. Merit goods produce positive externalities. This means that as a result of merit goods supply, the receivers give back some related benefits to society. Merit goods are aimed for personal consumption and not for the consumption of all. Some examples of merit goods include primary education, basic health care, life insurance for poor people etc. The report by the National Institute of Public Finance and Policy titled "Central Government Subsidies in India" (2004), classifies merit goods under two categories- Merit I and Merit II, in terms of their priority.

Merit I – Elementary education, primary healthcare, prevention and control of diseases, social welfare and nutrition, soil and water conservation, ecology, and environment.

Merit II – Education (other than elementary), sports and youth services, family welfare, urban development, forestry, agricultural research and education, other agricultural programmes, special programmes for north-eastern areas, flood control and drainage, non-convention energy, village and small industries, ports and lighthouses, roads and bridges, inland water transport, atomic energy research, space research, oceanographic research, other scientific research, census surveys and statistics, and meteorology.

1.4.2 Non-merit goods and demerit goods

Non-merit goods and demerit goods are used interchangeably. In the case of non-merit goods, there is no tendency for under-consumption; rather there is a tendency for overconsumption. Similarly, consumption depends upon the individual's ability to pay or his income. High income encourages him to consume the good in more quantities. On the other hand, a demerit good is a good whose consumption leaves a negative impact on its consumer and on others in society. An example of a demerit good is alcohol. Consumption of alcohol can cause health problems for the drinker. Besides this personal cost, it also leads to external costs as the taxpayer may have to pay for the drunkard consumer's healthcare as a result. If it is overconsumed the marginal social costs exceed marginal private(drunkard's) costs, due to the external costs imposed on society. Hence a high tax should be imposed on de-merit goods. Public goods are provided to the entire society. Merit goods are provided to targeted individuals. Hence in the case of merit goods, there is exclusion. On the other goods, there is no exclusion under public goods.

1.5 Externalities, market failure and government intervention

Externality, a term used in economics, refers to the costs incurred or the benefits received by a third party, wherein such a third party does not have control over the generation of the costs or benefits. An externality is a cost or benefit caused by a producer that is not financially incurred or received by that producer. An externality can either be both positive or negative and can stem from either the production or consumption of a good or service. The costs and benefits can be both private to an individual or an organization or social, which means that they can affect society as a whole.

Externalities by nature are generally environmental, such as natural resources or public health. Externalities can either be positive or negative. They can also occur from production or consumption. For example, a negative externality is a business that causes pollution that diminishes the property values or health of people in the surrounding area. A positive externality includes actions that reduce transmission of disease or avoids the use of lawn treatments that runoff into rivers and thus contribute to excess plant growth in lakes. Externalities are different from donations of parkland or open-source software. Externalities occur when producing or consuming a good cause an impact on third parties not directly related to the transaction.

1.5.1 Externalities in Production and Consumption

The conditions for efficiency in consumption and production and overall economic efficiency. These conditions involve marginal rates of substitution (MRS) and marginal rates of product transformation (MRPT). The

conditions were derived on the assumption that there were no external effects on consumption and production. However, this may not be so always. Consumption and production may be subject to externalities. The externalities could be positive (these involve external benefits) or negative (these involve external costs). We may first give some examples of positive and negative externalities and then discuss how they change the marginal conditions of efficiency:

(i) Positive Externality in Consumption:

An example of this is vaccination. The welfare of any person in a particular neighbourhood depends not only on whether he is vaccinated but also on whether the people in the said neighbourhood have been vaccinated so that the contagious diseases are not spread.

(ii) Negative Externality in Consumption:

The welfare of any person in a particular neighbourhood depends not only on his avoidance of riding a noisy motorcycle but also on other people's avoidance of doing this.

(iii) Positive Externality in Production:

The example which is often cited here is that of the production of honey. Beekeepers try to put their beehives on farms because nectar from the plants increases the production of honey. The farmers also receive advantages from the beehives because the bees help pollinate the plants.

(iv) Negative Externality in Production:

A very suitable example is that of a paper mill that produces paper and the waste is dumped into a river. The riverside residents and the fish are hurt by the waste.

We may now analyze the consequences of these externalities. The British economist A. C. Pigou was the first to deal with externalities systematically. Pigou argued that in the presence of externalities we do not achieve a Pareto optimum even under perfect competition. If the externalities are present, the social benefit or cost resulting from the production of goods becomes a combination of private and external benefits or costs.

Let us use the following notations:

MPC = marginal private cost

MEC = Marginal External Cost

MSC = Marginal Social Cost and, by definition,

MSC = MPC + MEC Also,

MPB = Marginal Private Benefit

MEB = Marginal External Benefit

MSB = Marginal Social Benefit and, by definition,

MSB = MPB + MEB

Now, overall economic efficiency requires MSC = MSB for each product. For, as long as MSB > MSC, production should be expanded, because additional benefit exceeds additional cost; on the other hand, if MSB < MSC, then production should be decreased to avoid the marginal inefficiencies. Consequently, we should have, for each pair of products, equality between the marginal social rate of product transformation (MSRPT) and the marginal social rate of substitution (MSRS) between the goods. In the presence of externalities, if only the marginal private costs are considered, the economy will not reach economic efficiency. That is, for economic efficiency, consumers and producers must weigh the full social benefits and costs of consumption and production. One way to achieve this is to impose taxes and subsidies which bring private benefits or costs into line with social benefits or costs. We will now illustrate how these taxes and subsidies would work.

(A) Negative Externality in Production:

The case of a negative externality in production has been illustrated with the help of Fig. 1.3.1. Here we are

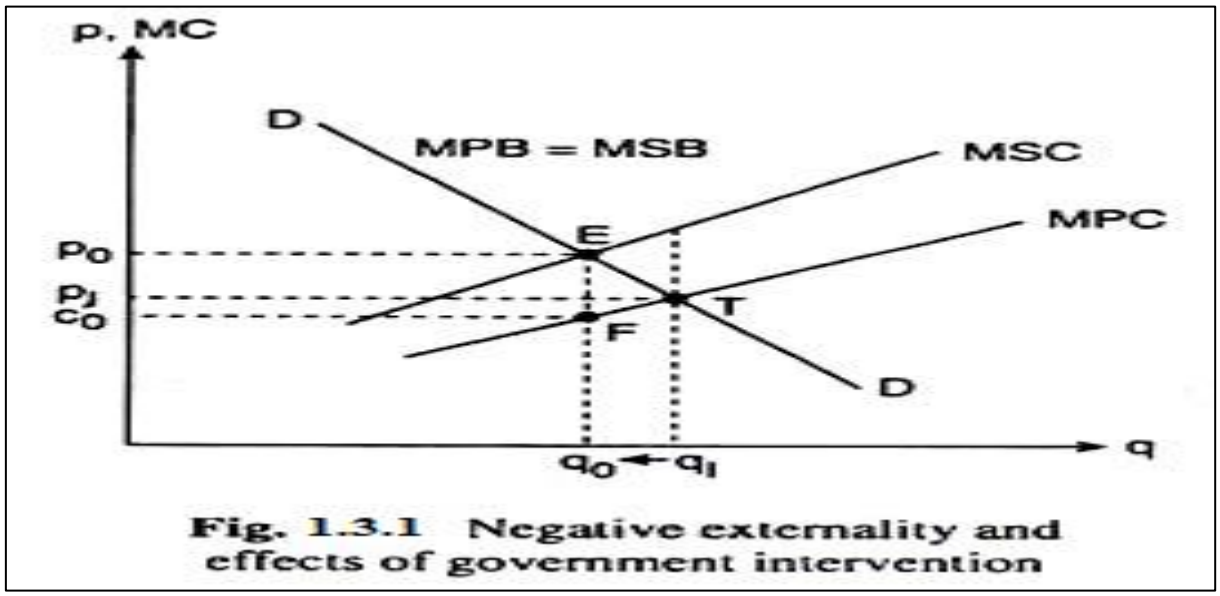

Fig. 1.3.1 Negative externality and effects of government intervention

assuming that there are no externalities in consumption. That is why the demand curve DD shows the marginal private and social benefits (MPB = MSB).

On the other hand, owing to the presence of externalities in production, the marginal social cost (MSC) curve is different from the marginal private cost (MPC) curve, the latter representing the competitive supply curve.

In the case of a negative externality, MSC would be greater than MPC, i.e., the MSC curve would lie above the MPC curve as has been shown in Fig. 1.3.1. The optimal output here is q_0 with the price p_0. But the competitive market, if left alone, will produce q_1 at the price p_1. Thus, there would be a tendency to overproduce in the absence of any market intervention.

At the optimal quantity q_0, the price would be p_0, but the MPC would be c_0. Thus, the government could levy a per unit tax of $(p_0 - c_0)$ on the firm, and thereby increase the MPC by $(p_0 - c_0)$, i.e., to the level of MSC. Consequently, the output of the firm would diminish to q_0 (from q_1). The consumers would pay the price p_0 = MSC.

Now, the revenue from the tax could be used to pay for the external damage caused by the production of the commodity. Let us note, however, that the tax revenue could be more or less than the external damage. The revenue would be equal to $(p_0 - c_0) \times q_0 = \square p_0 E F c_0$ whereas the total external cost would be equal to the area between MSC and MPC curves up to $q = q_0$. Finally, the net gain to society from the tax is given by $\square EFT$ which is the excess of MSC over MPC over the range of output from q_0 to q_1.

(B) Positive Externality in Production:

This case has been illustrated in Fig. 1.3.2. In this case, since there are external benefits, the MSC would be less than MPC and the MSC curve would lie below the MPC curve. In the absence of any externality in consumption, the demand curve for the good gives us the marginal social and private benefits (MSB = MPB).

Therefore, the optimal output would be given by the point of intersection E between the demand curve DD and the MSC curve.

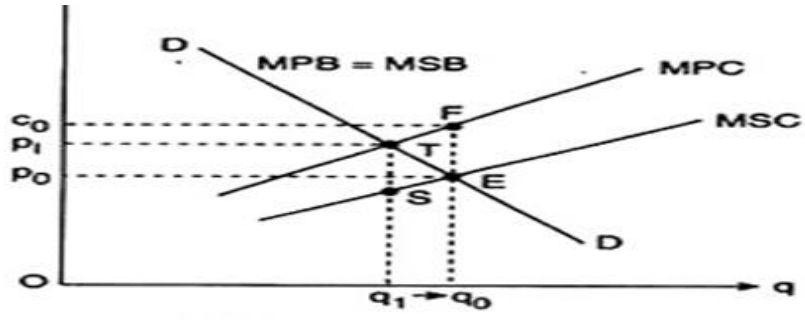

Fig. 1.3.2 Positive externality in production and the effects of government intervention

This optimal output is q_0 at the price p_0. At this output, we have MSB = MSC. However, if there is no market intervention, the competitive market will produce $q = q_1$ at the point of intersection T between the demand curve DD and the competitive supply curve MPC.

In this case of external benefits in production, the free market will produce less than the optimal output ($q_1 < q_0$). At the optimal level of output, the producers will receive a price $p = p_0$, but their marginal cost is MPC = c_0.

Since c_0 is greater than p_0, the producers would have to be paid a subsidy of ($c_0 - p_0$) if they are to increase the output level from q_1 to the optimal level q_0. In the earlier case of external cost a per-unit tax equal to the marginal external cost needed to be imposed to arrive at the optimal output level. On the other hand, in the present case of external benefit, a per-unit subsidy equal to the marginal external benefit has to be given to the producers.

Now, the government may collect the money to be paid as subsidy from the people enjoying the external benefit. But here again, the expenditure on the subsidy [- ($c_0 - p_0$) x q_0 = □P_0EFC_0] may not be equal to total external benefit [= the area between the MPC and MSC curves up to $q = q_0$].

Finally, the net benefit to society from the subsidy would be equal to □STE which is the excess of social benefit over social cost over the range of output from q_1 to q_0.

(C) Negative Externality in Consumption:

This case has been illustrated in Fig. 1.3.3 Since there are no externalities in production, MSC and MPC curves are identical and represent the competitive supply curve. However, on the demand side, the demand curve DD reflects only the marginal private benefit (MPB).

In the presence of negative externality in consumption, the marginal social benefit (MSB) is less than the MPB. That is why the MSB curve lies below the MPB or the DD curve. The socially optimal quantity again is q_0 at the MSC = MSB point, E, and the price is p_0. However, in the absence of any intervention, the quantity supplied and demanded is q_1 at the point of intersection T of the DD (or MPB) curve and the MPC = MSC curve, and the price here is p_1. Thus, there is an overproduction of the commodity ($q_1 > q_0$) as compared to the socially optimal level. If the output is to be restricted to the optimal level, q_0, the price has to be raised to p_0. But the supply price at $q = q_0$ is c_0. Hence, a tax equal to ($p_0 - c_0$) per unit needs to be levied. Then the consumer would pay the price p_0 including the tax which is equal to MPB, i.e., c_0, plus the cost of externality in consumption which is ($p_0 - c_0$).

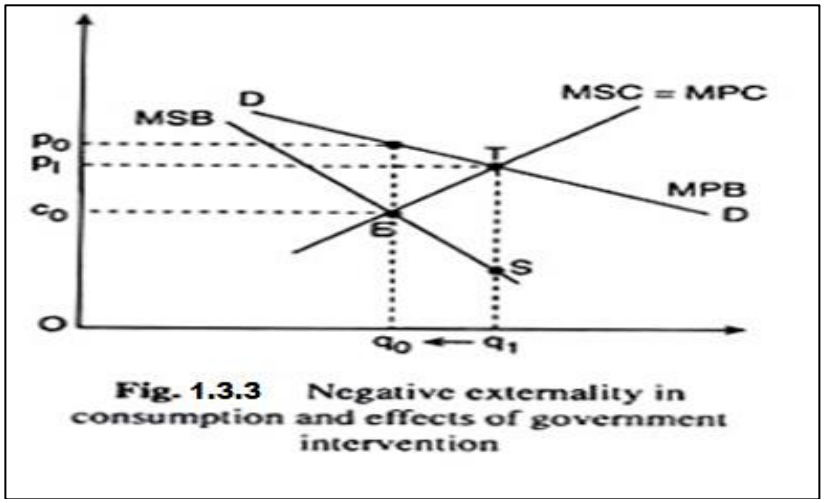

Fig. 1.3.3 Negative externality in consumption and effects of government intervention

Here the revenue generated from the tax may be used to compensate those who are harmed by the negative externality of the consumption of the product. Also, the area EST represents the net benefit of the tax to society. This area is equal to the excess of MSC over MSB over the range of output from q_1 to q_0.

(D) Positive Externality in Consumption:

This case is illustrated by means of Fig.1.3.4, In the absence of externality in production, the MSC and MPC curves are identical and either of them represents the competitive supply curve. But on the demand side, the demand curve DD represents only MPB. In the case of positive externality in consumption, we have MSB > MPB, i.e., the MSB curve would lie above the DD curve or the MPB curve.

Given all this, the socially optimal level of output in Fig. 21.14 is obtained to be q_0 at the MSB = MSC point E, the price of the output being p_0. Without any intervention, the quantity produced would be q, at the MPB = MPC (= MSC here) point T.

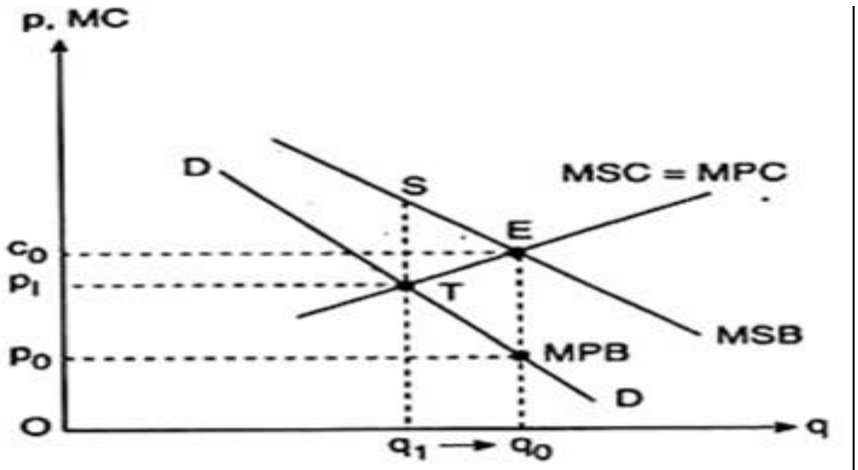

Fig. 1.3.4 Positive externality in consumption and the effects of government intervention

Since $q_1 < q_0$, there would be an underproduction of output (as compared to the socially optimal level) in this case of positive externality in consumption. At $q = q_0$, the market price would be p_0 but the marginal cost (both private and social) would be c_0. Since the marginal cost (c_0) is greater than the price (p_0), the producers have to be given a per unit subsidy of ($c_0 - p_0$) if the output is to be maintained at the optimal level, q_0.

Then the producers will get c_0 per unit of output and the consumers would pay p_0. At least part of the subsidy ($c_0 - p_0$) x q_0 could possibly be collected from those who reaped the external benefits arising from the consumption of the good. Again, the net benefit to the society from the subsidy is measured by the area EST which is the excess of social benefit over the social cost over the range of output from q_1 to q_0.

In the cases of externalities discussed above we have obtained the following results:

(i) In the presence of externalities, the socially optimal level of output q_0 is given by the condition MSB = MSC.

(ii) The private production of output q_1 is given by the condition MPB = MPC.

(iii) To obtain the optimal level of output q_0, we can use some appropriate tax and/or subsidy Programmes.

1.6 Wagner's law of increasing state activities

Adam Smith wrote in the 'Wealth of Nations' that the government should restrict their activities to; defence against foreign aggression, Maintenance of internal peace and order. Public development work. All other functions besides these were considered beyond the scope of the state & expenditure on them was treated as unjust & wasteful. But there had been a spectacular expansion in the functions of the state & which resulted in a phenomenal increase in public expenditure.

Adolph Wagner, the German economist made an in-depth study relating to the rise in government expenditure in the late 19thcentury. Based on his study, he propounded a law called "The Law of Increasing State Activity". Wagner's law states that "as the economy develops over time, the activities and functions of the government increase". According to Adolph Wagner, "Comprehensive comparisons of different countries and different times show that among progressive peoples (societies), with which alone we are concerned; an increase regularly takes place in the activity of both the Central Government and Local Governments, constantly undertake new functions, while they perform both old and new functions more efficiently and more completely. In this way economic needs of the people to an increasing extent and in a more satisfactory fashion, are satisfied by the Central and Local Governments."

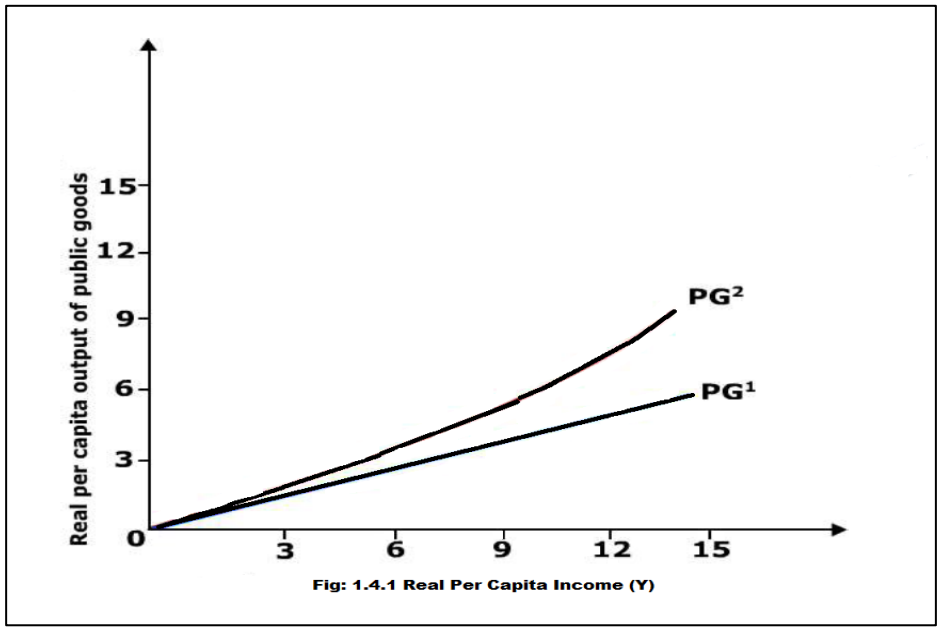

Fig: 1.4.1 Real Per Capita Income (Y)

Wagner's statement indicates the following points:

1. In a progressive society, the activities of the central and local governments increase regularly.
2. The increase in government activities is both extensive and intensive.
3. The governments undertake new functions in the interest of society.
4. The old and the new functions are performed more efficiently and completely than before.
5. The purpose of government activities is to meet the economic needs of the people.
6. The expansion & intensification of government functions & activities leads to an increase in public expenditure.

Though Wagner studied the economic growth of Germany, it applies to other countries too both developed and developing. Wagner's law of increasing state activities is a universal truth in recent years. It is a fact that the economic growth of a country has always been accompanied by increasing state activities and hence increasing public expenditure. To justify the law of increasing state activities he divided the public expenditure into two

parts; external and internal expenditure. The external expenditure increases as the strategic approach of the government change from simple aggression to the prevention of attack. It also increases in demand for goods and services in the public sector. The internal expenditure increases due to greater friction between economic units and people, a high standard of living, and maintenance of large administrative units as a result of economic development. Wagner's law of increasing state activities can be explained with the help of a diagram. Figure 1.4.1 shows the relative expansion of public sector economic activity over an extended period
of time. On the horizontal and vertical axis, real per capita income (Y) and real per capita output of public goods (PG) are measured, respectively. PG1 represents a constant proportional increase in the real per capita output of public goods with the increase in real per capita income whereas PG2 indicates that the public sector grows at an increasing rate. In other words, the proportional increase in the public sector is not constant but increases with the increase in total economic activity.

Although the Wagner hypothesis has many attributes, it also has 'several defects. Wagner's law of increasing state activity was criticized by Allan. T. Peacock and Jack Wiseman on the following grounds:

1. Wagner's hypothesis deals with the interdisciplinary phenomenon. But it lacks an interdisciplinary approach in its analytical framework.
2. Lacks comprehensiveness in analysis Wagner's law lacks comprehensiveness. Political science, economics and sociology are among the several disciplines to be incorporated in any theory of public expenditure. Wagner's hypothesis excludes all these characteristics.
3. It is based on an organic self-determining theory of the state, which is not the prevailing theory of the state in most western countries.
4. The theory ignores the influence of war on governmental spending, and
5. It stresses a long-term trend of public economic activity, which tend to overlook the significant 'time pattern' or process of public expenditure growth.

1.6.1 Wiseman-Peacock Hypothesis

Peacock and Wiseman conducted a new study based on Wagner's Law. They studied the public expenditure from 1891 to 1955 in the U.K. They found out that Wagner's Law is still valid. Wiseman Peacock focused on the pattern of public expenditure and concluded that public expenditure does not increase smoothly and continuously, but in a jerks or step-like fashion. Peacock and Wiseman further stated that "The rise in public expenditure greatly depends on revenue collection. Over the years, economic development results in substantial revenue to the governments, this enabled to increase public expenditure".

There exists a big gap between the expectations of the people about public expenditure and the tolerance level of taxation. Therefore, governments cannot ignore the demands made by people regarding various services, especially, when the revenue collection is increasing at a constant rate of taxation.

They further stated that during the times of war, the government further increases the tax rates, and enlarges the

tax structure to generate more funds to meet the increase in defence expenditure. After the war, the new tax rates and tax structures may remain the same, as people get used to them. Therefore, the increase in revenue results in a rise in government expenditure. They gave three separate concepts to justify the hypothesis.

1. Displacement Effect
2. Inspection Effect
3. Concentration Effect

At the time, some social or other disturbance takes place, creating a need for increased public expenditure which the existing public revenue cannot meet. In absence of dire needs and sufficient pressure earlier, the revenue constraints were dominating, guiding and restraining the growth of public expenditure. Now under changed requirements due to social, economic or other disturbances, such constraints are done away with. Fiscal activities of the government rise step by step to a successive new higher level over the decades to meet successive social and other disturbances. The Public expenditure increases and makes the inadequacy of the present revenue quite clear to everyone.

Displacement Effect: When a social disturbance occurs, the government raises taxes to increase revenue and increases public expenditure to meet the social disturbances. This creates a displacement effect by which low taxes and expenditures are replaced by higher tax and expenditure levels. The movement from the older level of expenditure and taxation to a new and higher level is the displacement effect. However, after the disturbance ends, the people get used to the newly emerged level of tax tolerance and make the people willing to support the higher level of public expenditure. As a result, the new level of public expenditure and public revenue stabilise but are soon destabilised by another new disturbance which causes another displacement effect.

Inspection Effect: The inadequacy of the revenue as compared with the required public expenditure creates an inspection effect. The government and the people review the revenue position and need to find a solution to the important problems that have come up and agree to the required adjustment to finance and thus increase expenditure. They attain a new level of tax tolerance. They are now ready to tolerate a greater burden of taxation and as result, the general level of expenditure and revenue goes up. In this way, the public expenditure and revenue get stabilized at a new level till another disturbance occurs to cause a displacement effect.

Concentration Effect: When an economy is experiencing economic growth there is a tendency for the central government`s economic activities to grow at a faster rate than that of state and local government activities. This is known as the concentration effect. It is related to the political setup of the country. Thus, each major disturbance leads to the government assuming a larger proportion of the gross national activity. The concentration-effect also refers to the apparent activity to grow faster than that of those state and local level governments.

Wiseman-Peacock hypothesis emphasises the recurrence of abnormal situations which cause sizable jumps in public expenditure and revenue. But historical facts indicate that on account of the advancement of the economy and structural changes therein, there are constant and regular increments in public expenditure and revenue. To

the extent public expenditure gets financed by ever-increasing revenue which is made possible through the expansion and structural changes in the economy, public expenditure will continue to rise.

1.7 Lindhal's model of Public Expenditure

It is an approach to the analysis of the provision of public goods which seeks to establish conditions under which these goods can be provided based on unanimous agreement— i.e. without coercion. This may be contrasted with the generally observed arrangement that the provision of public goods is financed by compulsory taxation and not by voluntary agreement. At the outset, individuals would be aware of their allotted share of any tax to be levied. The problem would then be to decide the level of provision. The analysis was extended by Lindahl, who presented a model in which both the share of taxes and the amount of goods were open to debate.

In Lindahl's model, equilibrium requires each individual to pay a tax rate just equal to the individual's marginal utility from the good. This can be shown for a two-person community (consisting of A and B) in Fig. 1.5.1, the quantity of the public good is represented on the horizontal axis and the share of tax paid by A and B along the vertical axis. A's share of taxes increases from the bottom to up and S's share of taxes increases from top to down. The schedule DA indicates the amount of the good A will wish to demand at different levels of his tax share. As his share of the cost goes down his desired level of provision increases. DB indicates B's preferences— again, as his share of the cost falls, his preferred quantity of the good increases. The Lindahl equilibrium involves producing Q1 of the good with tax shares as indicated at point S.

In the Lindahl model, public goods are provided in a manner that ensures everyone gains from their provision i.e. The provision of goods is always a Pareto improvement. Lindahl's analysis adds the condition that each individual consumes his most preferred or 'optimal' amount of the public good given his tax share.

Despite the appeal of the model, difficulties arise in its application. In particular, the problems of reaching unanimous agreement and the possibility that individuals will not indicate true preferences (i.e. they may seek to be free riders) under-mine the usefulness of the model.

Let π ij+k be the price which individual i pays for public good K and let Pj + k be the producer price or marginal cost. Then the Lindahl equilibrium would be characterised by the condition:

$$\sum_i \pi_k^i = Pk, (k = j + 1 \dots\dots\dots\dots, J + K$$

Thus, at first glance, the concept of a Lindahl equilibrium seems to establish an analogue to the competitive markets for private goods with an interesting difference. That the prices should differ from one individual to the other, depending on his marginal willingness to pay.

This also ties in with older notions of the benefit theory of taxation, according to which taxes were seen as payments for public goods to be levied in accordance with the benefits which each individual derived from them. There is an interesting duality between the definitions of private and public goods on one hand and properties of equilibrium prices on the other. In terms of quantities, for private goods, the sum of individual quantities

consumed adds up to the quantity produced, while, for public goods, individual consumption equals aggregate production. In terms of prices, on the other hand, for private goods, each consumer price equals the producer price, while for public goods individual consumer prices add up to the producer price.

There is, however, one crucial difference between a Lindahl equilibrium and a competitive equilibrium for private goods. With private goods, individuals facing given prices have clear incentives to reveal their true preferences by equating their marginal rates of substitution to relative prices, at least if the economy is sufficiently large relative to the individual. Without paying, the individual is excluded from enjoying the benefits of consumption.

With public goods this no longer holds. Because an individual has the same quantity of public goods available to him whether he pays or not, he has an incentive to misrepresent his preferences and to be a free-rider on the supply paid for by others. Moreover, this problem is likely to be particu-larly severe when the number of individuals is large since their contribution will then make little difference to the total supply.

The equilibrium of the Lindahl model is not compatible with individual incentives to reveal preferences truthfully; for this reason, Samuelson (1969) has referred to the individual Lindahl prices as pseudo-prices and the equilibrium as pseudo-equilibrium. In this case, one would conjecture that because all individuals have the same incentives to understate their true mar-ginal willingness to pay, the Lindahl mechanism would result in equilibrium levels of public goods supply which would be too low relative to the optimum.

But there is no need to associate the problem of preference revelation with this procedure alone; as another extreme, one might think of the case where individuals are asked to state their preferences on the as-sumption that the cost to them is completely independent of their stated willingness to play, but there is a positive association between this and the quantity supplied.

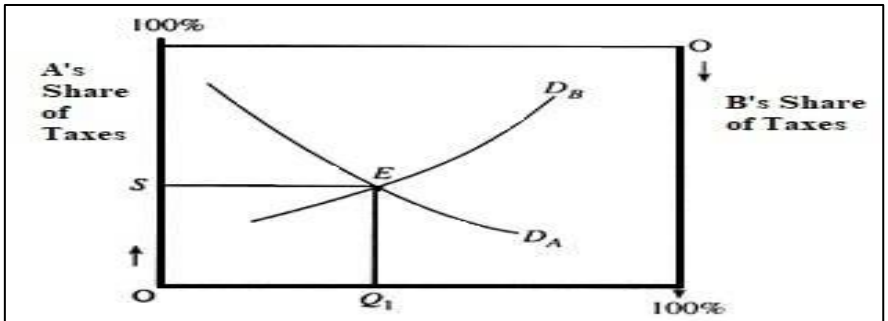

Fig: 1.5.1 Lindahl Equilibrium

Then there will be incen-tives to exaggerate the willingness to pay and a consequent tendency towards over-supply. Thus, the general problem which arises is how to design a mechanism that will allow the decision-maker to implement the efficiency condition. The development (1954-55) by Paul Samuelson of the modern theory of public goods must be counted as one of the breakthroughs in the theory of public finance.

1.8 Samuelson's model of Public Expenditure

The model aims to derive conditions for optimal resource allocation in an economy in which there are two types of goods—private and public. It is worth emphasizing that these terms do not prejudge the respective tasks of the private and public sectors; the analysis at this stage is institution-free and can best be considered as representing

the problems of a planner who knows the production possibilities of the economy, the preferences of the consumers and his ethical values. Samuelson considered the case of a pure public good naming such public goods as 'collective consumption goods.

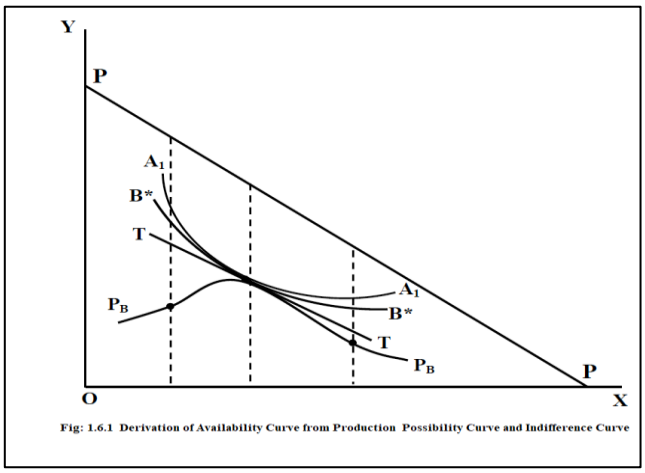

Fig: 1.6.1 Derivation of Availability Curve from Production Possibility Curve and Indifference Curve

By contrasting with private goods, he specified the optimality conditions for the efficient production of the public good and the private goods simultaneously. He called it the pure theory of public expenditure without entrusting it to any institutional structure. This model is as follows. Let X be the public good (national defence) and Y be the private good. By the virtue of non-rivalry, X is equally and simultaneously consumed by both the consumer's A and B and hence there is no need for subscripting X. Y being a private good, it is shared between the two consumers in two different quantities so that Y = YA + YB i.e. it is fully consumed and there is no saving. Let PP be the Production Possibility Curve (Transformation Curve or Opportunity Cost Curve): the more Y is produced; the less X is produced and vice versa. F(X, Y) = 0 is the Production Possibility Curve. MRT (Marginal Rate of Transformation) will represent the opportunity cost of obtaining one more unit of X with the sacrifice of some quantity of Y. With straight line PPC, MRT is the same across all points. Individual utilities are functions of common quantity of public good X and individual quantities of Y i.e. UA = f(X, YA) and UB = g(X, YB). UA and UB are represented by the maps of their indifference curves (see Fig. 4.3). Let AiAi and BjBj represent their sets of indifference curves. If A's utility level is fixed and B's utility is maximised, the economy reaches consumption efficiency in Pareto fashion. Let us fix A's utility level at UA1 and draw only one indifference curve A1A1 for consumer A. For a given level of X, let us find out Y2 = Y – Y1, which would give the locus of available consumption basket for consumer B, given the indifference curve for A at A1A1. For obtaining this, draw a few vertical lines and for a given X, find out Y2 = Y – Y1. Connect these points and call the curve PBPB as the 'availability curve' for consumer B. Draw the highest possible indifference curve B*B* attainable, which is tangent with the availability curve. This gives the 'marginal rate of substitution' for B (MRSB) which is B's sacrifice of Y to gain one more unit of X. For another level for A's utility, there will be another availability curve and from it the highest possible indifference curve can be obtained as B+B+. This way, at different X's, there shall be different MRSB's. With similar exercise by fixing B's utility levels, we can obtain a whole schedule of MRSA for different X's. Since both A and B have to, per force, consume the same amount of X whatever YA and YB they may consume, MRSA and MRSB can be vertically summed up. Hence, one can write: MRS = MRSA + MRSB (4.2) A diagram can then be drawn on the lines of Fig. 4.3 where MRT is just MSC and MRSA, MRSB, and MRS replace DA, DB, and DA+B respectively as price of getting public good X is in terms of private good Y. For efficient provision: MRT = ΣMRS = MRSA + MRSB (4.3) The intersection point of ΣMRS and MRT curves gives the quantity Q of X and

Y to be produced and its division between YA and YB. Samuelson insists on the use of a social welfare function (or grand utility function), having the shape of a indifference curve. The tangency point between production possibility function and grand utility function would provide the exact shape of social welfare function (being determined by more out of ethical considerations than economic).

1.9 Paradox of Voting

The paradox of voting was discovered over 200 years ago by M. Condorcet, a French mathematician, philosopher, economist, and social scientist. However, it received little attention until Duncan Black explained its significance in a series of essays he began in the 1940s. The importance of the voting paradox was not fully realized until several years after Kenneth Arrow published Social Choice and Individual Values in 1951, which contained his General Possibility Theorem. The essence of this theorem is that there is no method of aggregating individual preferences over three or more alternatives that satisfies several conditions of fairness and always produces a logical result.

The most common form of the paradox of voting refers to a situation where the outcome of majority-rule voting over a discrete set of candidates produces no clear winner, even though each individual voter has a clear and transitive rank ordering of preferences over the alternative options. The paradox is that although individual preferences are transitive, the preferences of the majority are cyclical. Thus, although each individual voter has a most preferred candidate, a "reasonable" majority-rule method of voting produces no clear winner.

To see the paradox at work, consider this example. Adam, Bala, and Chen are three candidates for a position on the school committee. There are three voters, whose preferences are as follows:

First Voter: 1. Adam, 2. Bala, 3. Chen;

Second Voter: 1. Chen, 2. Adam, 3. Bala;

Third Voter: 1. Bala, 2. Chen, 3. Adam.

Who should be declared the winner if each voter declares their rankings? Two out of three voters (First Voter and Second Voter) prefer Adam over Bala. Similarly, two out of three voters (Second Voter and Third Voter) prefer Chen over Adam. Should Chen be declared the winner? Not quite. Two out of three voters (First Voter and Third Voter) prefer Bala over Chen, thereby leading to no clear resolution.

The potential for such a paradox was first noted by the marquis de Condorcet (1743–1794), the French mathematician, philosopher, and social scientist, in his *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la pluralité des voix* (Essay on the Application of Analysis to the Probability of Majority Decisions, 1785). The voting method used in the example is the so-called Condorcet method, which can be summarized as follows: First, rank each candidate in order of preference (tied ranking is allowed), and then compare each candidate with every other candidate and find a winner for each pair-wise comparison. The candidate that tallies the biggest wins across all pair-wise comparisons wins the election; however, as suggested by the term paradox, there is no guarantee of a winner.

Since Condorcet, other scholars have discussed the paradox and its broader implications, most notably Kenneth Arrow in his seminal work Social Choice and Individual Values (1951). Arrow postulated five "rational" and "ethical" criteria that any social-welfare function must meet, and showed that there is no method of aggregating individual preferences over three or more alternatives that satisfies these criteria and always produces a fair and logical result. Much of the work on social choice theory that has followed Arrow's results either validates his conclusions or attempts to find a way around them.

Subsequent authors have attempted to resolve the original paradox of voting in various ways, including one that involves using the Condorcet method first, and if it produces no resolution, then using an alternative such as the "Borda count." In a Borda count, each voter assigns points to candidates in order of his or her preference: If there are n candidates, each voter gives n points to his or her top ranked candidate(s), n – 1 points to the second ranked candidate(s), and so on. There are different formulae for assigning points to each voter's preferences, with higher points being assigned to higher ranked candidates. The candidate with the highest number of points aggregated across all voters wins.

Other approaches involve taking a multistage approach to finding a winner. In the first stage, if there is no clear winner, a second voting method is used whereby the candidates are restricted in some way, for example with the smallest set such that every candidate in the set beats all candidates not included in this restricted set (the "Smith set"). Other approaches involve the farsightedness of voters. Ariel Rubinstein (1980) introduced the "stability set," which produces a winner when voters not only make pair-wise comparisons, but also think one step ahead. Yet, Bhaskar Chakravorti (1999) has shown that this notion is itself limited, and if voters do not ignore farsightedness on the part of other voters and are "consistently" farsighted (that is, they can consider comparisons arbitrarily far ahead in the chain), then the paradox returns.

Many alternative voting systems have been proposed to ensure a fair resolution in most practical situations. Common alternatives include run-off elections; approval voting, where voters cast a vote for all the candidates of whom they approve; and the Borda count. A second version of the paradox of voting is attributed to Anthony Downs (1957). According to Downs's construct, a rational voter will refrain from voting because the costs of voting usually exceed the expected benefits. The probability of casting an election's decisive vote is too small to make the benefits worthwhile, whereas the cost of going out to vote and forgoing other activities is positive and quite tangible. The fact that voters do, indeed, participate in elections to vote is paradoxical, given such a rational calculation. Various theories have been put forward to resolve or explain the Downs paradox. Some have suggested that voters consider factors other than the private cost-benefit analysis to decide whether or not to vote. Some vote because they consider it a responsibility and a social duty, whereas others vote to gain satisfaction from the fact they have registered their preferences in some way, even if it is not decisive, and derive utility from participating in a democratic process.

Let's Sum up

The unit begin with the role of government in economic activities that is fiscal function such as allocation, distribution and stabilization functions. We also discussed the provision of public goods and merit goods made by the government. Under such provisions of public and merit good free of cost, the issues of free rider problem arises. The concept of externalities also discussed and its type such as positive and negative externalities are explained with examples. Further, how the externalities lead to market failure and the government intervention leads to correction of market mechanism also discussed.

The units also discussed the theory deals with public expenditure. Wagner's law of increasing state activities, Lindahl model and Samuelson deals with public expenditure theory. It discusses how the public expenditure increases over the time and how the tax to be allocated from every tax payer to meet up the public expenditure. Finally, the units in last part discuss the paradox of voting regarding the public expenditure.

Key Words

Public Goods: Goods that are non-rival in consumption and consumers cannot be excluded altogether are public goods.

Merit Goods: Goods that are useful to not only consumers but to the society at large are recognized as merit goods and their consumption is encouraged by society or government.

Private Goods: Goods that are rival in consumption and consumers can be excluded with ease are called private goods

Demerit Goods: Goods that consumers like but are actually harmful and therefore their consumption is discouraged are known as demerit goods.

Free Rider's Problem: If it is not possible for providers to exclude one from consumption of the good, one has incentive to free ride the use of the good without sharing the cost of its provisioning. This is referred to as the free rider's problem.

Externality: An externality is a cost or benefit caused by a producer that is not financially incurred or received by that producer.

Suggested Questions

Short Question:

1. Define merit and public goods.
2. What is free rider problem in economics.
3. What are externalities.
4. What is the role of government to correct the externalities?

Long Question:

1. Discuss the role of government in allocation, distribution and stabilization process.

2. How externalities lead to market failure?
3. Explain the Wagner's law of public expenditure.
4. Discuss the paradox of voting.

Further suggested Readings

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UNIT 2 SIZE OF GOVERNMENT EXPENDITURE

NOTES

Structure

2.0 INTRODUCTION

Public expenditure refers to the expenses, including transfers, which a government disburses for: (i) its own maintenance, (ii) the society and the economy, and (iii) helping other countries. In practice, however, with expanding State activities, it is becoming increasingly difficult to demarcate the portion of public expenditure meant for the maintenance of the government itself from the total.

In spite of the fact that public expenditure has increased rapidly during the last two centuries or so in almost every State, and in spite of its growing role and importance in national economies, the area of public expenditure remains relatively unexplored. As Lowell Harris says, 'the economists have generally concentrated their attention on the theory of taxation. The theory of public expenditure has been more or less confined to that of generalities in terms of the effects of public expenditure on employment and prices etc.' Of course, it may be pointed out, that lately this deficiency is being removed by various studies in the field of public expenditure.

There are two important and well known *theories of increasing public expenditure*. The first one is associated with Wagner and the other one with Wiseman and Peacock.

Ideas regarding the need and the effects of public expenditure have varied over time. The earlier thinking was imbedded in the philosophy of *laissez-faire* according to which a good government always governed the least. It was claimed that everyone was the best judge of his own interests and the government could not be expected to decide on his behalf. The government was to confine itself to the preservation of the society and undertake those activities and projects which were commercially unprofitable but essential for the economy and society.

However, over time, it became increasingly difficult to ignore the fact of 'market failures' and the need for State intervention and regulation to remedy its ill effects. This

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not only led to a rapid growth of the government sector and public expenditure but also bred various hypotheses concerning public expenditure. However, approaches adopted by various thinkers and writers lacked uniformity with an inevitable lack of a general agreement on the effects of public expenditure and an optimum expenditure policy. Differences of opinion persisted over the effectiveness of a public expenditure policy in areas of economic stabilization, distributive justice, regional disparities, inter-sectoral balance, and so on. In this unit, you will be acquainted with the classical and neoclassical views on public expenditure, the Keynesian economic theory and Keynes contribution towards the study of economics, Wagner's law of increasing State activities and the effects of public expenditure.

2.1 UNIT OBJECTIVES

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

- Describe the classical and neoclassical views on public expenditure
- Assess the Keynesian economic theory and Keynes contribution towards the study of economics
- Discuss Wagner's law of increasing state activities
- Analyse the effects of public expenditure

2.2 CLASSICAL AND NEOCLASSICAL VIEWS ON PUBLIC EXPENDITURE

The origin of macroeconomic theory can be traced to the writings of the mercantilists and the physiocrats well before the development of the classical macroeconomic theory. Although the orthodox economic theory assuming full employment, was largely microeconomic theory concerned with the analysis of allocation of economy's given resources between their different competing uses and determination of the relative prices, this is not to suggest that there was no classical macroeconomic theory concerned with the analysis of the aggregate output, employment and general price level. In a way, the classical economic theory was almost macroeconomics while the neoclassical theory was nothing but microeconomics. In the first half of the 19th century, economics was regarded as a study of the nature and causes of the wealth of nations.

The classicists had their own views on the theory of general price level distinguished from the theory of relative prices. In classical economics[1], the quantity theory of money, theory of economic growth and discussion about the cyclical fluctuations—topics which are important in modern macroeconomic theory—occupied significant place. It might, however, be said that the primary concern of the classical economic theory was still not the determination of the levels of output and employment since it assumed a situation of automatic full employment. The bulk of the traditional economic theoryuntil the publication of Keynes' great work entitled *The General Theory of Employment, Interest and Money* published in 1936 was microeconomics. However, the monetary and business cycle theories having a long history are clearly macroeconomic in character.

Led by Alfred Marshall, the neoclassical economists implicitly made the conclusions derived from the Say's Law of Markets a premise of their analysis of value and distribution. By assuming full employment and the related levels of output and income,

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Marshall and his followers focused their attention on the analytical problems of the determination of relative prices of goods and resource allocation among their alternative competing uses. The problem of the extent of the use of resources was virtually assumed away since in the long run every resource unit was assumed to be optimally employed. Consequently, it was left to the under consumptionists J. A. Hobson, A. F. Mummery, Wilhelm Roscher and Thornstein Veblen—and the advocates of the disproportionate investment theory—Arthur Spiethoff, Tugan-Baranowsky and Joseph ASchumpeter—to challenge the Say's Law of Markets. Although Alfred Marshall's chief concern was with the explanation of determination of the commodity and factor prices, nevertheless he also discussed the relationship between the general price level (*P*), the total quantity of money in circulation (*M*), the fraction of their total money income which people hold in the form of cash balances (*k*) and the amount of total real output (*O*). He formulated the famous Cambridge or cash-balances equation of exchange of the quantity theory of money. Thus, in so far as Marshall developed the quantity theory of money, he contributed in an important way to the development of macroeconomics. In this, he was followed by his other Cambridge colleagues, Arthur Cecil Pigou, Dennis Holme Robertson and John Maynard Keynes who enunciated their own but almost similar quantity theory of money equations.

Alfred Marshall, however, failed to integrate the theory of money with the theory of income and output. Monetary theory dwelt largely in a compartment separate from the theory of income, output and employment and its contents were virtually limited to the quantity theory of money. It was Keynes who, by introducing the asset or speculative demand for cash balances, by relating it to interest rate and by showing the relationship between interest rate and the investment demand schedule, successfully integrated the monetary theory with the theory of aggregate income, output and employment.

Keynesian macroeconomics[2] (also called the new economics) refers to that body of economic theory whose base is Keynes' book *The General Theory*. The most distinguishing feature of the Keynesian macroeconomics is its neat exposition of how an economy may be in equilibrium at less than full employment level. It amounted to an outright rejection of the classical macroeconomic theory which denied such a possibility. This fundamental difference between the classical and the Keynesian approaches is of vital significance from the point of view of economic policy because once the basic Keynesian argument that left to itself the economy would not automatically attain full employment, a positive role for the government in the form of incurring massive expenditure on public works programmes in order to bridge the gap between the aggregate demand and the aggregate supply at full employment caused by the deficiency of the aggregate effective demand can be fully justified.

By giving a new direction to fiscal policy and by defending the massive public works programme during depression, the Keynesian economics spurred the development of macroeconomic theory during the past seven decades following the publication of *The General Theory*. Keynes was, however, also responsible for the emasculation of monetary policy by focusing attention on the liquidity trap which prevents the rate of interest from falling below a certain critical minimum (Keynes believed it to be around 2 per cent) level and at this rate of interest the aggregate real income generated in the economy might fall short of the full employment level of the aggregate real income.

The most important contribution of Keynes' *The General Theory* to the development of macroeconomic theory is the clear and specific formulation of the consumption function.[3] According to Alvin H. Hansen, 'this is an epoch-making contribution

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to the tools of economic analysis, analogous to, but even more important than, Marshall's discovery of the demand function.'[4] It is by far the most effective tool that has been added to the modern macroeconomists' kit of tools. Keynes' *The General Theory* has made the income, output and employment analysis for the modern economists as important as was the price analysis for the classicists.

The other significant contributions of Keynes, to mention only a few, include the theory of the rate of interest indicating its great importance in the effective implementation of fiscal policy; clear exposition of the concept of marginal efficiency of capital and its vital relationship with business cycle; investment multiplier analysis; theory of money and prices and the liquidity preference analysis. The Keynesian liquidity preference analysis explains that it is possible for a rich and industrially advanced society to hold the enormous amount of liquid assets without fearing inflation. Keynes' contribution to the development of macroeconomic theory is essentially an introduction to the Keynesian analysis of income and employment emerging from Keynes' great work entitled *The General Theory of Employment, Interest and Money* published in 1936.

2.2.1 Keynesian View on Public Expenditure

The central tenet of this school of thought is that government intervention can stabilize the economy

Just how important is money? Few would deny that it plays a key role in the economy.

During the Great Depression of the 1930s, existing economic theory was unable either to explain the causes of the severe worldwide economic collapse or to provide an adequate public policy solution to jump-start production and employment.

British economist John Maynard Keynes spearheaded a revolution in economic thinking that overturned the then-prevailing idea that free markets would automatically provide full employment—that is, that everyone who wanted a job would have one as long as workers were flexible in their wage demands. The main plank of Keynes's theory, which has come to bear his name, is the assertion that aggregate demand—measured as the sum of spending by households, businesses, and the government—is the most important driving force in an economy. Keynes further asserted that free markets have no self-balancing mechanisms that lead to full employment. Keynesian economists justify government intervention through public policies that aim to achieve full employment and price stability.

The Revolutionary Idea

Keynes argued that inadequate overall demand could lead to prolonged periods of high unemployment. An economy's output of goods and services is the sum of four components: Consumption, investment, government purchases, and net exports (the difference between what a country sells to and buys from foreign countries). Any increase in demand has to come from one of these four components. But during a recession, strong forces often dampen demand as spending goes down. For example, during economic downturns uncertainty often erodes consumer confidence, causing them to reduce their spending, especially on discretionary purchases like a house or a car. This reduction in spending by consumers can result in less investment spending by businesses, as firms respond to weakened demand for their products. This puts the task of increasing output on the shoulders of the government. According to Keynesian economics, state intervention is

necessary to moderate the booms and busts in economic activity, otherwise known as the business cycle.

There are three principal tenets in the Keynesian description of how the economy works:

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- **Aggregate demand is influenced by many economic decisions—public and private.** Private sector decisions can sometimes lead to adverse macroeconomic outcomes, such as reduction in consumer spending during a recession. These market failures sometimes call for active policies by the government, such as a fiscal stimulus package (explained below). Therefore, Keynesian economics supports a mixed economy guided mainly by the private sector but partly operated by the government.
- **Prices, and especially wages, respond slowly to changes in supply and demand**, resulting in periodic shortages and surpluses, especially of labour.
- **Changes in aggregate demand, whether anticipated or unanticipated, have their greatest short-run effect on real output and employment, not on prices.** Keynesians believe that, because prices are somewhat rigid, fluctuations in any component of spending—consumption, investment, or government expenditures—cause output to change. If government spending increases, for example, and all other spending components remain constant, then output will increase. Keynesian models of economic activity also include a multiplier effect; that is, output changes by some multiple of the increase or decrease in spending that caused the change. If the fiscal multiplier is greater than one, then a one dollar increase in government spending would result in an increase in output greater than one dollar.

Stabilizing the Economy

No policy prescriptions follow from these three tenets alone. What distinguishes Keynesians from other economists is their belief in activist policies to reduce the amplitude of the business cycle, which theyrank among the most important of all economic problems.

Rather than seeing unbalanced government budgets as wrong, Keynes advocated so-called *countercyclical fiscal policies* that act against the direction of the business cycle. For example, Keynesian economists would advocate deficit spending on labour-intensive infrastructure projects to stimulate employment and stabilize wages during economic downturns. They would raise taxes to cool the economy and prevent inflation when there is abundant demand-side growth. Monetary policy could also be used to stimulate the economy—for example, by reducing interest rates to encourage investment. The exception occurs during a liquidity trap, when increases in the money stock fail to lower interest rates and, therefore, do not boost output and employment.

Keynes argued that governments should solve problems in the short run rather than wait for market forces to fix things over the long run, because, as he wrote, 'In the long run, we are all dead.' This does not mean that Keynesians advocate adjusting policies every few months to keep the economy at full employment. In fact, they believe that governments cannot know enough to fine-tune successfully.

Keynesianism Evolves

Even though his ideas were widely accepted while Keynes was alive, they were also scrutinized and contested by several contemporary thinkers. Particularly noteworthy

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were his arguments with the Austrian School of Economics, whose adherents believed that recessions and booms are a part of the natural order and that government intervention only worsens the recovery process.

Keynesian economics dominated economic theory and policy after World War II until the 1970s, when many advanced economies suffered both inflation and slow growth, a condition dubbed 'stagflation'. Keynesian theory's popularity waned then because it had no appropriate policy response for stagflation. Monetarist economists doubted the ability of governments to regulate the business cycle with fiscal policy and argued that judicious use of monetary policy (essentially controlling the supply of money to affect interest rates) could alleviate the crisis (see 'What Is Monetarism?' in the March 2014 *F&D*). Members of the monetarist school also maintained that money can have an effect on output in the short run but believed that in the long run, expansionary monetary policyleads to inflation only. Keynesian economists largely adopted these critiques, adding to the original theory a better integration of the short and the long run and an understanding of the long-run neutrality of money—the idea that a change in the stock of money affects only nominal variables in the economy, such as prices and wages, and has no effect on real variables, like employment and output.

Both Keynesians and monetarists came under scrutiny with the rise of the new classical school during the mid-1970s. The new classical school asserted that policymakers are ineffective because individual market participants can anticipate the changes from a policy and act in advance to counteract them. A new generation of Keynesians that arose in the 1970s and 1980s argued that even though individuals can anticipate correctly, aggregate markets may not clear instantaneously; therefore, fiscal policy can still be effective in the short run.

The global financial crisis of 2007–08 caused a resurgence in Keynesian thought. It was the theoretical underpinnings of economic policies in response to the crisis by many governments, including in the United States and the United Kingdom. As the global recession was unfurling in late 2008, Harvard professor N. Gregory Mankiw wrote in the *New York Times*, 'If you were going to turn to only one economist to understand the problems facing the economy, there is little doubt that the economist would be John Maynard Keynes. Although Keynes died more than a half-century ago, his diagnosis of recessions and depressions remains the foundation of modern macroeconomics. Keynes wrote, "Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slave of some defunct economist." In 2008, no defunct economist is more prominent than Keynes himself.'

Check Your Progress

1. What were the topics that were important in modern macroeconomic theory in classical economics?
2. What were Alfred Marshall's chief concerns?
3. Name the base of Keynesian macroeconomics.

But the 2007–08 crisis also showed that Keynesian theory had to better include the role of the financial system. Keynesian economists are rectifying that omission by integrating the real and financial sectors of the economy.

2.3 WAGNER'S LAW OF INCREASING STATE ACTIVITIES

Adolph Wagner (1835–1917), a German economist, derived his famous *Law of Increasing State Activities* primarily from historical facts of Germany. Wagner claimed that every government (whether national or sub-national) has an inherent tendency to expand its activities (and therefore, public expenditure), both intensively and extensively, such that the government sector tends to grow faster than the economy as a whole. From the

original version of this theory, it is not clear whether Wagner was talking of an increase in (a) absolute level of public expenditure, (b) the ratio of government expenditure to GNP, or (c) proportion of public sector in the total economy. Musgrave believes that Wagner was thinking of (c) above. F. S. Nitti not only supported Wagner's thesis but also concluded with empirical evidence that it was equally applicable to several other governments which differed widely from each other. All kinds of governments, irrespective of their level (that is, whether national or sub-national), intentions (peace loving or belligerent), and size, etc., had exhibited the same tendency of increasing their public expenditure.

Wagner's Law was more of an empirical investigation than a theoretical one. *It did not reveal the inner compulsions under which a government has to increase its activities and public expenditure as time passes.* It was applicable only in the case of a modern *progressive* government which was interested in expanding public sector of the economy for its overall benefit. This general tendency of expanding State activities had a definite long term trend, though in the short run, financial difficulties and other hurdles could come in its way. 'But in the long run the desire for development of a progressive people will always overcome these financial difficulties.'[5]

Thus, Wagner was emphasising a long term tendency rather than short term changes in public expenditure. Moreover, he was not interested in the mechanism of increase in public expenditure. Since his study was based on the historical facts, the precise quantitative relationship between the extent of increase in public expenditure and time taken by it was not expressed in any logical or functional manner. His contention that public expenditure had been increasing over time, could not be used to extrapolate its future rate of growth. Actually, it is consistent with Wagner's law to State that, in future, the State expenditure would increase at a rate slower than the national income though, factually speaking, it had increased at a faster rate in the past. Thus, in the initial stages of economic growth, the State finds that it has to expand its activities quite fast in several fields like education, health, civic amenities, transport, communications, and so on. But when the initial kick is no longer needed, then the increase in State activities may be slowed down.

2.3.1 Extending Wagner's Law

Several reasons, as elaborated by various authors, can be advanced for this inherent long-term tendency recorded in history.

Intensification of Traditional Functions

Over time, traditional functions of the State, including defence and administrative ones, have acquired a greater depth. Correspondingly, need has also arisen to manage the entire government machinery by professional experts supported by expensive equipment, etc. All this has added to the budgetary needs of the government.

Extended Coverage of Government Activities

Modern societies are becoming increasingly complex and demanding on various counts. They are facing ever new problems which need to be tackled by the State including hitherto insufficiently acknowledged market failures. These days, most modern governments aim at maximizing aggregate social welfare by a judicious combination of the advantages of both—market mechanism and government regulations, like subsidies and old age pensions. Ensuring adequate provision of merit goods and infrastructure

facilities has also gained a high priority. The upshot of the argument is that, even with the recognition of the merits of a free market mechanism, the sphere of State activities is registering an ongoing expansion.

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Public Goods

These days, in contrast with the tenets of *laissez-faire* philosophy, the prevalent opinion is that the state should provide and expand the volume and variety of public goods.

DUP, X-inefficiency, Baumol's Disease and Productivity Lag

These concepts, though not identical, are closely related to each other and add to government's expenditure without a corresponding addition to the contribution of government services.

1. Rent and DUP

Rent is an excess of the earnings of the owner of a resource over its opportunity cost. Anne Krueger introduced this term in 1974. This was followed byan explosion of literature on this phenomenon and Jagdish Bhagwati coined the term 'directly unproductive profit-seeking (DUP) activities' in 1982. This concept embraces a wide variety of activities including the rent seeking ones considered by Krueger. It bears reiteration that 'rent' represents an income in excess of the one which would be determined by free competitive forces after allowing for adjustment process. Conditions for rent seeking activities are created by manipulation of demand and/or supply forces by various means including acquisition of some monopoly powers, lobbying for licences and permits, gaining special privileges, legislative measures, creation and promotion of vested interests, utilizing resources for evading government regulation and so on. It is obvious that resources used in promoting rent seeking activities get wasted from national point of view. DUP redistribute existing GDP in favour of the decision makers or some other sections being favoured by them. In addition, the DUP may have the spill over effects of even reducing GDP.

It is now realized that the phenomenon of DUP is widely prevalent in government circles and public sector undertakings, particularly in the developing countries which usually suffer from weak administration and well entrenched vested interests. The decision makers are tempted to take advantage of this situation and promote their own interests and, generally, they also get sufficient opportunities to do so. By implication, this inflates the expenditure side of the government budget without commensurate addition to either the economy's productivity or its GDP.

2. X-inefficiency

The concept of X-inefficiency was introduced by Harvey Leibenstein in 1966. This term refers to an inefficient use of productive resources. It is the difference between efficient behaviour of a firm assumed by or implied by economic theory and its observed behaviour. In private sector, one reason for its existence may be the existence of some monopolistic elements or irrational preferences by the purchasers. Both are very common in practice. In government activities, X-inefficiency is rooted in several inherent causes of its very functioning and are well known as 'government failures'. These causes include overstaffing, bureaucratic delays, rigid rules and regulations, near absence of an effective system of reward and punishment, and so on. Consequently, a portion of public expenditure

goes waste. And the government has to incur additional expenditure for achieving the same result.

3. Baumol's Cost Disease

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This concept, also known as Baumol's Disease, and Baumol's Effect, was introduced by William J. Baumol and William G. Bowen in 1960s. It refers to the phenomenon of wage incomes being higher than the productivity of the wage earners. This phenomenon is also widely prevalent in government circles and public sector undertakings because of several reasons like absence of a sense of self-duty and ineffective implementation of the principle of reward and punishment. Government functioning is guided by audit-oriented rules and procedural delays. The functionaries of state are not rewarded for their performance, and they are not penalized for delays, inefficiency and wrong decisions so long as they do not violate relevant rules and procedures. The strength of the staff is also determined by rigid rules resulting in a slow and insufficient response to the changing requirements. In other words, the government machinery works inefficiently and per unit cost of providing state services is higher than what it should be. Similarly, Allan Peacock introduced the concept of 'productivity lag.' He also emphasized the inherent feature of low productivity in the state sector which result in cost-overruns.

Additional Factors

Empirical and theoretical studies have identified several additional factors (some of them closely associated with the ones described above) which play a major role in the growth of state activities and its expenditure.

- Many societies are experiencing a *growing population* which becomes a major contributory factor in the growth of public expenditure. The scale of state services has to increase to keep pace with population growth, including, for example, more schools, hospitals, and police, etc.
- Most countries have registered *growing urbanization*. Existing cities grow and new ones come up. Urbanization entails a much larger per capita expenditure on civic amenities. It necessitates a much larger supply of incidental services like those relating to traffic, roads, and so on.
- Prices have a secular tendency to go up. This also adds to public expenditure even if the scale of state services remains unchanged.
- The size and nature of public services necessitates an *ever-increasing specialization*. The quality of the services necessitates an ongoing improvement, both on account of historical evolution and circumstantial compulsions. Better quality services and higher qualified administrators, technicians etc., imply a higher cost of providing public services. Also, the government has to purchase a number of goods and services for its own maintenance. With rising prices, expenditure on them also goes up.
- A modern government considers it a part of its duty to *protect the economy and society from the 'failures' of market mechanism.* Accordingly, it adopts anti-cyclical and other regulatory measures. Efforts are made to reduce the income and wealth inequalities and bring about social and economic justice which, in turn, add to public expenditure.

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- Modern governments have shown a tendency to run into debt and this leads to a substantial (sometimes even unsustainable) increase in public expenditure in the form of *increasing cost of debt servicing* and repayment of the loans.
- Popularity of the *philosophy of planning and economic growth* as also increasing government activities in the areas of capital accumulation and economic growth have also contributed to the growth of public sector.
- Musgrave and Musgrave emphasize a *growing complementarity between public and private consumer and capital goods* so that with an increase in per capita income, demand for public services also increases with a corresponding growth in public expenditure.
- There is an inherent tendency of *vested interests* to gain strength and demand an increase in public expenditure for their own benefit. For this reason, a variety of *subsidies* and other *populist steps* inflate the public budget.
- It is claimed that government *bureaucracy has an inherent tendency to expand* irrespective of the size and nature of public services provided by it.
- At the same time, there is a myth that the individuals can voluntarily get together to resolve market deficiencies without government intervention. It is known as Coase Fallacy. This myth is exposed by the Fundamental Non Decentralizability Theorem expounded by B. C. Greenwald and J. Stiglitz.

Wagner's model has an important analytical limitation which can be removed in an expanded version. Agovernment is not a monolithic entity. It comprises a number of organs and associated institutions. Households and business units in the private sector also do not observe government activities passively. Instead, they respond to them more actively. Thus, government decision-making has become a complex phenomenon and has multifarious tendencies to increase public expenditure.

Wagner Squared

Buchanan and Tullock, in the context of US experience, have viewed Wagner's theory in terms of increasing discrepancy between growth of government expenditure and government output and termed the phenomenon as 'Wagner Squared'. They base their argument on two facts.

First, in contrast with the situation prevailing in the private sector, expenditure on civil servants grows faster than the corresponding increase in their output.

Second, with increasing social security and other measures, the proportion of population receiving transfer payments from authorities keeps increasing. This way, public expenditure increases both in absolute terms and as a proportion of national income. It may be noted that even if the expenditure on civil services as a proportion of expenditure on employees in the private sector does not increase, and even if the proportion of population receiving transfer payments remains stable, the Wagner Squared hypothesis would hold. The major limitation of this hypothesis is that output of public servants cannot be measured with any degree of accuracy.

Alan Tait Peacock does not agree with this explanation of Buchanan and Tullock. He says that a typical individual does not relate his tax payments with the receipt of government services. He considers his tax liabilities as they are and strives for additional public services; that is, he fights for additional opportunities for milking government services and not for reducing taxes. The politicians, to win their votes, try to expand

government services and therefore impose more taxes. The government expenditure keeps on increasing without any reference to productivity/cost ratio of services provided by it.

Access to Non-tax Resources

We may add that modern governments have found new weapons whereby to increase their expenditure even without collecting more taxes. They now own *public undertakings* which can be a source of revenue to them. But more important than that is *their capacity and willingness to resort to deficit financing.* Even in advanced countries, deficit financing has become a common occurrence. The public opinion is not strong enough to check this sort of policy even though it has disastrous inflationary effects.

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2.4 EFFECTS OF PUBLIC EXPENDITURE

A meaningful discussion covering public expenditure should start with the fact that the government sector is an integral part of the economy with inter-sectoral input-output relationships and mutual interdependence. It must also take into account the basic differences between the government and non-government sectors. Thus, while the private sector is guided by self-interest and the market mechanism, the government sector may ignore commercial objectives and may also be used by the authorities for pushing the private sector of the economy along certain lines. All these facts have a deep bearing upon the likely effects of public expenditure, which are frequently not easy to assess and analyze.

2.4.1 Public Expenditure and Economic Stabilization

It is a well-known fact that the market forces by themselves leave much to be desired in the field of economic results. The more advanced and free the market mechanism, the more prone is the economy to fluctuations in income, employment, and prices. It is for this reason that with the development of capitalism, free enterprise economies came to experience ever stronger trade cycles. Accordingly, the need to use some effective anti-cyclical measures gained universal acceptance—more so since the havoc caused by the Great Depression of the 1930s. Keynesian diagnosis of the basic cause of the ills of a developed market economy was the deficiency of effective demand which was caused by a low marginal propensity to consume coupled with a low marginal efficiency of investment. He, therefore, advocated a continuous injection of additional purchasing power in the market through stimulation of investment and consumption activities and through direct public investment. This direct investment was a part of the public expenditure and was meant to add to the effective demand in the market and generate a high-value multiplier by distributing income to those sections of the population which had a high marginal propensity to consume. It was also claimed that the addition to demand by such sections would stimulate investment activity and further add to demand flows. Keynesian prescription was basically directed towards curing a State of depression— but the logic of the argument can also be extended to that of curing an inflationary situation. To put it differently, Keynesian policy prescription can be converted into a scheme of compensatory finance —that is, counterbalancing the deficiency or excess of demand by the private sector of the economy. During depression, the State was expected to increase total spending in the economy. And this could be done, if need be, through deficit financing. Public borrowings, to the extent they came out of savings

Check Your Progress

4. From where did Wagner derive his famous Law of Increasing State Activities?
5. Who introduced the term 'rent' and when?
6. State the major limitation of Wagner Squared hypothesis.

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of the people, would help in the stimulation of overall demand when they were spent. This would be more so when the savings of the people were not finding an investment outlet, due to an all-round deficiency of demand.

Similarly, if deficit financing was being met through creation of additional money, the stimulating effect of additional public expenditure would again be felt. In either case, there would be a net increase in total expenditure and demand flows in the economy. During a boom, on the other hand, the need is to curb excess demand. This may be done through reducing public expenditure while maintaining the same amount of taxation and/ or borrowings. Here, taxation would drain away some of the purchasing power from the hands of the people and public borrowings would in the same way cut into market investment (since market savings are not likely to go uninvested on account of good investment opportunities). Thus, curtailing of public expenditure would restrain the inflationary pressures.

It must be remembered that the use of public expenditure as an anti-cyclical weapon implies the existence of a well-knit and sensitive market mechanism where, through the free working of the input-output relationships between different industries, any change starting in one industry spreads to the rest of the economy. It is necessary that such spreading out of effects should be even enough and without undue time lags. And if a depression is to be cured through stepping up of demand, then there must be adequate unutilized excess capacity in the economy. If these assumptions are satisfied, then the authorities have to concern themselves only with the aggregate demand and not with the particular directions in which it is flowing, since through the interaction between demand and supply flows, an automatic adjustment takes place. In a market, where there are technical and other rigidities, the effect created in one sector may not evenly spread to the others. It must be noted that such rigidities are not absent even in developed countries. As a result, under such circumstances, public expenditure no longer remains a simple and easy tool.

The authorities have to regulate not only the total magnitude of demand in the economy, they also have to ensure that the subdivisions of the demand flows match the supply flows. Public expenditure as an anti-cyclical tool will have to be devised in a detailed manner. If this care is not taken, and if the authorities use public expenditure just to stimulate demand in general, then such a stimulating effect will be felt only for certain items while many other industries and areas would remain unaffected, or would be affected only partially. Actually, it is quite possible that while some sectors of the economy continue suffering from deficiency of demand, some others might be groaning under inflationary pressures on account of too much demand. Similarly, it is also possible that when the government reduces its expenditure to curtail the over-all demand, the effect is more or less concentrated in the industries for which the government reduces the expenditure directly.

As is well-known, an underdeveloped country suffers from far greater rigidities than do the developed countries. Shortages of particular inputs are common. There are gaps in the form of absence of certain industries or adequate productive capacity therein. Various kinds of institutional and legal restrictions prevent a proper and quick market response on the part of different sectors of the economy; and it may be the case even with those sectors to which public expenditure is applied directly. As a result the problem of bringing about economic stability is far more complex in this case.

Another factor which contributes to the complexity of the problem is the fact that an underdeveloped economy is having, generally speaking, inelastic demand for essential

maintenance imports while demand for its exports is quite weak. The result is that if the world prices for its exports fall, it is forced to distress sales; while if its import prices increase, its cost price level is pushed up. Ordinarily an underdeveloped country does not have much defence against this type of instability. Public expenditure cannot remedy the situation to a sufficient degree. Normally, through export and import duties, it should be possible to bring about desired changes in exports and imports; but under unfavourable conditions, this is generally not effective enough. And for some countries, recurring balance of payments problems add to their difficulties.

We may say that in underdeveloped countries, public expenditure as a general weapon against economic instability has only a limited use; a very detailed programme has to be worked out to meet the specific problems on hand and even then public expenditure alone may not be adequate to overcome the hurdles. Acareful and judicious combination of the import and export subsidies, duties and other steps has to be used for achieving effective results.

2.4.2 Public Expenditure and Production

Public expenditure can help the economy in numerous ways in attaining higher levels of production and growth. The ways in which such effects might be brought about are obviously interrelated. The analysis of these effects can be taken up separately in the context of developed and underdeveloped economies.

Let us first take up the case of a developed market economy. Such an economy has enough flexibility but may be suffering from a deficiency of effective demand. Public expenditure can add to the effective demand directly and thus generate conditions favourable for the market forces to push up production. Actually such public investment need not be productive in the sense of adding to the supply side of the market also. This public investment can just be a means of disbursing purchasing power to those who would spend the same and add to the effective demand.

But the technique of increasing production through increasing demand becomes ineffective once the level of full employment is reached. Money income goes up but real income does not increase correspondingly because real income depends upon the use of real resources. If, therefore, demand is pushed beyond full employment, it will only add to the inflationary pressures. It may be noted further that the public expenditure may not be able to push up production proportionately because of various rigidities from which even a developed economy is likely to suffer. For example, some industries may not have unutilized excess capacity when demand goes up. In some industries, monopolistic practices may be in vogue and there can be strong militant trade unions. Under different technical and other types of rigidities, the economy may not be able to respond fully to increased demand. The result is likely to be a partial increase in production when demand increases through the use of public expenditure and the results can be quite inflationary beyond a limit. Once we recognize the rigidities from which a developed economy may be suffering and the corresponding lack of complete inter-flow of demand between its various sectors, the co-existence of inflation and unemployment cannot be ruled out. In such a case the authorities cannot be indifferent as regards the manner in which public expenditure generates additional demand in the economy. Specific details of public expenditure would have to be decided so as to achieve selective additions to demand along those lines which suffer from shortage of effective demand.

The case is a different one with underdeveloped economies. Such economies are characterized by a low level of saving and investment activity. This deficiency, again,

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may be remedied by stimulating private saving and investment, or through direct public saving and investment, or both. Thus, in underdeveloped countries, there is a shortage of social overheads, skilled labour, capital equipment and machinery. Anumber of important and basic industries either do not exist or need to the expanded. Public expenditure can be directly used to create and maintain social overheads. It can also be used to create human skills through education and training. Acountry like India suffers from the problem of regional disparities. Various tax concessions and credit facilities can be provided for setting up industries in these areas. Public expenditure can be used to provide necessary economic infrastructure for the development of selected economic activities and can be used to give subsidies for increasing their profitability. Thus, the authorities can strengthen the process of capital accumulation. To the extent this capital formation is financed through foreign aid, the process of economic growth is accelerated.

In this process of accelerating capital accumulation, the authorities have to take a few precautions so as to maximize the benefits of public expenditure and to avoid the possible harmful incidental effects.

Several investment projects have long gestation periods, that is, it takes a long time before the commencement of output. Similarly, some other forms of public expenditure (such as on education) exert only long-term beneficial effects on production. But there is an addition to money income right from the beginning. In the short run, therefore, such public expenditure generates inflationary pressures. Hence, care must be taken to ensure that inflationary pressures remain within manageable limits.

A sizeable portion of public expenditure is wasted due to faulty planning and execution. This must be avoided.

On account of inherent scarcity of productive resources, care must be taken to determine appropriate investment priorities and stick to them. A proper cost-benefit study should be taken up for each project as also its relationship with other industries in terms of input-output coefficients. Emphasis must be laid on industries to which, for various economic and social reasons, a high priority is accorded and which satisfy the cost-benefit criteria.

Creation of additional productive assets is meaningful only if adequate public expenditure is devoted to their maintenance and operation.

Public expenditure is known for its sub-optimal output. In the very nature of things, it is not possible to fully remedy this situation, but efforts should be made to minimize the wastage of public expenditure.

The authorities should carefully allocate public expenditure over various projects and schemes meant to stimulate private investment. An underdeveloped economy has some untapped resources, but the extent to which they can be utilized in the near future and the extent to which they can be shifted from one use to the other faces several constraints. Accordingly, the size and composition of public expenditure are closely linked with the way it is financed. Resorting to printing press or borrowing from the central bank of the country will add to the aggregate demand in the country. Such a course, therefore, has to be kept under observation for its possible inflationary effects. In contrast, financing of public expenditure through market borrowings or taxation may drain the private sector of the corresponding investible resources, that is, it may 'crowd out' the private investment. Therefore, the net effect of public expenditure depends upon the uses to which these funds were being put by the private sector before their acquisition by the authorities, and the uses to which they are put by the authorities after their acquisition. A detailed analysis of the flow of funds and the changes therein on account

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of all these public policies must be made on an ongoing basis in order to achieve the best possible results.

An increase in the rate of investment undoubtedly helps in accelerating the rate of economic growth. However, all additional investment need not be in the form of direct public investment only. Public expenditure may also be used for helping private investment and production through a pursuit of policies which reduce the cost of production, or push up demand or remove particular shortages and bottlenecks. Creation and maintenance of social overheads lead to an all-round reduction in cost of production and improvement in efficiency. This, therefore, increases profitability and production. Also social overheads bring different regions and sectors of an economy in closer contact with each other and thereby stimulate the process of economic growth. Also public investment can go directly into the development of basic and key industries, power, irrigation and mines. Through these steps, the economy can add to its infrastructure and thus provide a firm basis for growth.

Public expenditure can be used to create demand for various products, and thus stimulate private production. Apolicy of purchase preference in favour of domestically produced goods and services helps domestic enterprise and employment. However, it is noteworthy that international commitments such as towards WTO can come in the way of a policy of purchase preferences.

Public sector investment can be specifically directed towards creation of specified supplies and facilities, which form important and necessary inputs for other industries. Imports of essential raw materials can be arranged and special labour skills can be developed. To put it differently, public expenditure can be utilized as a means to remove numerous shortages and bottlenecks in the way of production. Public expenditure can be effectively used in reducing regional disparities also. Strategies industries can be subsidized and otherwise helped through loans, if they are established in specified regions. In the same way, a larger proportion of public expenditure on social overheads can be devoted to these areas. Education and training facilities can also be provided as a further aid in reducing regional disparities.

Research and development are important and helpful activities which must be accorded a high priority. New, effective and cheap methods of production can be found whereby local resources are used and a saving in imports and foreign exchange is affected. New products can be invented which will help the economy in its various productive activities. In these diverse ways, the economy can be helped in effecting a reallocation of its resources and in the process of economic growth.

2.4.3 Public Expenditure and Economic Growth

The foregoing discussion comprises a substantial portion of the issue of economic growth as well because, in the ultimate analysis, a sustained increase in the level of output and productive capacity is a prerequisite of economic growth. In a developed country, through economic stabilization, stimulation of investment activity and so on, public expenditure can be expected to sustain a long term growth rate. In an underdeveloped country, public expenditure has an additional task of helping in reducing regional disparities, developing social overheads, and creation of infrastructure of economic growth in the form of transport and communication facilities, education and training, growth of capital goods industries, basic and key industries, research and development and so on. An appropriate expenditure policy is also needed for stimulating saving and capital accumulation.

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One way in which public expenditure is expected to affect the pace of economic growth is the will and capacity of the people to work, save and invest. However, its actual contribution largely depends upon the precise form and magnitude of public expenditure and accompanying circumstances. For example, public expenditure may itself be directed into specified investments or it may be used for guiding allocation of investible resources of the private sector. But measures relating to public expenditure alone cannot guarantee an increase in the entire economy's rate of investment. That would finally depend upon the will and capacity of the people to work, save and invest. In addition, economic growth adds to aggregate social welfare if differences between social and private marginal cost on the one hand and between social and private marginal productivity on the other are narrowed down. To this end, public expenditure may be used for a judiciously devised multi-objective system of subsidies.

It must be recognized, however, that public expenditure policy of the government constitutes only a part of its overall economic policy. Therefore, it needs to be ensured that different components of its policy are well coordinated and do not work at cross purposes.

2.4.4 Public Expenditure and Distribution

A significant outcome of an unregulated market mechanism is the inequalities of income and wealth which, with the institutions of private property and inheritance, widen with the passage of time. Furthermore, such income and wealth disparities not only spell a social and economic injustice, they also distort production and employment patterns.

Narrower inequalities of income and wealth, it may be claimed, contribute towards economic stability. It is generally recognized that marginal propensity to consume falls as income rises. As a result during the expansionary phase of a trade cycle, consumption demand tends to lag behind and causes a check on further expansion of demand in the economy. Without such a check, the upward movement of the trade cycle might develop into a disruptive inflation. Similarly, during a depression, consumption refuses to dip below a certain level and, as a result, the economy is provided a firm demand base. Furthermore, economic stability is helpful to economic growth because private investment is affected, amongst other things, by safety and expected rates of return. With economic stability and expectation thereof, the risk of loss is reduced and this has, therefore, a healthy effect on the investment climate.

Welfare considerations also favour an equitable distribution of income and wealth. The purpose of an economic policy should be to contribute towards maximizing aggregate social benefits. Though we cannot prove objectively that marginal utility of income falls as income increases, common sense supports this hypothesis. That being so, it follows that any movement towards equitable distribution of income and wealth would increase the aggregate satisfaction in the community. Lerner has shown that even if we do not know the extent to which marginal utility of income falls with a rise in income and even if we cannot have inter-personal comparisons of utility, still a shift towards equality would probably add to the aggregate satisfaction of the community.

Public expenditure policy may be formulated for improving distributive justice with special emphasis on components meant to help the poorer sections of the society. A number of welfare measures like free education, health, drinking water and other facilities can be accorded a high priority. Numerous social security schemes can be adopted whereby people are entitled to old-age pensions, unemployment relief, sickness allowance and so on.Articles of common consumption like food can be subsidized, and the production

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of those which are in short supply can be taken up in the public sector. Left to market mechanism, the supply of 'merit goods' is likely to be insufficient. Public expenditure, through direct purchases, public production or subsidies can ensure that their supply is augmented to the desired extent. Similarly public expenditure, through appropriate subsidies and other 'purchase and stores' policycan encourage labour-intensive techniques of production which reduce unemployment and improve income distribution.

However, while proceeding with the programme of bringing about income and wealth equalities, certain aspects of possible interaction between distributive justice and other dimensions of the economy must be kept in mind. To begin with, poorer people may not be able to enjoy fully the additional income because of ignorance. But this argument is applicable only if suddenly large amounts of income start flowing to the poorer sections of the community. In an underdeveloped country, this argument does not apply because it normally lacks adequate funds to significantly improve the lot of everyone. Through income redistribution, the poor masses can only feel a marginal relief. Even in the case of adequate funds, the desirability of reducing inequalities would not be disproved. It would only point towards the need for going slow, so that the poorer sections also get accustomed to higher standards of living.

The impact of redistribution on the economy's will and capacity to work, save and invest is inconclusive. In a poor country, where the need to reduce inequalities is the greatest, saving potential is only with the higher income groups. With a big shift towards equalities, such a saving potential is substantially reduced especially because the poorer sections of the community are bound to consume away a major portion of their newly acquired incomes. The objective of economic equality, therefore, comes into conflict with that of economic growth. In other words, both will and capacity to save on the part of the members of the society are likely to suffer when a shift towards income and wealth equalities is made. An underdeveloped country, therefore, is faced with a difficult choice.

The distributive effects of public expenditure must be viewed in the context of its method of financing. For example, if it is financed through additional tax revenue and the tax system of the country is regressive, it would militate against the distributive effects of public expenditure. Similarly, if public expenditure is financed through deficit financing, or through such borrowings as are inflationary in character, inequalities would widen. However, deficit financing to a limited extent need not generate inflationary pressures. Similarly, public borrowings out of genuine savings of the economy are expected to be only mildly inflationary. While the long-term solution of its economic difficulties lies only in economic growth, the problems of income distribution also cannot be postponed indefinitely. A via media, therefore, has to be worked out wherein both these objectives are pursued concurrently in a balanced manner. And to the extent the hitherto unexploited resources can be tapped, or if foreign aid is available, the task of pursuing both the goals (of equitable distribution and growth) becomes less difficult.

Check Your Progress

7. Why did free enterprise economies experience stronger trade cycles with the development of capitalism?
8. Why is there a shortage of social overheads, skilled labour, capital equipment and machinery in undeveloped countries?
9. What is the additional functional or role played by public expenditure in an underdeveloped country?
10. How can public expenditure encourage labour-intensive techniques of production?

2.5 SUMMARY

In this unit, you have learnt that:

- The origin of macroeconomic theory can be traced to the writings of the mercantilists and the physiocrats well before the development of the classical macroeconomic theory.

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- The classicists had their own views on the theory of general price level distinguished from the theory of relative prices. In classical economics, the quantity theory of money, theory of economic growth and discussion about the cyclical fluctuations—topics which are important in modern macroeconomic theory—occupied significant place.
- The bulk of the traditional economic theory until the publication of Keynes' great work entitled *The General Theory of Employment, Interest and Money* published in 1936 was microeconomics.
- Led by Alfred Marshall, the neoclassical economists implicitly made the conclusions derived from the Say's Law of Markets a premise of their analysis of value and distribution.
- Alfred Marshall's chief concern was with the explanation of determination of the commodity and factor prices, nevertheless he also discussed the relationship between the general price level (*P*), the total quantity of money in circulation (*M*), the fraction of their total money income which people hold in the form of cash balances (*k*) and the amount of total real output (*O*).
- Keynesian macroeconomics (also called the new economics) refers to that body of economic theory whose base is Keynes' book *The General Theory*. The most distinguishing feature of the Keynesian macroeconomics is its neat exposition of how an economy may be in equilibrium at less than full employment level.
- The most important contribution of Keynes' *The General Theory* to the development of macroeconomic theory is the clear and specific formulation of the consumption function.
- Keynes' contribution to the development of macroeconomic theory is essentially an introduction to the Keynesian analysis of income and employment emerging from Keynes' great work entitled *The General Theory of Employment, Interest and Money* published in 1936.
- Adolph Wagner (1835–1917), a German economist, derived his famous *Law of Increasing State Activities* primarily from historical facts of Germany.
- Wagner claimed that every government (whether national or sub-national) has an inherent tendency to expand its activities (and therefore, public expenditure), both intensively and extensively, such that the government sector tends to grow faster than the economy as a whole.
- Wagner's Law was more of an empirical investigation than a theoretical one. It did not reveal the inner compulsions under which a government has to increase its activities and public expenditure as time passes.
- Modern societies are becoming increasingly complex and demanding on various counts. They are facing ever new problems which need to be tackled by the State including hitherto insufficiently acknowledged market failures.
- Rent is an excess of the earnings of the owner of a resource over its opportunity cost. Anne Krueger introduced this term in 1974.
- The concept of X-inefficiency was introduced by Harvey Leibenstein in 1966. This term refers to an inefficient use of productive resources. It is the difference between efficient behaviour of a firm assumed by or implied by economic theory and its observed behaviour.

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- Baumol's cost disease is also known as Baumol's Disease, and Baumol's Effect, was introduced by William J. Baumol and William G. Bowen in 1960s. It refers to the phenomenon of wage incomes being higher than the productivity of the wage earners.
- Buchanan and Tullock, in the context of US experience, have viewed Wagner's theory in terms of increasing discrepancy between growth of government expenditure and government output and termed the phenomenon as 'Wagner Squared'.
- We may add that modern governments have found new weapons whereby to increase their expenditure even without collecting more taxes. They now own public undertakings which can be a source of revenue to them. But more important than that is their capacity and willingness to resort to deficit financing.
- It is a well-known fact that the market forces by themselves leave much to be desired in the field of economic results. The more advanced and free the market mechanism, the more prone is the economy to fluctuations in income, employment, and prices.
- It must be remembered that the use of public expenditure as an anti-cyclical weapon implies the existence of a well-knit and sensitive market mechanism where, through the free working of the input-output relationships between different industries, any change starting in one industry spreads to the rest of the economy.
- Public expenditure can help the economy in numerous ways in attaining higher levels of production and growth. The ways in which such effects might be brought about are obviously interrelated.
- Underdeveloped economies are characterized by a low level of saving and investment activity. This deficiency, again, may be remedied by stimulating private saving and investment, or through direct public saving and investment, or both. Thus, in underdeveloped countries, there is a shortage of social overheads, skilled labour, capital equipment and machinery.
- One way in which public expenditure is expected to affect the pace of economic growth is the will and capacity of the people to work, save and invest. However, its actual contribution largely depends upon the precise form and magnitude of public expenditure and accompanying circumstances.
- A significant outcome of an unregulated market mechanism is the inequalities of income and wealth which, with the institutions of private property and inheritance, widen with the passage of time. Furthermore, such income and wealth disparities not only spell a social and economic injustice, they also distort production and employment patterns.
- Public expenditure policy may be formulated for improving distributive justice which special emphasis on components meant to help the poorer sections of the society. Anumber of welfare measures like free education, health, drinking water and other facilities can be accorded a high priority.
- Public expenditure through appropriate subsidies and other 'purchase and stores' policy can encourage labour-intensive techniques of production which reduce unemployment and improve income distribution.
- The impact of redistribution on the economy's will and capacity to work, save and invest is inconclusive. In a poor country, where the need to reduce inequalities is the greatest, saving potential is only with the higher income groups.

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- The distributive effects of public expenditure must be viewed in the context of its method of financing. For example, if it is financed through additional tax revenue and the tax system of the country is regressive, it would militate against the distributive effects of public expenditure. Similarly, if public expenditure is financed through deficit financing, or through such borrowings as are inflationary in character, inequalities would widen.

2.6 KEY TERMS

- **Rent:** It is an excess of the earnings of the owner of a resource over its opportunity cost.
- **Compensatory finance:** They are the variation in aggregate public expenditure for counteracting mismatch between aggregate demand and supply flows in the economy.
- **Deficit financing:** It refers to incurring public expenditure in excess of revenue receipts.
- **Gestation period:** It is the time period between the start of an investment project and the start of production flow from it.
- **Marginal efficiency of capital:** It is the estimated rate of return in future on fresh investment.
- **Purchase preferences:** It is a policy of preferring some specific sources of supply over others either by confining to such sources or agreeing to pay a higher price.

2.7 ANSWERS TO 'CHECK YOUR PROGRESS'

1. In classical economics, the quantity theory of money, theory of economic growth and discussion about the cyclical fluctuations—topics which are important in modern macroeconomic theory—occupied significant place.
2. Alfred Marshall's chief concern was with the explanation of determination of the commodity and factor prices, nevertheless he also discussed the relationship between the general price level (P), the total quantity of money in circulation (M), the fraction of their total money income which people hold in the form of cash balances (k) and the amount of total real output (O).
3. Keynesian macroeconomics (also called the new economics) refers to that body of economic theory whose base is Keynes' book *The General Theory*.
4. Adolph Wagner (1835–1917), a German economist, derived his famous *Law of Increasing State Activities* primarily from historical facts of Germany.
5. Rent is an excess of the earnings of the owner of a resource over its opportunity cost. Anne Krueger introduced this term in 1974.
6. The major limitation of Wagner Squared hypothesis is that output of public servants cannot be measured with any degree of accuracy.
7. The more advanced and free the market mechanism, the more prone is the economy to fluctuations in income, employment, and prices. It is for this reason that with the development of capitalism, free enterprise economies came to experience ever stronger trade cycles.

8. Underdeveloped economies are characterized by a low level of saving and investment activity. This deficiency, again, may be remedied by stimulating private saving and investment, or through direct public saving and investment, or both. Thus, in underdeveloped countries, there is a shortage of social overheads, skilled labour, capital equipment and machinery.
9. In an underdeveloped country, public expenditure has an additional task of helping in reducing regional disparities, developing social overheads, and creation of infrastructure of economic growth in the form of transport and communication facilities, education and training, growth of capital goods industries, basic and key industries, research and development and so on.
10. Public expenditure through appropriate subsidies and other 'purchase and stores' policy can encourage labour-intensive techniques of production which reduce unemployment and improve income distribution.

2.8 QUESTIONS AND EXERCISES

Short-Answer Questions

1. State the difference between classical and neoclassical economic theory.
2. State Alfred Marshall's contribution on neoclassical economics.
3. How did Keynes contribute towards the development of macroeconomic theory?
4. Why is Wagner's Law more of an empirical investigation than a theoretical one?
5. Who introduce the concept of X-inefficiency? What does the term mean?
6. Write short notes on:
   (i) Rent and DUP
   (ii) X-inefficiency
   (iii) Baumol's Cost Disease
7. What is the Wagner Squared hypothesis? Who termed this phenomenon?
8. To what extent can public expenditure (including subsidies) address the question of (a) distributive inequalities, and (b) regional disparities?

Long-Answer Questions

1. Describe the classical and neoclassical views on public expenditure.
2. Assess the Keynesian economic theory and Keynes contribution towards the study of economics.
3. What do you understand by Wagner's Law of increasing state activities? What are its main determinants? Is it possible to extrapolate growth in public expenditure? Give reasons for your answer.
4. Critically analyse the effects of public expenditure.
5. 'Public expenditure as a general weapon against economic instability has only a limited use; a very detailed expenditure programme has to be worked out to ensure matching of subdivisions of demand and supply flows; even then public expenditure alone may not be adequate to tackle this problem.' Examine this statement.

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6. Public expenditure is a very helpful policy tool in accelerating rate of economic growth, but it is an imperfect one. Elaborate the positive role of public expenditure and the deficiencies from which it suffers.
7. Highlight prominent reasons for the phenomenon of all pervasive but non-quantifiable effects of public expenditure.
8. Write short and lucid notes on the following:
   (i) Use of public expenditure in promoting economic stability and thus economic growth.
   (ii) Unpredictable impact of public expenditure on the will and capacity to work, save and invest by the public.

2.9 FURTHER READING

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Endnotes

[1] The term 'classical economies' does not refer to the economic thought of any one writer It has to be distilled from the writings of many writers. Karl Marx first used the term 'classical economies' to denote the economic thought of the writers starting from William Petty and ending with David Ricardo and James Stuart Mill in England and from Pierre Boisguilbert to Jean Charles Leonard de Sismondi (1773–1842) in France. According to him, classical economics 'investigated the real relations of production in bourgeois society.' According to John Maynard Keynes, however, by classical economics is meant the economic thought of David Ricardo and his followers, that is to say, the economic thought of those economists who adopted and perfected the theory of Ricardian economics, including (for example) John Stuart Mill, Alfred Marshall, Francis Ysidro Edgeworth and Arthur Cecil Pigou.

[2] Distinction should be made between the 'Economics of John Maynard Keynes' and the 'Keynesian Economics'. While the former refers to the economics exclusively contained in Keynes' book *The General Theory of Employment. Interest and Money*, the latter refers to the economic theory built up on the foundation of *The General Theory*. Consequently, the Keynesian economics refers to the massive structure of economic analysis constructed by the Keynesians following the lead given by John Maynard Keynes. Economists of the eminence of Alvin H Hansen, Abba P Lerner, Paul A. Samuelson, Seymour E Harris, Lawrence R Klein and Dudley Dillard, to mention only a few, have enriched the Keynesian economics by their penetrating analytical contributions.

[3] See Chapters 8, 9 and 10 of *The General Theory*.

[4] Alvin H Hansen, 'The General Theory,' published in Seymour E Harris (ed.), *The New Economics*, 1947. p. 135.

[5] Adolph Wagner, *Finanzwissenschaft*, Leipzig, 3rd ed., part 1, p. 16.

UNIT 3 MAJOR THEORIES OF PUBLIC EXPENDITURE

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Structure

3.0 INTRODUCTION

Historically, public expenditure has recorded a continuous increase over time in almost every country. However, traditional thinking and philosophy did not favour this trend because it rated market mechanism as a better guide for the working of the economy and allocation of its resources. It was argued that each economic unit was the best judge of its own economic interests and the government should not take decisions on behalf of others. Furthermore, while a private economic unit was guided by its own economic interests, the public sector had no such criterion. Accordingly, its efficiency was bound to be very low. Had this philosophy been practised in its entirety, public expenditure would not have grown as rapidly as it actually did. In reality, however, a free market mechanism suffers from several deficiencies and generates several harmful socio-economic effects. A modern state is not expected to be indifferent to these ill-effects. On the theoretical side, this fact has been the source of several versions of socialist and welfare philosophy.

In case of a market economy, voluntaryexchange is discussed as being something we willingly sacrifice to get something else, and this is in totality a human trait and is fully desirable. In 1919, Erik Lindahl put forth a rigorous and formal model of the benefits received from the voluntary exchange theory of public finance. Lindahl uses the example of two tax payers to explain the problem. In this unit, you will get acquainted with the concept of voluntary exchange and the various theories associated with public expenditure.

3.1 UNIT OBJECTIVES

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

- Discuss the voluntary exchange principle with regard to market transactions
- Describe Lindahl's model of voluntary excahnge

- Evaluate Samuelson's model of public goods
- Analyse Musgrave's optimum budget model
- Explain the paradox of voting as observed by Anthony Downs

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3.2 VOLUNTARY EXCHANGE PRINCIPLE AND LINDAHL'S MODEL

The term voluntary exchange refers to the act of sellers and buyers willingly and freely participating in market transactions. Furthermore, the transactions take place in such a manner that leaves the seller and the buyer in a better position after the exchange than they were prior to the exchange.

In case of a market economy, voluntary exchange is discussed as being something we willingly sacrifice to get something else, and this is in totality a human trait and is fully desirable. Only when both parties are satisfied enough to willingly say 'thank you' can it be considered—for the voluntary exchange—to have been pleasing and beneficial for both parties. The exchange need not always be represented by money, it can be a service, or other meaningful transaction which fulfils both the parties' self-interest.

In neoclassical economics, **voluntary exchange** is a very fundamental assumption. In other words, in theorizing about the world, the neoclassical (mainstream) economists make the assumption that there is a presence of voluntary exchange. Further developing upon this assumption, the mainstream economists conclude that it has a huge range of significant results, such as under voluntary exchange there is efficiency of market activity, net positive effects of free trade, and that markets where there is voluntary participation of economic agents are better off. The fact to be noted here is that while making the assumption of voluntary exchange, the mainstream economists have, through their definition, removed the possibility of finding any kind of exploitation. Exploitation was simply an assumption made by the Marxist economists, who were one of the prominent substitutes to neoclassical economists. In this light, we can say that broadly, economics is incapable of objectively testing if exploitation of one party or group by another party really exists. It is argued that, possibly this is one of the major failures of economics.

It has been proved by mainstream economists that voluntary exchanges will be better attracted by economic efficiency rather than by government mandated exchanges. Conversely, there are no theoretical bases for the argument that partially or completely involuntary exchanges are preferable to other arrangements, like government mandates.

There are times when voluntary exchange becomes the very basis for the arguments pertaining to the morality of markets. Libertarians generally opine that there should be both— morality and efficiency—in voluntary exchange for there to exist an argument against government mandates, including many forms of taxation. In markets, morality is in dispute, even in such markets that rarely adhere to true voluntary exchange.

In 1919, Erik Lindahl put forth a rigorous and formal model of the benefits received from the voluntary exchange theory of public finance. Lindahl uses the example of two tax payers to explain the problem. In this model, both the tax payers have the liberty to put forward their preference for the state service that they would like to receive for the tax liability that falls on them. To put it differently, it will be a sort of voluntary exchange taking place between the tax being paid by the tax payers and the state services that

they get in return that is decided, based on the demand schedule or the preference that the tax payer had for the services being provided by the state.

In this proposal, Lindahl has paid no attention to the existing socio-political issue of equitable distribution of income. He has instead, attempted to resolve three problems that though interrelated are by nature fiscal problems. Following are the three problems he took up:

- Determining the total amount of public expenditure and taxes
- Allocation of all the services and goods of the total public expenditure that contribute to the satisfaction of social want
- Allocation of the burden of tax amongst the tax payers

Since all of these decisions are mutually interdependent, hence the decision for them should be taken jointly.

It was suggested by Lindahl that the solution to the problem was much like the process of pricing that exists in the market for joint products. In a market, the pricing of joint products is never based on the cost imputation but is based on the demand existing in the market for the two joint products.

Given below are the five assumptions on which Lindahl has based his model of voluntary exchange.

- The setup of the state is democratic.
- Only a single type of social good is produced.
- Just two tax payers exist and they are referred to as A and B.
- Jointly, the contribution of the two tax payers is sufficient to cover the total cost of the social goods that are supplied.
- The social good is subject to the condition of constant cost.

Based on the above assumptions, Lindahl has shown the simultaneous determination of tax sharing as well as the extent of the provision of the social goods to the two individuals who are the tax payers.

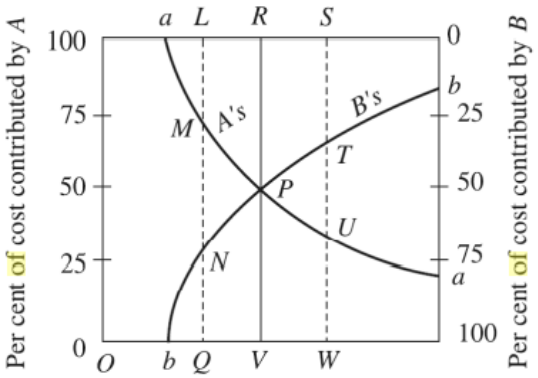

Fig. 3.1 *Lindahl's Model of Social Goods*

In Figure 3.1, the demand curve *bb* represents the demand that *B* has for social goods and the demand curve *aa* represents the demand that *A* has for social goods. These curves are representative of the extent of contribution, in percentage, that the two tax

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payers and the consumers are ready to make for the cost that is incurred in creating a range of output of a social good. There is a diminishing of social good's marginal utility. Therefore, if a social good's *OQ* is given, there will be a willingness of *A* to meet the *QM* percentage (approximately seventy five per cent) while there will be a willingness from *B* to share *LN* percentage (also approximately seventy five per cent). If this is the case, the total collection of tax will surpass the cost of production since the two tax payers are jointly ready to contribute as high as one hundred and fifty per cent of the total cost. Suppose that there needs to be a decrease in the tax so that it will only add up to the real cost of making *QA* amount of social goods available, *A* as well as *B* will want a bigger amount of the social good. Finally, as this process repeats, there will be a point of equilibrium reached and this is represented in the above figure as *P*. At point *P*, the quantity of social good is *OV*. When the quantity of social good stands at *OV*, the two consumers are willing to jointly pay a hundred per cent of the total cost of the supply of social good. The optimum solution is the equilibrium that is attained at *P*, when a correct state of distribution is achieved.

The above figure represents that the correct interaction between the demand curve *aa* and the demand curve *bb* helps obtain *OV* which is the optimum amount of social good. *PR* and *PV* represent the cost's percentage share that is needed to be paid by *B* and *A* respectively as their optimum tax liability for the enjoyment of the social good benefit and is exactly equal to the benefit that they enjoy.

From the above figure, it is quite clear that for any amount which it above the *OV* limit and the combined share that both *A* and *B* bear willingly will not be equal to hundred per cent but will be less. If *OW* is provided, then the willingness to contribute of the two tax payers is represented by *WU* and *ST* and is not as much as hundred per cent of the total cost but is less by *TU*. Therefore, the government cannot supply the amount. So, via the trial and error method, it will be possible to reach *OV* which is the equilibrium amount.

3.2.1 Criticism of Lindahl's Model

Despite all that provided by Lindahl in his model, there has been quite a lot of criticism of the model. Of all his critics, it is Musgrave who has several major points of criticism against what he has proposed. Let us look at his points of criticism one by one.

Foremost, Musgrave has pointed out that the model proposed by Lindahl does not provide the manner in which it will be possible to reach the equilibrium at point *P*. The solution provided by Lindahl seems to be analogous with the solution provided by Antoine Augustin Cournot regarding the duopoly in the value theory. The model of duopoly pricing as suggested by Cournot, holds the assumption that all the sellers take the price of the rival to be a constant and increases his own sales to a point where a competitive supply is attained. This solution cannot be applied to the model proposed by Lindahl.

Then again, if the assumption of the model is changed from two consumers and tax payers to several individuals, every tax payer would then believe that the share that he has or the contribution made by him is having at least some amount of impact on the social good's actual supply. So, there is a possibility that he will keep his preference to himself and not reveal them. It is a known fact that in the minds of the people the provision of social good and taxation seem to be divorced issues.

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The model presented by Lindahl does not account for the effect on the prices of the social goods when the output of the social goods is varied. The model works with the cost conditions remaining constant. Such an assumption is not realistic.

Another criticism of the model suggests that in real life there is hardly any chance that individual tax payers possess of having a preference while paying their taxes. On their behalf, it is the legislative or the executive authority that actually expresses the preference of the individual tax payer. A system such as this will definitely be one that is imperfect.

Further, the theory put forth by Lindahl works on the assumption that an optimum level has already been attained for the distribution of income. This assumption's non-validity is indicative of the fact that from each individual tax payer's demand curve, the society's preferences and needs cannot be represented.

Also, Lindahl's model has its basis on the assumption that it is only a type of taxation that finances the activities of the State. This financing cannot be done by other means like public borrowing and employing a printing press.

As was mentioned earlier, in the model suggested by Lindahl, there is a lot of incentive that individuals have—of hiding the truth about their preferences for public goods from the government official administrating the scheme. If it is not possible for even a single individual to be deprived of the enjoyment of any public good after it has been produced, then individuals will try to contribute the least for the production of the public goods so that they have as much as possible to spend on private goods. There might be some extreme cases where individuals will claim that they have not demanded for public goods and use all of their budget on private good's purchase. Such a strategy is referred to as 'taking a free ride'. In case everyone wants to take a free ride, then the society will not be in a position to make any public goods available.

3.2.2 Mathematical Representation of Lindahl's Model

The assumption is that there are two goods in an economy: The first is a 'public good', and the second is 'everything else'. The price of the public good is represented by P_{public} and that of everything else by P_{else}.

$$\alpha * P_{(public)} / P_{(else)} = MRS_{(persona1)}$$

This is just the usual price ratio/marginal rate of substitution deal, the only change is that we multiply P_{public} by α to allow for the price adjustment to the public good. Similarly, a second person will choose his bundle such that:

$$(1-a) * P_{(public)} / P_{(else)} = MRS_{(person2)}$$

With this, there is both individuals' utility maximizing. It is known that for a competitive equilibrium, the price ratio or the marginal cost ratio has to be equal to the marginal rate of transformation, or

$$MC_{(public)} / MC_{(else)} = [P_{(public)} / P_{(else)}] = MRT$$

3.3 SAMUELSON'S MODEL OF PUBLIC GOODS

Paul Samuelson's first landmark paper was published in the year 1954. It was entitled 'The Pure Theory of Public Expenditure'. It was this paper that actually formalized the public goods concept which he referred to as 'collective consumption goods'. These are

Check Your Progress

1. How is voluntary exchange discussed in case of a market economy?
2. When and who put forth a rigorous and formal model of the benefits received from the voluntary exchange theory?
3. State one criticism of Lindahl's model.

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such goods which are non-rivalrous and non-excludable. The market failure of free-riding was highlighted by Samuelson with the following words: 'it is in the selfish interest of each person to give false signals, to pretend to have less interest in a given collective consumption activity than he really has.' His paper showed that 'no decentralized pricing system can serve to determine optimally these levels of collective consumption'.

Here are some terms that one needs to understand:

- **Excludability:** Ability that producers have for detecting and preventing their products' uncompensating consumptions
- **Rivalry:** Inability of multiple consumers to consume the same good
- **Public good:** Anon-excludable and non-rivalrous good, like national defense

Due to the non-excludable nature of public goods, they become under-produced. In the pricing system, there are no means of ensuring that the consumers reveal their actual demand for the goods that are completely non-excludable, and in effect producers cannot be forced to meet that demand.

Samuelson's **'Samuelson condition'** is a theory of public goods in the field of economics. It represents the condition required by public goods to be efficient. When this condition has been satisfied, it means that more substitution of private goods for public goods and public goods for private goods will only lead to the fall of social utility.

The condition that will occur in an economy that has 'n' number of consumers is as follows:

$$\sum_{i=1}^{n} \mathrm{MRS}_i = \mathrm{MRT}$$

MRS stands for the marginal rate of substitution for individual 1.

MRT represents the marginal rate of transformation of the economy between an arbitrarily selected private good and the public good.

In case the chosen private good happens to be a numeraire good, then the following is how the Samuelson condition will be written:

$$\sum_{i=1}^{n} \mathrm{MB}_i = \mathrm{MC}$$

In the above, MB_i represents marginal benefit accrued to each person by consuming an additional unit of the public good. MC represents the marginal cost that will be accrued for making that good available. That is to say, there should be provision for making public good provided that such goods provide overall benefits to consumers, which is minimum as much as the cost incurred to provide that good. Since the nature of a public good is non-rivalrous, it can be simultaneously enjoyed by several consumers.

The Samuelson condition, if it is written in the way given above, can be easily represented graphically as shown below.

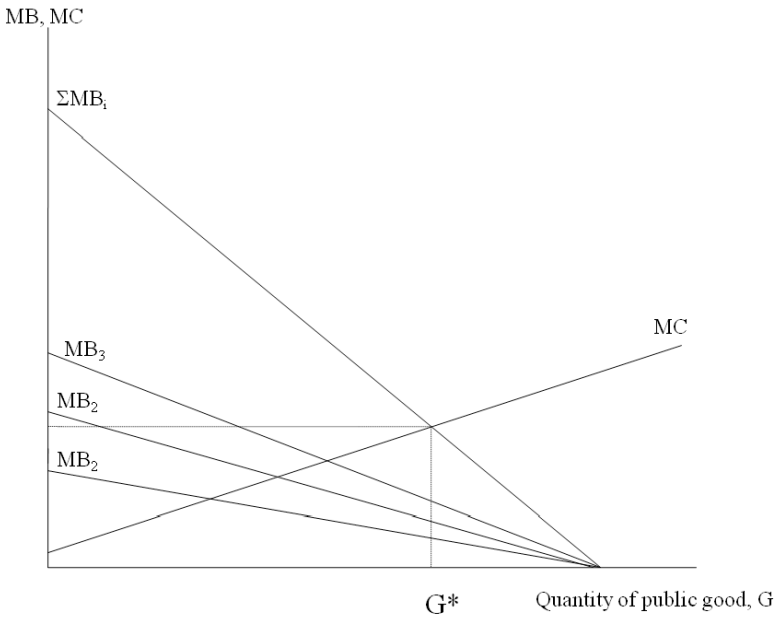

Fig. 3.2 *Supply and Demand Interpretation of Samuelson Condition*

Source: *https://commons.wikimedia.org/wiki/File:Samuelson_condition.png#/media/File:Samuelson_condition.png*

The marginal benefit of every individual consumer is represented by MB_i, and it shows the demand or willingness to pay the marginal benefit that that specific individual has. The total of the marginal benefits is the aggregate willingness that all individuals together have to pay and represents the aggregate demand of all the individuals. If a market is competitive, then the marginal cost represents the supply for public goods.

In this light, it is possible to view the Samuelson condition as being a generalization of concepts of demand and supply from private goods to public ones.

3.4 MUSGRAVE'S OPTIMUM BUDGET MODEL

According to Richard Musgrave, the 'Maximum Social Advantage' principle of Dalton is the 'Maximum Welfare Principle of Budget Determination'.

According to Musgrave, there were two budget policies that had been proposed by Dalton. In one budget policy, he proposed that resources need to be distributed in different directions so that it will equalize the marginal return of satisfaction that accrues for all the various types of expenditure that is made. The other budget policy proposes that it is essential to push the public expenditure to such an extent that the satisfaction that accrues even from the last rupee spent will be equal to the satisfaction which was lost due to the last rupee taken away in the form of tax. Hence, it is important to determine the size of the budget such that it will lead to the society's maximum welfare.

The figure given below is the representation as provided by Musgrave for illustrating the maximum welfare principle for optimum budget determination.

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Check Your Progress

4. Name the paper that formalized the public goods concept of Paul Samuelson.
5. What does Samuelson's 'Samuelson condition' represent?

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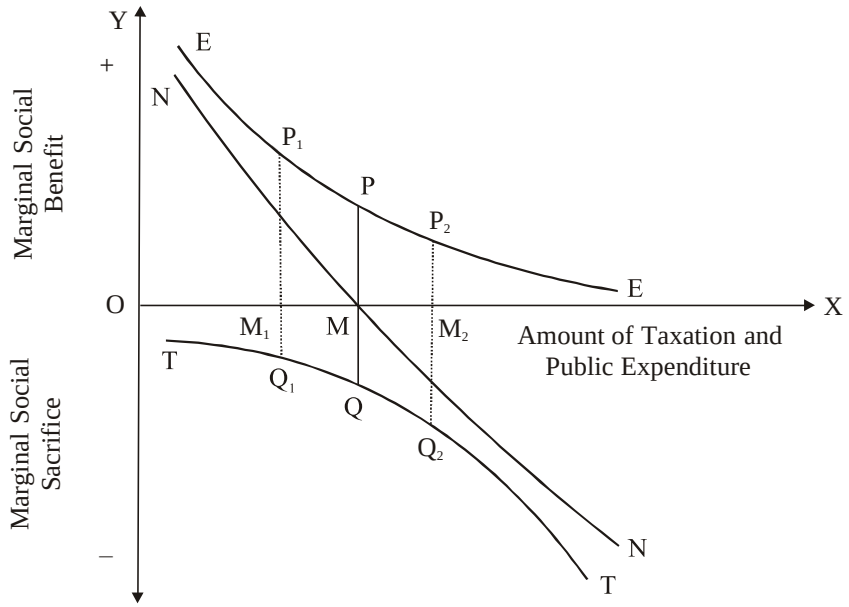

Fig. 3.3 *Musgrave's Representation for Illustrating the Maximum Welfare Principle for Optimum Budget Determination*

In the figure given above, the X-axis represents the 'Amount of Taxation and Public Expenditure', and the Y-axis represents the 'Marginal Social Benefit'(MSB) which is measured in the upward direction and the 'Marginal Social Sacrifice' (MSS) which is measured in the downward direction.

The *EE* curve represents the marginal social benefit that accrues from the successive units of public expenditure that are optimally allocated amongst the various public uses. This curve has a downward slope from left to right since social benefits provide diminishing marginal utility.

the *TT* curve represents the marginal social sacrifice made with each successive unit of taxation that is imposed on the tax payers. It curves upwards from left to right because of the increasing marginal disutility or social sacrifice.

The *NN* curve is used to measure the net benefit obtained from each successive addition made to the public budget in the form of public expenditure as well as taxation. This is obtained by subtracting *TT* from *EE*.

It is at *OM* that the 'Optimum Size of Budget' is deduced. This is the point at which the nil marginal net benefits are obtained. Therefore, both the public expenditure and the amount of taxes must be fixed by the government such that it all equals to *OM*. The point *M* represents the point at which the maximum-sacrifice approach to the determination of taxes is matched by maximum-benefit approach to the allocation of public expenditure. These two specific aspects are brought together in a general theory of budget planning.

It is at point *M* that the optimum size of the budget will be arrived at, since at this point the marginal social benefit which is represented by *MP* is the same as the marginal social sacrifice which is represented by *MQ*. So, *MSB* = *MSS*. Since *MSB* and *MSS* are measured in opposite directions, the marginal net benefit will become nil. In other words: *MSB* – *MSS* = 0. This is the reason why it is at point *M* that the *NN* curve is seen to be cutting the X-axis.

Points that lie before *M*, such as M_1 will represent marginal social benefit shown as M_1P_1 to be higher than marginal social sacrifice shown as M_1Q_1, and in this region we will see that the marginal net benefits are positive. Therefore, it is sensible to raise both—public expenditure and the taxation. Thus, this will create a tendency to advance in the direction of point *M*.

Points that lie after *M*, such as M_2, will represent marginal social sacrifice depicted as M_2Q_2 to be higher than marginal social benefit shown as M_2P_2, and in this region we will see that the marginal net benefits are negative. Therefore, it is sensible to reduce the taxation and consequently also reduce public expenditure. Thus, this will create a tendency to advance in the direction of point *M*. So, at point *M*, *MSB* = *MSS*. In this light, as opined by Richard Abel Musgrave, what will be a budget's optimum size stands at the point at which marginal net benefit becomes equal to zero.

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3.5 PARADOX OF VOTING

The paradox of voting is also referred to as the Downs paradox. According to the paradox, for a voter who is self-interested and rational, the benefit expected from the voting will be lower than the cost incurred to cast that vote. Since the chances of the voter having his vote made the pivotal vote, that is his vote acting as the deciding factor in a tie between candidates, is near to impossible when compared with any realistic estimate of the private individual benefits of the various other possible outcomes, the benefits expected from the voting are lower than the cost incurred for voting. The problem here is that people actually vote and it is a problem for public choice theory which was first observed by Anthony Downs and is therefore also referred to as Downs paradox.

Responses

It has been proven that alternative responses change the hypothesis of egoistic rationality in several different ways. It has been suggested by Brennan and Lomasky (1993) that 'expressive' benefits are derived by voters when they support certain candidates. Nevertheless, it goes to show that contrary to the theory of public choice, the choice for a vote by an individual voter will not likely depict that voter's self-interest. In other words, a person's rational behaviour is limited to the instrumental as opposed to the intrinsic value of actions.

It has also been opined by some that voting is linked genetically with evolved behaviours like cooperation. Astudy carried out with identical twins and fraternal twins with respect to their voting patterns proved that as high as 60 per cent of differences in turnout among twins are attributable to genetics. Another similar study fixes this figure to a lower percentage of 40 per cent.

It has also been suggested that though rational, voters are not fully egoistic. Keeping this in mind, it is possible to say that there is some amount of altruism in voters and the voters can see that there is some benefit to be gained if others (or perhaps only others like them) are also benefited. Voters feel and care about other people, though it is possible that they care more for their own interest. While several other people are affected by an election, there might be some rationale in voting despite the fact that there are miniscule chances of having any impact on the outcome of the election. With this view, it makes it possible to make predictions that are testable, if an election is close there will be a higher percentage of turnout, and that if a candidate has made a secret promise to a specific voter to pay him an amount on winning would sway that voter's vote more in small and/or unimportant elections and less in large and/or important elections.

Check Your Progress

6. Fill in the blanks with appropriate terms.

(i) According to Richard Musgrave, the 'Maximum Social Advantage' principle of Dalton is the _____.

(ii) It is important to determine the size of the budget such that it will lead to the society's _____.

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It appears that this paradox has ignored all the collateral benefits that are linked with voting, other than what will result from the individual casting or not casting a vote. There is a possibility that for a voter pride is associated with voting, and more so if the voter is a first-time voter. If the voter carries out any research on what or who to vote for, then there is a possibility that the voter gains some political knowledge as well as some awareness as far as community issues are concerned, and both of these learning's are capable of contributing to a feeling of civic duty. Also, just walking up to the polling booth can prove to be beneficial as it is an exercise which is not available in any other form for the voter.

It is assumed in this paradox that the value of the votes is completely dependent on it being a matter of 'casting the vote that tips the scale'. This can have either of the following conclusions:

- In previous elections with winning margin of more than a single vote, no value was associated with a single vote, since if that single vote was subtracted from the total, count would not have affected the outcome of the election.
- In cases where elections have an even number of voters casting their vote, no single vote is capable of holding even the slightest value.

Yet people cast their vote and there is no clear reason why they do so. Is it that people like to work for a common good? If a person works for the common good, will it provide that person more benefits than the person who would have worked just for personal good? It is generally opined that if a person's single, personal sacrifice possibly changes the final outcome, then the sacrifice will have produced greater rewards than the personal cost born by the person. In case the sacrifice will have no effect on the ultimate outcome, it will not be worth sacrificing and this may happen more often if the person is receiving benefits of the sacrifices made by others even without making any sacrifice personally.

It has been proven time and again that an individual's sacrifice for common good will never accrue any personal reward that can be equal to the cost of the sacrifice made. Some examples that can show this are given below.

Everyone has been told time and again that voting is every citizen's civil duty of great importance. It is also a fact that this is a duty that does not need any major sacrifices for any individual. For the majority of the individuals, it is just a few minutes' task since registration is easy, polling booths are within easy reach, voting itself is easy and people nearly always come with the decision of whom they will vote for. Why is it then that just about fifty per cent of people who are eligible to vote go to cast their vote?

Here is an example of a Mr Y who had to go outstation for a three days conference on the day of the election. While it would have been possible for him to drive back and cast his vote and then get back to the conference, he makes a choice of not voting. He makes this choice since he believes that what the whole process will cost him is not worth the trouble since his single vote would not make much of a difference in the outcome of the election. This implies that the return on the cost incurred will be zero as an individual's vote holds no significance.

There will be several persons like Mr Y who will feel exactly the way Mr Y feels and prevent oneself from casting their vote. Various individuals will believe that the sacrifice that they have to make to go and cast their vote is not worth it. Some might be spending time with family, some with a television programme, or busy with some daily household chore, to name a few.

Here are some reasons that are put forth as to why individuals must always make use of the opportunity of voting that has been given to them.

If the counting of votes puts the result as a tie, will an individual's vote then be a key deciding factor?

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In case such a situation does occur, then possibly it can help. But in the case of large-scale elections, tie does not happen. Also, in case there is a tie, recounting will take place. If that ever happens, the individual's vote will become obliterated.

What if an individual likes to vote, wants to do his civic duty and feels good about having done it. It will give him pleasure to know that he has contributed to the victory of a candidate if the candidate he had voted wins.

Most people vote because they believe that their vote actually counts and this makes them feel good about themselves when they vote. Because they believe in such myths, voting makes them feel good. To quote Leon Felkins and Mack Tanner, 'If voting gives you a good feeling, by all means do it, if it doesn't cost you a lot of time or money. But what if you don't like any of the candidates, you know they are all crooks and that not one of them will do what he or she is promising they will do?'

What if an individual believes that he may be rewarded by his employer for voting and/or some other awards might await a registered voter?

Again, it is advised that the only rational thing a person should do is vote only if the cost of voting is lower than the reward. This is a thing that does not occur often. In the voting paradox, what is really being asked is why people vote, and not why some people do not vote. In voting, there is no rational sense since the sacrifice is not worth the payoff or return.

What if a person realizes that his vote will accomplish nothing and has to find a way to make his candidate win?

The way out is to have many people vote for the candidate that the individual wants to see win. Therefore, if the individual can get enough people to vote and the cost of getting them to vote is lower than the result of the candidate winning then rationality believes that this effort should be made by the individual.

So, considering that an individual voter cannot affect the outcome of voting, what are the other duties that individuals are required to do as their civic duty?

We will take an example of a personal sacrifice that impacts public good more than voting. This example is given by Leon Felkins and Mack Tanner in their work *The Common Good and the Voter's Paradox.*

Suppose that a person is residing in California city which is running out of water. It is declared by the mayor that: Among other things, the residents are to take baths only two days a week. Although this is not your day to bathe, you have just finished making a plumbing repair in the basement and you are feeling really grungy. The desire to take a bath weighs heavy on your mind.

You consider the options. They can best be stated by the following 'payoff matrix'.

	Direct Impact	Member of Community Impact
Take Bath	Great	– negligible
Don't Take Bath	Awful	+ negligible

(The '–' means slightly negative; the '+' means slightly positive).

NOTES

When I take any action that uses community resources, it impacts me in two ways. I am impacted directly by my action and I am impacted as a member of the community.

With regard to the bath water example, the pay off matrix would provide enough evidence to a rational person to conclude that the net pay off is heavily in favour of taking a bath. The loss that he/she would get from cheating as a member of the community is insignificantly small.

In both the above scenarios, the situation that appears is what is called 'The Voter's Paradox'. According to the paradox, the return an individual gains from having made a group contribution which benefits the group will be lower than the cost that the individual has incurred in making that contribution. This is because though the individual might make a positive personal gain from not having voted/used water, if each person decides not to vote/or conserve water, it will lead to a disastrous situation. In these two scenarios are found two separate classes of this problem.

In the dilemma of voting, the basic problem is that it provides no return whatsoever so that the cost of voting incurred by the voter can be balanced. The reason for this is that an election is a binary event implying that there is either a victory or a defeat and there is nothing in between. An individual's chosen candidate gets elected or loses. So, a single vote will not make a difference this way or that, it just does not have an impact on the final result. There is statistically a miniscule possibility of a tie and a single vote being the deciding factor.

In the example of the rationing of water, the situation is not binary in nature since each drop of water that is saved will be of help even when a single bath will not take away much and provide the bather significant returns for having cheated. In the case of this example, if half of the people decide to take a bath on the day not designated for them, the outcome will be disastrous.

What if everyone actually does that?

It is evident from experience that everyone will not do such a thing. People will be willing to make sacrifices for the common good and everyone will not join the ranks of those who abstain from voting or conserving water. An individual who thinks rationally has his first concern in the results that will be caused by his/her actions since this will impact his/her personal well-being and happiness. A person in this category could be willing to sacrifice for the common good, but only when the person is sure that this sacrifice will produce a common good which will be greater than or equal to the value of the personal sacrifice made by the person.

As a matter of fact, it will never happen that such a situation comes up. On most occasions, any personal sacrifice that is made by individuals will not provide any impact on the common good which is good enough to justify the personal cost at which the sacrifice was made.

Finally, the paradox is that if everyone, as in the example of scarcity of water, decided to cheat, it will make no sense at all for even one individual not to cheat. With a high number of persons cheating, it makes just no sense to be one among the few or the only one making the sacrifice as doing so will be completely irrational. The greater number of selfish, self directed and irrational individuals a community has, lower will be the positive impact of appeals in the community that guide people to work for the common good.

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Such a dilemma is at times referred to as the *Tragedy of the Common.* This term bears reference to an early New England practice of setting up of a grazing common that all the people of the village could use to graze their horses and milk cows. Since the resources on the commons were limited, it was assumed that the citizens would utilize only a fair share of the commons, ensuring that overgrazing of the commons does not take place. But this never was the case and overgrazing resulted in the commons turning into dust patches. This happened because people realized that grass as a resource was limited and they needed to give as much of it to their own cattle and horses before it was used up by someone else. If a person was not taking more than their fair share, someone else would take it.

In the *Tragedy of the Commons*, there lies a serious dilemma for such persons who attempt to form a society which will be based on the assumption that individuals will contribute to the groups well-being rather than looking out for their own selfish interests. There is a shattering of expectations underway if individuals who are propelled by selfish desires are expected to make voluntarily contribution towards community welfare.

When the *Tragedy of the Commons* arises, there are two options that a society can choose from—to ensure the common good and also to preserve the resources of the community. The two methods happen to be contradictory rather than complimentary.

One of the methods is known as pay-as-you go method, which refers to the *free market*. In the approach taken in the free market method, all common resources, be they under a community government or privately owned and managed, are sold at a high price to the public. The price is just so high that it will prevent the resource from depletion. For example, in the case of shortage of water, the water prices will be raised till people limit their consumption of water for the purpose of bathing. Along with making sure that less water is consumed, this strategy will collect capital which is utilizable for increasing the water supply by setting up new sources.

Today, people who stand for governments being socially responsible, are against the above mentioned market place approach since it leads to a situation that is unfair, and enables the rich to have enough water for washing cars and the poor not even enough to bathe. They believe that regulation is the only way to distribute a common necessity fairly. Therefore, in effect those who bathed on the wrong day must be jailed and capital can be gathered fairly for new public projects' financing through taxes. In such a situation, tax has to be collected to pay for the water system, and also for hiring the water police, for paying the judges, and for building jails to house those who cheat with taxes and/or water.

Even after these actions taken by the government, the question that arises here is that does it solve the voter's paradox, or does it just lead to the creation of a new commons, a public treasury, which will fall prey to selfish people who will always put their own selfish interest before the common good? No matter what amount is collected for the public treasury, it never suffices to fulfill the needs of those who lay claim to make use of this money.

Every individual has his own definition of public good and in this lie the things that are to his own best interest. Truck drivers want better roads, farmers want crop subsidies, politicians want each one of those benefits which will get them higher number of votes in an election, and the senior citizens want better health care policies, to give a few examples. Obviously, this will lead to the government not utilizing the money for public good, and the money flowing into the projects that people are smart enough to manipulate the system into financing.

NOTES

It has been seen that people who do not contribute to the common good are the ones earning double rewards. The first is the immediate reward which the person gets from saving the effort or money that would have gone towards the public good and the other is the long term reward that comes to him from the contribution that others make to the public good.

Altruism has its own rewards, right?

Several arguments exist that provide convincing proof of living beings, on a general basis, not being altruistic. It is not actually the feeling of altruism which makes people perform positive civic actions but propaganda, bribes, intimidation, stupidity, and such which causes it.

Is it not possible to use the school system to inculcate in the children a true feeling of altruism and teach them how important it is to work for the common good? This is something that the governments all across the world have been trying to accomplish for a very long time and it has not really succeeded. Education cannot make people altruistic. The tragedy is that when a person gains more education, the more rational the actions taken by that person will become, and such a person is certainly less likely to be easily convinced into giving up claim to personal good and sacrifice it for the sake of the common good.

Can the voter's paradox be resolved? Is there any solution for the dilemma? Is it true that there is no rational sense in making any sacrifice for the common good? Possibly the only way one can attain common good is by ensuring that everything is converted to a proposition of pay-as-you-go in which the free market place is where it is determined what will be the price of each benefit and each commodity. Furthermore, should one take a rational decision for taking every legal advantage of the common good and the common treasure for as long as others are willing to believe that it is better to serve the common good rather than look out for one's own selfish interests?

A society is, in actuality, at all times a confused mix of needs that compete with each other and here no two individuals at any given time have the same wants and needs. In the words of Leon Felkins and Mack Tanner, 'No matter how much you may want tax supported public schools, I'll remain convinced that public schools are a failed social experiment that should be junked. Some argue that the war on drugs does more damage to society than drug addiction could ever do. Do agricultural subsidies really serve the common good of the consumer who must pay higher prices at the food counter?'

Is a society in which nobody cares for the common good, a bad place to live?

In such a society, smaller businesses, like that of the vegetable seller and the baker, would not be forced to shut down, since everyone has to rely on other people. It is important to understand that to best ensure a person does what we require of them is returning the favour by doing for them that which appears to them to be a favour equal to the one they did. This is the essence of free market.

Check Your Progress

7. Why is the paradox of voting also referred to as Downs paradox?
8. What is question being asked by the voting paradox?
9. How can a contestant of one's choice win an election according to the voting paradox?
10. What is the basic problem in the dilemma of voting?

3.6 SUMMARY

In this unit, you have learnt that:

- The term voluntary exchange refers to the act of sellers and buyers willingly and freely participating in market transactions.

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- In case of a market economy, voluntary exchange is discussed as being something we willingly sacrifice to get something else, and this is in totality a human trait and is fully desirable.
- In neoclassical economics, voluntary exchange is a very fundamental assumption. In other words, in theorizing about the world, the neoclassical (mainstream) economists make the assumption that there is a presence of voluntary exchange.
- Exploitation was simply an assumption made by the Marxist economists, who were one of the prominent substitutes to neoclassical economists. In this light, we can say that broadly, economics is incapable of objectively testing if exploitation of one party or group by another party really exists. It is argued that, possibly this is one of the major failures of economics.
- In 1919, the Swedish Erik Lindahl put forth a rigorous and formal model of the benefits received from the voluntary exchange theory of public finance. Lindahl uses the example of two tax payers to explain the problem.
- In his proposal, Lindahl has paid no attention to the existing socio-political issue of equitable distribution of income. He has instead, attempted to resolve three problems that though interrelated are by nature fiscal problems.
- Despite all that provided by Lindahl in his model, there has been quite a lot of criticism of the model. Of all his critics, it is Musgrave who has several major points of criticism against what he has proposed.
- Foremost, Musgrave has pointed out that the model proposed by Lindahl does not provide the manner in which it will be possible to reach the equilibrium at point *P*. The solution provided by Lindahl seems to be analogous with the solution provided by Antoine Augustin Cournot regarding the duopoly in the value theory.
- The model presented by Lindahl does not account for the effect on the prices of the social goods when the output of the social goods is varied. The model works with the cost conditions remaining constant. Such an assumption is not realistic.
- The theory put forth by Lindahl works on the assumption that an optimum level has already been attained for the distribution of income. This assumption's non-validity is indicative of the fact that from each individual tax payer's demand curve, the society's preferences and needs cannot be represented.
- Paul Samuelson's first landmark paper was published in the year 1954. It was entitled 'The Pure Theory of Public Expenditure'. It was this paper that actually formalized the public goods concept which he referred to as 'collective consumption goods'.
- Samuelson's **'Samuelson condition'** is a theory of public goods in the field of economics. It represents the condition required by public goods to be efficient. When this condition has been satisfied, it means that more substitution of private goods for public goods and public goods for private goods will only lead to the fall of social utility.
- According to Richard Musgrave, the 'Maximum Social Advantage' principle of Dalton is the 'Maximum Welfare Principle of Budget Determination'.
- According to Musgrave, there were two budget policies that had been proposed by Dalton. In one budget policy, he proposed that resources need to be distributed in different directions so that it will equalize the marginal return of satisfaction that accrues for all the various types of expenditure that is made.

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- The other budget policy proposes that it is essential to push the public expenditure to such an extent that the satisfaction that accrues even from the last rupee spent will be equal to the satisfaction which was lost due to the last rupee taken away in the form of tax.
- It is important to determine the size of the budget such that it will lead to the society's maximum welfare.
- The paradox of voting is also referred to as the Downs paradox. According to the paradox, for a voter who is self-interested and rational, the benefit expected from the voting will be lower than the cost incurred to cast that vote.
- It has also been suggested that though rational, voters are not fully egoistic. Keeping this in mind, it is possible to say that there is some amount of altruism in voters and the voters can see that there is some benefit to be gained if others (or perhaps only others like them) are also benefited.
- It has also been opined by some that voting is linked genetically with evolved behaviours like cooperation. Astudy carried out with identical twins and fraternal twins with respect to their voting patterns proved that as high as 60 per cent of differences in turnout among twins are attributable to genetics.
- The way out to make a contestant of your choice to win is to have many people vote for the candidate that the individual wants to see win. Therefore, if the individual can get enough people to vote and the cost of getting them to vote is lower than the result of the candidate winning then rationality believes that this effort should be made by the individual.
- In the dilemma of voting, the basic problem is that it provides no return whatsoever so that the cost of voting incurred by the voter can be balanced. The reason for this is that an election is a binary event implying that there is either a victory or a defeat and there is nothing in between.
- Several arguments exist that provide convincing proof of living beings, on a general basis, not being altruistic. It is not actually the feeling of altruism which makes people perform positive civic actions but propaganda, bribes, intimidation, stupidity, and such which causes it.
- A society is, in actuality, at all times a confused mix of needs that compete with each other and here no two individuals at any given time have the same wants and needs.

3.7 KEY TERMS

- **Voluntary exchange:** It refers to the act of sellers and buyers willingly and freely participating in market transactions.
- **Altruism: Altruism** or selflessness is the principle or practice of concern for the welfare of others.

3.8 ANSWERS TO 'CHECK YOUR PROGRESS'

1. In case of a market economy, voluntary exchange is discussed as being something we willingly sacrifice to get something else, and this is in totality a human trait and is fully desirable.

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2. In 1919, the Swedish Erik Lindahl put forth a rigorous and formal model of the benefits received from the voluntary exchange theory of public finance.
3. Lindahl's model has its basis on the assumption that it is only a type of taxation that finances the activities of the State. This financing cannot be done by other means like public borrowing and employing a printing press.
4. Paul Samuelson's first landmark paper was published in the year 1954. It was entitled 'The Pure Theory of Public Expenditure'. It was this paper that actually formalized the public goods concept which he referred to as 'collective consumption goods'.
5. Samuelson's '**Samuelson condition'** is a theory of public goods in the field of economics. It represents the condition required by public goods to be efficient.
6. (i) 'Maximum Welfare Principle of Budget Determination'

   (ii) maximum welfare
7. The paradox of voting is also referred to as Downs paradox since it was first observed by Anthony Downs.
8. In the voting paradox, what is really being asked is why people vote, and not why some people do not vote.
9. The way out to make a contestant of one's choice to win is to have many people vote for the candidate that the individual wants to see win. Therefore, if the individual can get enough people to vote and the cost of getting them to vote is lower than the result of the candidate winning then rationality believes that this effort should be made by the individual.
10. In the dilemma of voting, the basic problem is that it provides no return whatsoever so that the cost of voting incurred by the voter can be balanced. The reason for this is that an election is a binary event implying that there is either a victory or a defeat and there is nothing in between.

3.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. When is voluntary exchange said to have been pleasing and beneficial for both parties?
2. What is considered to be the major failure of economics?
3. List the problems that were taken up by Lindahl.
4. Why did Musgrave criticize Lindahl's model?
5. 'According to Musgrave, there were two budget policies that had been proposed by Dalton.' What are the policies?
6. What does the paradox of voting postulate?
7. What is the *Tragedy of the Common*?

Long-Answer Questions

1. Discuss the voluntary exchange principle with regard to market transactions.
2. Describe Lindahl's model with the help of a diagram.

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3. Assess the criticism obtained by Lindahl's model.
4. Evaluate Samuelson's model of public goods.
5. Critically analyse Musgrave's optimum budget model.
6. Explain the paradox of voting as observed by Anthony Downs.
7. Write a note on Samuelson condition.
8. Describe the example given by Leon Felkins and Mack Tanner in their work *The Common Good and the Voter's Paradox* of a personal sacrifice that impacts public good more than voting.

3.10 FURTHER READING

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UNIT 4 PRINCIPLES OF TAXATION

Structure

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4.0 INTRODUCTION

Every government needs funds to finance its activities. They may be raised from various sources. The important sources include taxes, interest receipts, income from currency, borrowings, sale of public assets, income from public undertakings, fees, fines, gifts and donations. Professor Dalton makes a distinction between public receipts and public revenue. To him, public receipts include receipts of the government from all sources while *public revenue* is a narrower concept and excludes public borrowings, income from the sale of public assets, or receipts from the use of 'printing press'.

Taxes must be levied on people with great care and rationality. In order to practice this rationality and care, the taxing authority must follow a certain code of conduct in the form of principles of taxation while determining the type and amount of the tax to be levied. The various theories which have been developed since Adam Smith's days to guide the state in levying taxes are called the principles or canons of taxation.

Every tax imposes an additional burden on the taxpayer. In other words, a tax is a compulsory payment which cannot be refused without attracting punishment by the government. The government does not promise any direct benefit to the tax-payer. Thus, it becomes essential that the burden of tax should be divided fairly and appropriately

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in the economy. The government is responsible for providing certain facilities to the citizens. It has to adopt a definite principle and a definite machinery to apply these principles while imposing, collecting and utilizing the money thus collected through taxes. The tax policy of the government must be production-oriented, clear-cut, and less attentive to the subsidiary objects. In this unit, you will get acquainted with the principles of taxation.

4.1 UNIT OBJECTIVES

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

- Describe the various canons of taxation
- Explain the benefits received theory of taxation
- Assess the ability to pay approach to taxation
- Discuss the concept of taxable capacity and the factors determining taxable capacity
- Analyse the concept of regressive, proportional and progressive tax
- Give an overview of the Indian Tax System

4.2 CANONS OF TAXATION

The totality of all taxes that are levied by a government is termed as tax system. The authorities view their tax system as a means towards achieving one or more objectives (such as raising revenue) and, in conformity with them, they identify certain criteria or principles as guidelines for building the tax system. The features of the tax system also flow from the principles upon which it is designed as also its detailed structure. Frequently, some objectives of a tax system turn out to be contradictory and this problem is resolved by some sort of a compromise.

Every tax system generates not only revenue receipts for the government, but also innumerable other spill over effects. To a typical academician, an ideal tax system is the one which is likely to maximize the sum total of its most desirable effects. The next step is to identify those tax principles on which such an ideal tax system should be based. The first set of such principles was enunciated by Adam Smith, a Scottish philosopher and political economist, which he called Canons of Taxation.

Adam Smith was interested in enabling an economy to increase its productive capacity and thereby achieve a higher rate of growth. Further, he firmly believed that private sector was more efficient than the public one and, therefore, the primary responsibility of economic growth should rest with the private sector. Economic growth necessitates large scale saving and investment. It is also essential that the investment should be along productive lines. He was of the view that the private sector should be entrusted with the maximum possible economic responsibility and for an efficient discharge of this duty, it should be given as much freedom as possible. The only additional consideration should be the adequacy of revenue for the State (for its own maintenance, for defence, for law and order, and for social overheads) and an equitable distribution of the tax burden. With this end in view, he laid down those principles of taxation which were to satisfy these conditions.

4.2.1 Adam Smith's Canons on Taxation

Adam Smith prescribed the following four canons of taxation.

1. Canon of Equality

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'The subjects of every State ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the State.' This canon tries to observe the objective of economic justice. It dictates that, in absolute terms, the richer should pay more taxes because without the protection of the State they could not have earned and enjoyed that extra income. If we interpret this principle in terms of disutility which the taxpayers suffer by paying taxes, it follows that the tax should impose equal marginal disutility upon every taxpayer. Two possibilities emerge in this case. If incomes are subject to constant marginal utility, then both the rich and the poor should be subjected to proportional taxation— each person paying a given percentage of his income as tax. On the other hand, if we agree with the more realistic proposition that income is subject to diminishing marginal utility, then the richer should pay a larger proportion of their incomes as taxes (that is, the taxes should be progressive).

2. Canon of Certainty

This canon is meant to protect the taxpayers from unnecessary harassment by the tax officials. 'The tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person.' The taxpayers should not be subject to arbitrariness and discretion of the tax officials, since that breeds a corrupt tax administration. With a scope for arbitrariness even an honest tax machinery will become unpopular. Smith is so emphatic about this principle as to claim 'that a very considerable degree of inequality... is not near so great an evil as a very small degree of uncertainty.'

3. Canon of Convenience

The mode and timings of tax payment should be, as far as possible, convenient to the taxpayer. This canon recommends that unnecessary trouble to the taxpayer should be avoided, otherwise various ill-effects may result.

4. Canon of Economy

This canon recommends that cost of collection of taxes should be minimum. The government should avoid those taxes which are too thinly spread and difficult to administer, since they entail unnecessary burden upon the society and add to the administrative expenses. The productive efforts of the people also suffer due to this wastage. Realizing that the tax collections are being wasted, the taxpayers also tend to evade them.

4.2.2 Additional Principles

Smith's canons of taxation were derived from a sound reasoning in conformity with the needs of the economy and prevalent thinking of these times, and they continue to be relevant even today. However, developments in economic thinking and pressing realities

of modern economies necessitated identification of a few additional principles of taxation briefly described below.

1. Canon of Productivity

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It is also called the canon of *fiscal adequacy*. According to this principle, the tax system should be able to yield enough revenue for the treasury and the government should have no need to resort to deficit financing.

2. Canon of Buoyancy

The tax revenue should have an inherent tendency to increase along with an increase in national income, even if the rates and coverage of taxes are not revised.

3. Canon of Flexibility

It should be possible for the authorities, without undue delay, to revise the tax structure, both with respect to its coverage and rates, to suit the changing needs of the economy and that of the treasury.

4. Canon of Simplicity

The tax system should not be too complicated that it becomes difficult to understand and administer and breed problems of interpretation and legal disputes.

5. Canon of Diversity

It is risky for the State to depend upon too few sources of public revenue. Such a system is bound to breed a lot of uncertainty for the treasury. It is also likely to be inequitable between different sections of the society. On the other hand, if the tax revenue comes from diversified sources, then any reduction in tax revenue on account of any one cause is likely to be very small. However, too much multiplicity of taxes is also to be avoided that may lead to unnecessary cost of collection and thereby violate the canon of economy.

Latest Additions

Economic thinking, particularly after Second World War, has undergone a radical transformation in which the State has been assigned a comprehensive role for tackling the country's economic and social ailments. Growing complexities of a modern economy and a comprehensive role of a modern government in it has led to the development of a whole array of objectives in which tax system is viewed as a collection of effective policy weapons. Consequently, the latest principles of taxation include not only imposition of taxes, but also tax concessions, rebates, exemptions, and so on. These days, tax instruments are specifically designed to deal with a large variety of socio-economic problems including economic development, regional and inter-sectoral imbalances, distributive justice, insufficient availability of merit goods, maximization of social welfare function, stability of income and employment, encouraging or discouraging specific industries and so on.

It must be remembered that the tax structure of a country is a part of its economic organization and should, therefore, fit in its overall economic philosophy. No tax system that does not satisfy this basic condition can be termed a good one. Over time therefore, ideas regarding what should form a good tax system have undergone an evolution.

Check Your Progress

1. Why according to Adam Smith should the primary responsibility of economic growth rest with the private sector?
2. What does the canon of equality try to observe?
3. What does the latest principle of taxation include?

4.3 BENEFIT AND ABILITY TO PAY APPROACHES TO TAXATION

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There are three ways of classifying tax theories. A taxation theory is a model depicting a tax system built upon various identified assumptions and objectives with a set of corresponding features. Viewed this way, tax theories may be classified into three groups as below.

1. A taxation theory may be derived on the assumption that there need not be any relationship between tax paid and benefits received from State activities. In this group, we have *two theories, namely,* (a) *Expediency theory,* and (b) *Socio-political theory*
2. A taxation theory may be based on a link between tax liability and state activities. It would assume that the State should charge the members of the society for the services provided by it. This reasoning, on the one hand, justifies imposition of taxes for financing State activities and on the other, by inference, provides a basis for apportioning the tax burden between members of society. This logic, therefore, yields two theories, namely, (a) *Benefits received theory* and (b) *Cost-of-service theory*.
3. An extension of the former reasoning would be that though there need not be any relationship between tax liability and provision of State services, tax liability should be apportioned between taxpayers on the basis of their comparative ability to pay. This gives us the *Ability to pay theory*.

In this section, we will deal with the benefits received and ability to pay approach to taxation.

4.3.1 Benefits Received Theory

The benefits received theory proceeds on the assumption that there is basically an exchange or contractual relationship between taxpayers and the State. The State provides certain goods and services to the members of society and they contribute to the financing of these supplies in proportion to the benefits received by them. In this *quid pro quo* set up, there is no place for issues like equitable distribution of income and wealth. Instead, the benefits received are taken to represent the basis for distributing the tax burden in a specific manner. This theory overlooks the possible use of tax policy for bringing about economic growth or economic stabilization in the country.

Services supplied by the State may be divided into two categories. The first category consists of those services to which the principle of exclusion does not apply. In this case every member of the society consumes these services and therefore should contribute to the State revenue in accordance with the benefits received. But the other category is the one where the taxpayers have the option to accept or reject the state services. Here, a market relationship is established between the two, and therefore, what the members of the society pay are the fees and the prices and not the taxes in strict sense of the term. Taxes are by definition compulsory payments without *quid pro quo* and this condition is not satisfied in this case.

The benefits received theory has a long dated origin and its roots lie in the Contract Theory of the State. Afuller survey of the evolution of this theory is available in Professor Edwin R. Seligman's *Progressive Taxation in Theory and Practice*. The theory was

in vogue with German, French and other writers like Grotius, Hobbes, Locke, Hume and Rousseau. Its main theme is that there is a contractual relationship between the State and its subjects such that the State provides various goods and services and the citizens finance their provision by paying taxes.

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Hurdles

As in the case of other theories, several problems crop up in its practical application. Since tax burden is to be distributed between taxpayers in proportion to the benefits received by them from State services, the authorities have to identify the beneficiaries and quantify the benefits derived by them. This, however, is not an easy task.

- Benefits derived from state services are closely related to the distribution pattern of income and wealth in the country. It is so because, amongst other things, income distribution is a major determinant of demand pattern including demand for State services. Therefore, it has to be assumed that the existing distribution of income and wealth is an appropriate one and there is no need to change it.
- Benefit derived by an individual from State services is ultimately a subjective thing and it is conditioned not only by the State services enjoyed by the individual under consideration, but also the availability of these services to other members of the community as also the attitudes of their beneficiaries. There is no standard format or pattern of these attitudes and, as a result, depending upon the set of attitudes of community members, a given amount and variety of State services may yield divergent measures of derived benefits.
- It is possible that State services may lead to a net addition to or reduction in national income. This theory does not tell us what to do in this case.
- Several State services have spill over effects, and frequently it is very difficult to pinpoint the losers and gainers and quantify their losses and gains. For example, provision of health services to residents of a locality is likely to have a beneficial impact upon the health of the neighbouring colonies as well. Again, if a slum area is improved by the State, some of those living in nearby palatial houses may be happier for it, while some others may feel that their comparatively 'higher' status has been compromised.
- This theory does not tell us whether the losers are to be compensated by the State or not, and if so, who pays for that.

Since, in the ultimate analysis, benefit derived from State services is a subjective thing, there is no scientific way of quantifying it. At the most, it may be possible to consider some proxy variables or widely approved criteria.

For example, income is often used as an indicator of the benefits received from the State. This is because the society and its economy cannot be preserved without State protection. Members of the society can also earn and consume income and possess and enjoy wealth only if the State makes laws to that effect and enforces them. By implication, their tax liabilities should also be proportional to their incomes and wealth. This was the stand taken by Adam Smith when he said that each individual ought to contribute to the public revenue according to his ability. Smith equated relative ability to pay of the taxpayers with incomes which they respectively enjoyed under State protection. Thus, in due course, the benefits approach gradually came to reflect a philosophy that taxation was basically a payment for the protection provided by the State.

It is, of course, interesting to note that even this narrow reasoning permitted contradictory results. Diametrically opposite opinions were expressed as to who was in

greater need of State protection, the rich or the poor. Thus, while Rousseau and Sismondi argued that the rich needed greater protection of the State, John Stuart Mill and others thought that the poor were in greater need of protection from exploitation by the rich. Thus, while one group of thinkers advocated progressive taxation, the other was in favour of regressive rates.

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In late nineteenth and early twentieth centuries, the benefits received theory was put to an additional use in simultaneously determining the optimum level of State activities and optimum distribution of tax burden. To this end, the concepts of demand and supply schedules were extended to demand for and supply of State services in varying details. In each model, taxpayers were treated as buyers of State services with respective demand schedules and the government was treated as the supplier of these services. The basic problem was that, in several cases, it was not possible to determine demand schedules with any precision and taxes had to be charged by making certain simplifying assumptions.

In this connection, we may start with an Italian thinker, U. Mazolla (1863–1899), famous for his contribution to the theory of public goods. In 1880, he asserted that there is a basic difference between the characteristics of private and public goods in the sense that the latter are all shared by the consumers and the principle of exclusion does not apply to them. Accordingly, instead of charging equal tax from each taxpayer for public goods, their liability should be determined in proportion to the relative marginal utility derived by them from the consumption of State services. In the process, each taxpayer would equate the marginal utility from his expenditure on the public and private goods.

In 1887, Emil Sax, an Austrian economist, made a distinction between personal collective wants and collective wants proper. The principle of exclusion applies to the former and, in their case, fees or taxes can be charged according to the services received. But in the latter case, the principle of exclusion does not apply. No individual consumer can be left out of the benefit of these services. Accordingly, in this case the taxpayers have to agree as to what is the relative benefit which they derive from their respective consumption of public services. Sax advocates that a good proxy of the measure of this relative benefit would be the proportional income tax.

In 1888, Antonio de Viti de Marco (another Italian economist) made an assumption similar to that of Sax that the members of the societyconsume public services in proportion to their incomes. This assumption should have led him to advocate proportional taxation. But he also brings in the question of marginal utility of income to the taxpayers. Since larger incomes bring in lower marginal utility, the richer citizen ought to pay more for the same service. De Marco, like Adam Smith, then brings in a mixture of the benefit approach with that of the equitable distribution of sacrifice which is represented by ability to pay approach. He is not asserting that the richer people secure greater benefit from State services, as is maintained by some others. The richer, therefore, are not to pay more taxes because of greater benefits, but because of lesser sacrifice involved in paying taxes. They are to pay more taxes because proportional taxation hurts the poorer more and the richer less. It is the equitable distribution of sacrifice which leads us to recommend that the richer sections should pay more taxes.

Limitations of the Benefits Received Approach

The limitations of the benefits received approach is as follows:

- The main difficulty in this approach is that basically the contributions by members of the society to the State Treasury for the provision of State services are not

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strictly taxes. *They are in the nature of prices* which the members of the society *voluntarily* agree to pay for the public services rendered to them. Even when the decisions regarding the supply of public services and the respective contributions by the members of the society are taken not on individual basis, but on the basis of some representative body such as the Parliament, or on a majority voting basis, prices only partially acquire the character of taxation (i.e., compulsory payment without any necessary *quid pro quo*).

- It is impossible to quantify *the benefits* derived by individual members of the society. Benefit is ultimately a subjective thing and cannot be estimated directly. Any proxy variable used for this purpose will always be subject to discussion. And quite often diametrically opposite results may be arrived at on account of this difference in the interpretation of the benefits. Thus, some authors take income as the representative of the benefits received. In itself, this is a questionable index especially if we do not look into the expenditure pattern of the State. For example, it would be wrong to maintain that the benefit of State services derived by two individuals would be equal with one of them getting a State pension of ` 100 per month and the other earning that very amount by own labour.
- It is assumed that the benefits derived by consumers of State services are independent of each other. It means that the benefit that individuals enjoy depends only upon their own consumption of State services and that it makes no difference to him as to who else is consuming them and how much. This is a factually incorrect statement. We all know, for example, that the satisfaction that one derives from income depends not only on absolute income, but also equally upon the income of others. Moreover, there is no way of knowing the *nature and extent* of this interdependence on *a priori* basis. Arich person may feel better on account of the fact that his/her income is far bigger than those of the others or may feel depressed because there is poverty around him/her. It is highly unlikely that the rich person would be totally indifferent to the incomes received by others. In the same manner, the benefits derived from State expenditure do not depend only upon their absolute amount consumed by a given individual, but also upon how that individual views the consumption-shares of others.
- This principle falls foul of all welfare activities of the State which bring in any distributive change. 'For example, the benefit derived by an old-age pensioner from his pension is definite enough, and the benefit of service principle would require him to return it to the public treasury in the form of a special tax.' Though, quite erroneously, this principle assumes that the distribution of income is already proper, still such a proper distribution might be the result of the State activities themselves. If the State taxes according to the benefits received, the net result might be an improper income distribution. Therefore, the assumption that income distribution is already proper is obviously erroneous. An important objective of most fiscal policies is to bring about a shift towards what is considered an equitable income distribution. The benefit principle militates against this possible objective. The relationship of the State with its citizens is reduced to a semi-commercial level only.
- It is equally questionable to assume that the income received by a member of the society is directly connected only with the benefits received from the State. The exact relationship between the income of an individual and the valuation of the benefits received from the State services is not always clear and quantifiable.

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Looked at from one angle, it may be said that income is subject to the law of diminishing marginal utility and as a result the richer people derive proportionately lesser benefit from the State activities. It may also be asserted that the poor are in greater need of the State protection so as to be saved from exploitation by the rich. That is why the State has to enact all kinds of labour legislation and enforce the same. The other view here could be that the richer sections can enjoy their wealth and income only because of the State protection of their rights. If the State derecognizes their rights, they will lose this privilege. Therefore, the richer sections need and get a larger measure of State protection. Also, in practice, we know that enactment of various laws and traditions enable the richer classes to have much wider and profitable opportunities of acquiring additional income. The opportunities to the poor are always inadequate.

- It must be remembered that a society is not just the summation of its individual members. As German writers have the tradition of insisting upon, a society is an organic entity, having a soul of its own in addition to being the sum total of its members. Accordingly, there are many benefits and costs which cannot be ascribed to any particular individual or a group of individuals. The existence of the society and the nature of some goods is such that there are externalities of those goods. Mention has already been made of such externalities while discussing public goods. The problem therefore remains that of assigning the net benefits and the tax burden. There are certain State activities, such as those helping the economy in its economic growth, which cannot be quantified at all much less ascribed to any particular sections of the society.
- In a number of cases people suffer from a lack of complete knowledge. Aparticular State service may be of great help to the societyand even to the individual taxpayers, but it may not be widely known. In India, for example quite a few villagers may not be able to appreciate the benefits of polio vaccination and similar other health measures. It will be misleading on our part to assume that these villagers would be voluntarily opting for the provision of these health measures and would also offer to pay for the same.
- A modern economy is generally faced with the problems of economic growth (in the case of underdeveloped economies) and/or of stabilization (especially in the case of developed economies). Benefits approach is not able to guide the government in this sphere because the benefits accruing to the economy as a whole cannot be apportioned amongst individual members of the society.
- The benefits received theory does not become more acceptable even if we take up a more rigorous and formal statement of Erik Lindahl. Lindahl's approach necessitates that each taxpayer should reveal his/her true preferences. First, it may not happen, especially when each taxpayer finds that it may be possible to achieve a better position by showing a lesser demand for State services (or public goods). Ultimately, it becomes a question of the strategy and bargaining power and no single equilibrium solution becomes available. Second, the problem becomes all the more complicated when the number of taxpayers is more than two, as is always the case. With a large number of taxpayers, individual taxpayers will find that this non-contribution to the public revenue does not adversely affect the State expenditure or the supply of public goods proper. Accordingly, taxpayers have the tendency to evade tax and conceal their true preferences. Unless true preferences of the members of society are known, decisions regarding the nature

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and extent of public services cannot be taken; nor can the allocation of the cost of services be made. Third, in some cases, the whole approach can lead to a very absurd result. For example, realizing that his contribution as a taxpayer would not affect the defence effort of the country, each taxpayer might refuse to contribute for it. Should it mean that the true preference of the society is not to be protected against foreign aggressions? Obviously, we have been led to a wrong conclusion by the concealment of true preferences by the society.

- Wicksell and Colm emphasize the basic fact that the determination of the State budget is through a political process and not through the market mechanism of demand and supply forces. The state organization might work through an elected legislature or through a bureaucracy or some such other method, but it is certainly not a market process in which demand and supply forces determine the extent of each service and its price to be charged from the individual consumers. Furthermore, Colm also points out that apart from the fact that the State budget is determined through a political process, an individual also changes his *outlook* while taking decisions about the taxes. In the latter case, he does not go by his own individual interest only. He has also in mind the political factors including what type of society he wants to have around him and the way in which tax contributions can help in its building.
- A general objection to this theory is its non-recognition of the objective of equity in taxation. Though it is occasionally mentioned, it is not generally accepted as a part of this theory.
- Similarly, in this theory, the relationship between the government and the public is reduced to the one of a semi-commercial nature. Several basic functions of a good government like helping the needy, protecting the helpless, and so on are ruled out in this theory.
- This approach does not tell us what to do if tax collections based on benefits received method do not match the governments expenditure needs. Should the government then resort to budgetary savings or market borrowings? Also no interconnection between tax collections and other sources of government revenue like gifts, profits from currency etc., is brought to the forefront.
- Different economic units are interdependent in an economy through their mutual economic transactions. As a result, the benefits or losses of government activities seldom remain confined to their first points of impact. Almost invariably, there are additional rounds of benefits or losses to the economy. This approach does not advocate taxing the secondary, tertiary and later beneficiaries.
- The benefits received principle of taxation is based upon the assumption that market mechanism fails to supply goods and services which have a quality of publicness in them. It assumes that these goods and services are so important that arrangements should be made for their supply. This, in turn, implies that the state should undertake the supply of these goods and services and charge for them from their beneficiaries. Samuelson has been a strong supporter of the view that onlypublic sector can supplythose goods which are non-rivalrous in production. The latter characteristic implies that its consumption by one does not deprive others from its use. However, this characteristic also leads to the inference that its marginal cost is zero and therefore it is not possible to establish a correspondence between its cost to the supplier and the benefit to its users. This weakens the very theoretical basis of financing the supply of a public good on benefit principle.

Moreover, various theoreticians have emphasized the difficulties associated with identifying goods and services that not only contain the characteristics of publicness, but also *retain* them. The Paretian type theorizing of welfare maximization couched in static terms becomes debatable in this case, since the characteristics of publicness in many goods tend to vary with the techniques of production and areas of consumption.

4.3.2 Ability to Pay Theory

This theory has enjoyed widespread popularity right from sixteenth century till date, particularly it sub-serves the ends of a modern welfare State. The well-known advocates of this theory include Rousseau, J. B. Say, Adam Smith, J. S. Mill, among others. It has been used as a theoretical underpinning for several policy prescriptions like progressive taxation, reduction in income and wealth inequalities, and removal of regional disparities, etc.

This theory views tax liability in its true form—a compulsory payment to the State without any *quid pro quo.* It does not assume any commercial or semi-commercial relationship between the State and the citizens. According to this approach, a citizen is to pay taxes *just because he can,* and his relative share in the total tax burden is to be determined by his relative paying capacity. This doctrine has been in vogue for at least as long as the benefits-received approach. A good account of its history is found in Seligman.[1] This theory was bound to be supported by socialist thinkers because of its conformity with the ideas and concepts of justice and equity. However, the doctrine received an equally strong support from non-socialist thinkers as well and became a part of the theory of welfare economics.

The basic tenet of the ability to pay doctrine is that the distribution of tax burden between members of society should be on the criteria of justice and equity which, in turn, implies that the tax burden should be apportioned according to their relative ability to pay. In this connection, the following points are particularly noteworthy.

- The doctrine of ability to pay is also combined, in certain cases, with the objectives of maximum welfare of the society. This happens when the index of paying ability is compiled on the basis of equi-marginal sacrifice. In that case the society undergoes *least aggregate sacrifice* in meeting a given tax liability.
- The ability to pay of the society as a whole is *not an absolute but a variable quantity* and depends upon a number of variables including the expenditure side of the government budget.
- Analysts have identified several indices for quantifying relative ability to pay of the taxpayers such as, income, property and wealth, and consumption expenditure.
- It is sometimes thought that income as the index of ability coupled with objectives of equity and welfare *necessarily* implies progressive[2] taxation. This is not so. Under certain conditions, proportional or even regressive taxation may follow from this line of reasoning. As mentioned above, ability to pay is not an invariant quantity, and amongst other things, depends upon the expenditure side of the government budget. Amodern government is generally eager to adopt all feasible measures to help, guide and protect the economy and society. Basically, therefore, it is the overall budgetary policy which matters, and not just the taxation in isolation of the rest of the budget. However, for the sake of simplicity of analysis, all these factors are considered exogenous and given.

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- While the fact of repercussive effects of a fiscal policy[3] is recognized, it is usually ignored for keeping the arguments at a simple level.
- While cost of service approach to the distribution of tax burden implies that the government should try to have a balanced budget, the ability to pay approach does not have any such direct implication. The claim of non-essentiality of a balanced budget is further strengthened if we bring in the expenditure side of the budget to make the analysis more realistic. Actually, ability to pay approach has the advantage that its analysis can be extended into more realistic spheres to give us a unified picture of the overall fiscal policy of the government. It can admit the interdependence of government expenditure and the paying ability of taxpayers. It also follows that the government should not have a predetermined notion of necessarily having a surplus or a deficit budget. Similarly, the authorities need not limit their revenue raising activities to taxation only—an active and effective debt management policy becomes a part and parcel of their fiscal policy.
- There can be a difference of opinion as to what constitutes the ability to pay of the citizens. The index of ability compiled by us may be an objective or a subjective one. An objective index may be based upon income, expenditure, wealth and property, etc. of the taxpayers, or a weighted combination of some of them. Similarly, a subjective index may be compiled on the basis of those variables which are identified as relevant for equity and welfare. Either way, an ability to pay index is supposed to enable the authorities to distribute the tax burden between members of society in conformity with their comparative ability to bear it. Its expected spill-over effect is minimization of aggregate sacrifice by taxpayers.

1. Objective Indices of Ability

(a) Property as an Index of Ability to Pay

There are several limitations and conceptual difficulties in adopting this objective index. By itself, it is an incomplete index and may be used only to supplement other indices. It has a meaning only in an economy which has the institutions of private property and inheritance and in which, therefore, decisions of saving and investment are primarily in the hands of private individuals, families, and the corporate sector. These institutions provide a great incentive for the will to work, save and invest. If property is chosen as an index of ability to pay, these activities are liable to suffer with adverse effects upon capital accumulation in the economy and its growth rate.

Furthermore, if tax rates are quite high, they would eat into the property, and the set back to saving and investment activity will be all the more severe. It must also be remembered that in an underdeveloped country, where the volume of such taxable property is likely to be small, and where inequalities of wealth are great, this revenue resource is very likely to be both inflexible and inadequate.

Property by itself is bound to be an incomplete index in manycases. Some properties yield more income than the others, and some do not yield any income at all. Therefore, considering the ownership of property to the exclusion of other possible indices of ability to pay is bound to be misleading.

However, just as property should not be chosen as the sole index of ability to pay, it should not be left out of any index either. This is so even when some properties do not yield any income, since their very existence adds to the owner's ability to pay[4]. Also from the point of view of welfare, concentration of economic power should be prevented

because it *generates opportunities of economic exploitation, and leads to unequal economic opportunities for the citizens.* Property owners are also known to be able to manipulate the working of the economy to their advantage. It is for this reason that taxing of gifts and inheritances should find an important place in any egalitarian tax system.

We may say, that it will be erroneous to rely upon property as the sole index and source of taxation, but it is an equally erroneous to leave it out. Any good tax system will take into account the property ownership and the powers which it confers upon the owners and would consider it as an important source of public revenue.

(b) Consumption Expenditure as an Index of Ability

Choice of this index assumes that people with higher consumption expenditure derive smaller marginal utility from it. Therefore, they can pay more tax and suffer a greater reduction in their consumption expenditure without losing more utility than those who are spending less. By implication, it is also assumed that levels of income and expenditure of taxpayers rise and fall together and therefore taxpayers with higher expenditure are those who have higher incomes. Furthermore, expenditure drains resources of the society and, for that reason, ought to be taxed. But in spite of these arguments, it is not a satisfactory index of ability to pay. For various reasons, it is a very difficult index to compile and still more difficult to administer because of problems in estimating consumption expenditure during a given period of time. Use of some indirect taxes like excise duties and sales taxes as proxies of tax on consumption expenditure implies that taxpayers can be classified into ability categories according to the goods and services they consume. But this is frequently not so. Moreover, several indirect taxes can be quite regressive in their nature.

Some critics claim that it is questionable to tax only that part of income which is consumed, and leave out that portion which is saved and invested. This system enables higher income people to plough back their earnings into investment and increase the concentration of economic power in their hands without attracting tax liability. We may, therefore, conclude that a tax on consumption may be a part of the overall tax system, but not as its sole component.

(c) Income as the Index of Ability to Pay

Income is one of the most accepted indices of ability to pay, though it is usually supplemented by other tax indices also. Even Adam Smith, while asserting the ability criterion in his first canon of taxation, maintained that such ability is in proportion to respective incomes of the taxpayers. However, as we shall see, income itself, from the point of view of ability to pay, is subject to several interpretations. Accordingly, various conceptual points have to be clarified before this index can be recommended and of course, as in any other index, there are also several practical difficulties in its administration.

According to this approach, a citizen receiving a larger income is made to foot a larger tax bill and vice versa. As a matter of detail, income may be divided into two parts: (i) earned income, and (ii) unearned income. The latter includes capital gains etc., and may be subjected to heavier taxation. Also, it is net and not gross income which should be considered for this purpose. This is because normally, expenses (both monetary and non-monetary) have to be incurred to earn an income. Similarly, conceptually speaking, leisure is also a part of one's real income. Accordingly, a person's net income should mean the gross income plus leisure minus expenses incurred to earn that income.

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Limitations

However, net income, even when measured in this rigorous way, is not an ideal index of tax paying ability. It also suffers from a number of limitations. They are:

- The ability to pay of a taxpayer is as much dependent upon his needs as his income. Persons having same income but different needs do not have same ability to pay.
- Ability to pay depends upon marginal utility of money which is a tricky measure. It is subject to quick variation on several grounds and cannot be quantified because of its subjectivity.
- The income as an index of ability to pay appears far less relevant in the case of corporate incomes. An individual or family might own a number of small enterprises and thereby acquire a large amount of income. Alternatively, a large business may be owned by a number of individuals or families, each getting a small amount of income. By implication, corporate sector may be subjected to a uniform rate of income tax.
- In the same manner, it is difficult to use this index in indirect taxes. Since indirect taxes are collected as taxes on commodities and services, it is implicitly assumed that the consumers can be classified into homogeneous groups of equal ability to pay according to the types and quantities of goods and services purchased by them. This is obviously a highly unrealistic assumption.
- A comprehensive indirect tax on both goods and services makes it still more difficult to structure it in conformity with the principle of ability to pay. GST accommodates very few exemptions and identified 'sin goods' which are subjected to a penal tax rate. If exemptions and 'sin goods' are ignored, GST boils down to a proportionate tax on consumption expenditure.
- In underdeveloped countries, it may be partially correct to assume that luxuries are purchased mainly by the richer sections only. But even there it is not necessarily so. Where there is no electricity, even very rich residents are not likely to have refrigerators or air conditioners. In advanced countries, the difficulty arises from the fact that consumption pattern is much less indicative of the relative paying capacity of the citizens.

However, in spite of all these limitations, income as an index of ability is more appealing than other indices. It still satisfies our priori expectations to a great extent.

In practice, however, it is helpful if we adjust and determine the tax liability at multiple levels based upon income, consumption, wealth and property, gifts and inheritances, capital gains and unearned increments. Also, it is still helpful if the system of taxation includes both direct and indirect varieties.

2. Subjective Indices of Ability to Pay

(a) Assumptions

Subjective approach to ability to pay proceeds on the assumptions that a taxpayer undergoes a hardship or suffers a sacrifice by paying the tax. It is assumed that he does not feel better by the idea that he is contributing to the welfare of the society through

helping the State in its multifarious activities. Also, it is assumed that the sacrifice of a taxpayer depends upon his own tax liability and is not affected by the tax paid by others.

(b) Equity versus Welfare

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The question of determining tax liability of individual taxpayers may be considered in the context of equity and/or welfare. The goal of equity dictates that sacrifice undergone by taxpayers is equally apportioned between them. In contrast, 'welfare' approach aims at minimizing (to the extent possible) the aggregate sacrifice of all the taxpayers put together. The concept of equal sacrifice admits of different interpretations and one such interpretation tallies with the welfare objective also.

(c) Equal Sacrifice

The term same or equal sacrifice may be interpreted in three alternative ways, namely,

- Equal absolute sacrifice
- Equal proportional sacrifice
- Equal marginal sacrifice

Dalton adds a fourth possible interpretation, namely, ***constant inequality of incomes.***[5] It means that the inequalities of incomes as between different taxpayers should *remain the same after the tax as they were before the tax.*

Out of these four alternative meanings of equal sacrifice, the one termed Equal Marginal Sacrifice also leads to the Least Aggregate Sacrifice which is the goal of Welfare approach.

Correct Meaning of Equity

As Dalton says, '*Prima facie*, it is not clear, on grounds of equity, which of these four is to be preferred.'[6] While applying any of these principles, or interpretations, we have to know the utility function of income of each taxpayer. That is to say, we must know the way in which marginal utility of income varies as income of a taxpayer changes. This is a highly tricky area. Moreover, any precise conclusions regarding the division of tax burden between taxpayers in accordance with their respective ability to pay can be derived only if on the basis of two assumptions, namely:

- Utility can be measured in cardinal terms
- It is possible to have an interpersonal comparison of utility

Factually, both these assumptions are highly unrealistic. But some way has to be found out of the difficulty posed by these assumptions. Accordingly, we make a common-sense and plausible assumption of ***similarity*** of income-utility schedules. This assumption has been made even by those authors who do not accept its scientific validity.[7] For example, Dalton says, 'most of us, at given levels of income, are more alike each other in our normal needs and moods, and our reactions to variations in our income, than some theorists recognize.'[8] Even Lionel Robbins who is considered a champion of positivism, says, 'I do not believe and I have never believed that in fact men are necessarily equal or should always be judged as such, but I do believe that in most cases, political calculations which do not treat them as if they were equal are merely revolting.'[9]

Similarly, Lerner asserts that even if currently different individuals have different capacities to enjoy income, it still points towards the need for bringing about income equality, but slowly, so that over time the lower income people may also acquire a capacity to enjoy large incomes.[10]

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However, while agreeing that it is not possible to have objective measures of utility, we may offer the following observations.

- **Equal absolute sacrifice:** This means that each taxpayer is made to sacrifice the same amount of utility so that the difference between the aggregate utility from income before tax and the utility of income after tax is the same for every taxpayer. Symbolically, $U(Y) - U(-T)$ should be the same for all, where U denotes total utility, Y denotes income before tax, and $(Y - T)$ denotes income after tax. If this doctrine is applied, each member of the society will pay at least some tax. No one will enjoy complete tax exemption.

However, it still remains to be determined whether tax rates should be regressive, proportional or progressive.[11] The answer depends upon the behaviour of marginal utility of income schedules. If we assume that marginal utility curve of each member of the society is (i) located at the same distance from X-axis, and (ii) it is parallel to X-axis, (the marginal utility of income is constant for all incomes), then it follows that each taxpayer should pay the *same absolute amount* of tax. This will mean a lower *rate* of tax as income increases, that is, *regressive rates.* On the other hand, if the income utility schedules fall, that is, if marginal utility of income falls as income rises, then with rising income, tax amount will have to increase to represent the same amount of sacrifice. When the rate of fall in marginal utility of income *equals* the rate of rise in income, *proportional* taxation will result in equal absolute sacrifice. On the other hand, if the marginal utility of income falls at *a rate faster* than the increase in income, then the equal absolute sacrifice will require *progressive* tax rates. *It should be noted, however, that unless the slope of the marginal utility curve is known precisely ever the relevant range, the above conclusions cannot be drawn.*

- **Equal proportional sacrifice:** According to this principle also, no one is exempt from sharing the tax burden. Each taxpayer is supposed to sacrifice the *same percentage* of the total satisfaction which he would have derived from his income. Symbolically, it would mean that the tax liability of each individual is determined in a manner that for his income Y, $[U(Y)\ U(Y - T)]/U(Y)$ is a constant. However, while in the case of equal absolute sacrifice, we were able to lay down the rules of progressive, proportional or regressive tax rates (with reference to the rate at which marginal utility falls with an increase in income), such an easy generalization is not possible in this case. *Here the relative rate of change in marginal and average utility of income will have to be looked into.* If the marginal utility of income remains unchanged, then equal proportional sacrifice would call for a proportional taxation. On the other hand, if the marginal utility of income falls, then we shall have to look at the relative percentage shifts in the marginal and average utilities. If the decline in marginal utility is of the same rate as the decline in the average utility then proportional tax will satisfy this objective. If the fall in the marginal utility is at a rate faster than the fall in the average utility, progressive taxation will be called for. If the fall in the marginal utility is at a rate slower than the fall in average utility, then regressive taxation will be needed to satisfy this criterion.

The above analysis can be presented graphically also. In Figure 4.1, income is measured along horizontal axis and marginal utility of income along vertical axis. If marginal utility falls at the same rate as the rate of rise in income, then the marginal utility curve would be drawn such that for each point the rectangle formed by the abscissa, the ordinate and the two axes bears the same proportion to the area under the curve to the left of this point. The equation of this curve is given by $U'(Y_1)/U'(Y_2) = Y_2/Y_1$ where $U'(Y_1)$ and $U'(Y_2)$ are the marginal utilities of incomes Y_1 and Y_2. Let us draw a straight

line passing through the origin *O*, intersecting the line of proportions at *P* and forming an angle of 45° with each axis. Also let a rectangular hyperbola *APB* pass through point *P*. Then the line of proportions *CPD* would lie below the rectangular hyperbola to the left of *P* and above it to the right of *P*. Now for equal proportional sacrifice we have the following conclusions. If the marginal utility curve coincides with *CPD*, the income tax rates should be proportional; if it falls more rapidly than *CPD*, then the rates should be progressive. And they should be regressive if the marginal utility curve descends less rapidly than *CPD*. Thus, we find that in the case of equal proportional sacrifice, the tax rates do not have to be progressive *simply because* income is subject to falling marginal utility. It should be noted, however, that the above conclusions are based on the assumption that the behaviour of the marginal utility of income (that is, the slope of the marginal utility curve) is known over the entire range of income.

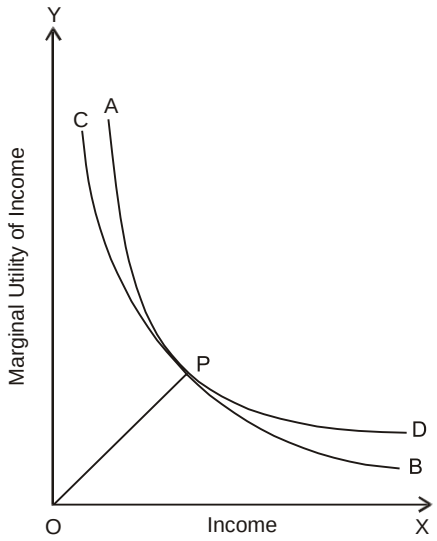

Fig. 4.1 *Equal Proportional Sacrifice*

• **Equal marginal sacrifice or the least aggregate sacrifice:** According to this interpretation of equity, the tax burden should be apportioned in such a way that the marginal utility of income left after tax with any taxpayer is to be the same. Symbolically, for each taxpayer, $U'(Y-T)$ should be the same. In this principle the emphasis is equally on the welfare of the community. It follows from the utilitarian dictum of 'the greatest happiness of the greatest number'. This philosophy asserts, amongst other things, that the aggregate sacrifice imposed on the community by the taxation should be the least possible. Musgrave, Pigou and others consider it the 'ultimate principle of taxation'.[12] However, though this doctrine sets the objective of least aggregate sacrifice by the taxpayers, 'there is no generally accepted view as to what it involves in terms of individual sacrifice.'[13] In this case, if we assume that the marginal utility schedules are identical and sloping downwards, it follows that the taxation would begin with the highest income and once that income is lopped of to the next highest income, both incomes start sharing the taxation equally, and so on. In the end, all taxed incomes are left equal while all non taxed incomes are smaller than the taxed ones. It has been suggested that this principle would be realized by taxing only the largest incomes, cutting down all above a certain level to that level, while exempting all below that level. Thus, all incomes above, say, ` 2,50,000 a year, would be reduced by taxation to that level, and no one, whose income was less than this, would be taxed at all.[14]

It is also clear that with these assumptions, this principle necessarily leads to progressive taxation, a conclusion which is sometimes erroneously supposed to be applicable to other cases as well.

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It is well known that utility cannot be measured and interpersonal comparisons of utility are not possible. On this basis, some writers insist that the above conclusions are not scientifically based. In the absence of any relevant information, it is not possible to prove that the best way of apportioning tax burden would be to enforce equal after-tax incomes. However, Lerner[15] shows that even when the marginal utility schedule are not precisely known, and even when interpersonal comparisons of utility are not possible, still we can conclude that a *shift* towards equality in income distribution would increase the aggregate satisfaction of the community. Lerner bases his argument on the assumption that in the absence of definite information, the *probability* of a loss in aggregate satisfaction may be taken as high as that of a gain in aggregate satisfaction when income is redistributed. However, in his analytical framework, if we move from equality towards inequality, the *amount* of a probable loss is more than the probable gain (and therefore, the amount of probable gain exceeds the amount of probable loss if we move from inequality towards equality). As a result, the society increases its probable aggregate satisfaction when incomes are distributed equally. Lerner's conclusion, however, rests on *probability argument* only and cannot be taken to be *objectively conclusive*.

Pigou says that the right goal of every government is the maximum welfare of the community as a whole. And 'in the special field of taxation, this general principle is identical with the principle of least sacrifice.'[16]

It is noteworthy that it is not possible to directly apply this principle in the field of business taxation because, in the final analysis, incidence of business taxation is shifted to the business owners and/or consumers. Also, it is extremely difficult to structure indirect taxation in accordance with the ability to pay principle, because an individual's ability to pay tax has hardly any direct relationship with his consumption pattern.

4.3.3 Neutrality in Taxation

Tax neutrality is a concept related to tax provisions that follow or conform to an ideal tax system. The tax system should endeavour to be neutral and should not be biased in order to base the decisions made by the system on their economic merits rather than on tax reasons. There are some cases where this neutrality cannot be obtained and the policymakers have to take in some level of alteration to behaviour as inevitable. While, there might be cases where neutrality is undesirable when the policymakers propose to promote certain specific goals like the provision of health insurance or contributions to charity. Scrutinizing methods through which the tax system comes closer to or departs from neutrality can be a significant tool for pondering about a range of tax policy and economic problems.

The most significant role of the tax system is to collect the revenue needed by the government for the functioning of the political system. The purpose behind raising this revenue is that it should not alter the choices that individuals or firms would otherwise opt for due to purely economic reasons. For example, if given a chance to choose between a chocolate-chip ice cream and a vanilla ice cream, people will surely make their choice based on personal tastes and the costs of these products. On the other hand, if policymakers only impose tax on the chocolate-chip ice cream and not on the vanilla ice cream, then people may have to buy the less desirable product since the vanilla ice cream is cheaper.

Moreover, apart from altering one's decisions, non-neutralities in the tax system lead individuals or companies to adopt various methods to reduce their tax payments by either consulting accountants or lawyers to structure or manage the financial transactions in such a manner that they need to pay minimum amount of tax liability.

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There are some instances where digression from a neutral tax system cannot be avoided. It is known that tax payments usually increase with the increase of income, wages or consumption and the market goods consumed by the individual is taxed anyhow either directly or indirectly. The time spent apart from the work hours which is termed as 'leisure' is not taxed. Due to this, people will spend more time and consume more leisure which would result into a reduction in the labour supply. This is the way in which the tax system deviates from the neutral ideal.

Digression from the neutral tax system can sometimes be taken to be the aim of the policymakers because the tax system is formulated in such a way so that it discourages drinking alcohol, smoking, drugs and other such activities and encourages charity, home ownership, health insurance and higher education.

4.4 TAXABLE CAPACITY

The concept of taxable capacity is an expression of the common belief that there is always an upper limit of tax receipts, though there has never been an agreement as to quantum of this limit. The disagreement is fed by the fact that the concept is intimately associated with the totality of circumstances faced by the country, the overall budgetary policy of the government, the range and depth of government services (including provision of merit and other public goods), the productive efficiency of government expenditure, and the purpose for which this concept is used by an analyst or a policy maker. It is for these reasons, that in different countries, the perceived tolerable upper limit of percentage of tax receipts to GDP varies from country to country and, over time, even for the same country.

The nature and contents of taxable capacity of an economy are also closely associated with the place accorded to the State *vis-a-vis* rest of the economy. The economists are known to make a choice between two alternative assumptions. Some assume that the State is an integral part of the economy so that its tax receipts only represent a transfer of resources within the economy. Others assume that the State is something external to the economy and, therefore, its tax receipts cause an equivalent loss of resources to the 'economy'.

4.4.1 Absolute and Relative Taxable Capacity

The concepts of taxable capacity and ability to pay go together, but the two are not equivalent to each other. The ability to pay is used for apportioning aggregate tax liabilities amongst taxpayers. In it, tax liability of taxpayers need not equal their absolute capacity to pay. Also ability to pay is always estimated with reference to the existing set of circumstances and its repercussive effects are ignored. Taxable capacity, on the other hand, refers to the maximum tax which can be collected from a particular taxpayer or a group of taxpayers under consideration. *In this sense, it is known as the absolute taxable capacity* and may be estimated for the entire economy, a region, an industry, a group of individuals, or a single individual. In contrast, in estimating relative taxable capacity, a comparison is made of the absolute capacities of two or more taxpayers or their groups. It is obvious that both concepts have their respective problems without any satisfactory solution.

Check Your Progress

4. What is a taxation theory?
5. Name some of the well-known advocates of the ability to pay theory.
6. 'Income may be divided into two parts.' Name the two parts.
7. What is the best way of apportioning tax burden?

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In economic literature, we find a mention of several proportions of GDP as a measure of absolute taxable capacity of the society as a whole. Obviously, no given proportion can have a universal validity. Moreover, these proportions are based upon the assumption that the government would always have a balanced budget. It is noteworthy, however, that the budget itself affects the taxable capacity of the taxpayers both by its size and composition.

Absolute taxable capacity refers to 'the maximum tax' which can be collected from taxpayers. Assuming that the State has an absolute power to tax away the income and property of the citizens, this absolute capacity gets equated with GDP of the country. However, such an extreme interpretation leads to impractical policy inferences. Every government faces pressures from several vested interests and has to accommodate them to some extent. The decision makers and functionaries of the government itself are not expected to vote for their own complete expropriation. Similarly, taxing away entire GDP by the government means that it is to assume the responsibility of satisfying the entire demand for goods and services by the society, take appropriate decisions in this regard and implement them. The ability of the government to perform this task efficiently is questionable. However, even a partial attempt of the government to do so is bound to have an indeterminable impact upon the country's GDP.

Relative taxable capacity refers to the comparison between the absolute taxable capacity of different tax payers, or industries or groups of tax payers. Here, the concept of ability to pay comes into the picture.

Economists have also examined the possibility of several other measures of absolute taxable capacity based upon criteria which cannot be quantified and have no practical relevance. These criteria include those of 'tolerable limits', 'minimum resistance by taxpayers', 'minimum ill effects', and the like. However, strangely enough, these measures tend to ignore the expenditure needs of the government itself, impact of its expenditure and budgetary policies, level of its administrative efficiency, cost of compliance to the taxpayers, the impact on economic incentives of investors and producers, and so on. This concept also ignores the very relevance of collecting so much of tax revenue by the government as also the relevance of other policy instruments available to the government including public debt operations and the like.

Absolute taxable capacity, in whatever way defined and estimated, is not a constant quantity. It is deeply affected by several short term and long term factors. The problem is that it is not possible to quantify the effect of such variables and changes in taxable capacity cannot be estimated. It follows that there can be no measure of absolute taxable capacity of an individual taxpayer, or a group of taxpayers. ***It is only their relative taxable capacity which can be estimated, albeit imperfectly, by indexing the ability to pay of taxpayers.*** It is however, instructive to take note of the fact that though we cannot measure taxable capacity as such, it is affected by several short term and long term factors.

4.4.2 Factors Determining Taxable Capacity

There are two kinds of factors that determine taxable capacity.

1. Short-run Factors

A host of short-term factors affect taxable capacity of the taxpayers. Income and wealth distribution has an important bearing upon the community's taxable capacity for two

reasons. First, it enhances the capacity of the rich and decreases the capacity of the poor sections. In extreme cases, inequalities maximize taxable capacity for a given GDP. Second, taxable capacity of richer sections goes up because for them marginal utility of income falls. Another important set of factors determining taxable capacity relates to the pattern, structure, rates, and mode of collection of taxes. For example, indirect taxes are expected to be psychologically less burdensome. Taxes on unearned increments, windfalls and capital gains are not expected to be resisted less by the taxpayers. Taxpayers are more willing to pay if the timing and mode of tax payments are less troublesome. During wars and other national emergencies, taxpayers are ready to pay more. Similarly, the expenditure policy of the government and the connected issues have a strong bearing upon what the taxpayers are willing to pay.

2. Long-run Factors

Similar variables operate in the long-run also. If the authorities are helping the economy in capital accumulation, provision of social overheads, improvement in productive efficiency of labour, adoption of better techniques of production and so on, then its taxable capacity will also increase. Monetary and fiscal policies of the government, which bring about economic stability with a high level of income and employment, will definitely add to the taxable capacity of the society. Governmental policies in the field of foreign trade, capital flows, and technology transfers are other factors which profoundly affect the country's taxable capacity.

It should be remembered that of the two concepts of taxable capacity, the relative one is administratively more feasible. Actually, in practice, every government uses it in some form or other while assessing respective tax liabilities of taxpayers. In contrast, the concept of absolute taxable capacity is not at all quantifiable and should be totally discarded.

4.4.3 Usefulness of the Concept

To see whether the concept of taxable capacity has any relevance in practice or not, we must explicitly recognize that the basic problem before the State is not to assess what the private sector should or can pay to the State in the form of taxes. Rather, the primary concern of the State should be the totality of its budget of which tax revenue happens to be only one component. The State, equipped with adequate knowledge of the responsiveness of the private sector should formulate an optimal budget—a budget that is expected to yield maximum possible welfare for the society as a whole. Where precise and quantifiable objective criteria are not available, use of widely accepted criteria and their numerical values should be used. The budget makers should not confine themselves only to the criteria of an illusive 'taxable capacity'. Instead, they should concentrate upon achieving what they believe is an optimal budget and work out its details. Such a budget should simultaneously lay down level and composition of public expenditure, details of tax and non-tax revenues, and public debt policies including borrowings from the central bank of the country. The optimal budget also takes into account the effects of its operations and policies on employment, price stability, balance of payments position, generation of income and output, income and wealth distribution. However, we must concede that given a decision to collect a certain amount tax revenue, the concept of relative taxable capacity has still meaning from the standpoint of equity of division of tax burden. In spite of its limitations, this concept needs to be kept in mind while formulating tax proposals and their details.

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Use of the Concept in India

In India, as in most other countries, broad contours of the concept of relative taxable capacity are used in the formulation of detailed tax proposals. These contours are laid down without insistence on the precise quantitative estimates of relative taxable capacity of taxpayers. Instead, use is made of widely acceptable proxy variables, like levels of income, consumption and wealth. It is noteworthy that even an imprecise measure of relative taxable capacity is better than totally discarding it.

Our direct taxes run in two parallel streams, namely, personal taxation and business taxation. Personal direct taxes have slab based progressive rates with initial threshold exemption limits. Corporate taxes discriminate in favour of small businesses and those which are employment-intensive and/or contribute towards reduction in regional disparities.

Indirect taxes are by their very nature regressive and run counter to taxable capacity of taxpayers. However, the structure of our economy compels us to overwhelmingly rely on indirect tax receipts. Moreover, the proportion of indirect taxes is bound to increase further in the foreseeable future on account of extensive use of service tax. The regressiveness of our indirect taxes is sought to be reduced by various measures like exemptions or lower rates for necessities and unprocessed items of mass consumption. However, switch over to GST is bound to more than counterbalance this trend.

Our country is confronted with the problem of inter-regional economic disparities and there is a general agreement that these should be reduced if not totally eliminated. The Finance Commission can help in solving this problem while formulating its recommendations on transfer of resources from the Centre to the States. To this end, some Finance Commissions have recommended specific purpose grants. In addition, an occasional use of some indicators of States' relative taxable capacities has also been made. The Fifth Finance Commission used a simple ratio of tax revenue (XR) to State Domestic Product (SDP) to measure 'tax effort' of the State under consideration, thereby assuming that its taxable capacity is a given proportion of its SDP. The Seventh Finance Commission measured tax effort by regressing tax revenue on SDP in a linear model. The Planning Commission also measures tax-effort as a ratio of tax revenue to SDP. In each case, relative taxable capacity of two States is taken to be equal to the ratio of their SDPs.

This measure has some obvious deficiencies. It ignores other relevant variables which determine a State's taxable capacity. These variables include, amongst others, (i) degree of urbanization, (ii) degree of industrialization, (iii) degree of monetization of the economy, (iv) distribution of income and wealth, (v) consumption pattern, (vi) administrative efficiency, and (vii) exemptions, rate schedules and coverage of different taxes. The factor of progressivity, in particular, makes SDP a very poor representative of a State's taxable capacity.

The Ninth Finance Commission mentioned two alternative approaches to estimate relative taxable capacity of States and their tax effort, namely, (a) the Aggregate Regression (AR) Approach, and (b) the Representative Tax System (RTS) Approach.

1. Aggregate Regression (AR) Approach

It is a regression technique in which the determined (explained) variable is taken as either total tax revenue or as per capita tax revenue. The explanatory (or independent) factors are some selected 'capacity indicators' such as per capita income or consumption, the level of urbanization, the level of monetization, interpersonal distribution of income,

and the structure of the economy. This multiple regression may be of linear or log-linear variety. The values of the regression coefficients indicate the average effective rates of tax. Taxable capacity of a State is then estimated by substituting actual values of the explanatory variables in the estimated equation.

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AR approach has both merits and demerits. On the positive side, we may mention that it can be used with limited disaggregation of data, and it takes into account interdependence of tax bases. The effect of the size of tax base on tax revenue is also taken care of. On the side of demerits we note that the regression estimates are not derived by relating tax revenue to either actual tax bases or their proxies. Instead, it is related to *tax-capacity indicators* which are also macro ones. And if tax-wise regressions are estimated and added, the inter-dependence of tax-bases gets ignored.

2. Representative Tax Systems (RTS)

In this approach, relative taxable capacity of all States is estimated for one tax at a time. Total yield from the selected tax is divided by the total value of the tax base for all States put together. This gives us an average effective tax rate. This all-State average is then multiplied by the tax base of an individual State to estimate its taxable capacity for the given tax under consideration. This method also enables us to estimate the total revenue which all the States put together can be expected to collect from the tax under consideration.

This method has the drawback of assuming that the tax effort of all the State put together (that is the total tax revenue of all States from a given tax) is equal to their aggregate taxable capacity for the said tax. In reality, a particular tax (such as a tax on agricultural income) maybe under-exploited or over-exploited. This technique also ignores inter-State variations like those of industrialization and urbanization. Moreover, it is extremely difficult to estimate the bases of individual taxes and for each State separately.

4.5 REGRESSIVE, PROPORTIONAL AND PROGRESSIVE TAX

Direct taxes can be classified on the basis of the degree of progression or distribution of their burden on the taxpayers. According to this classification, taxes may be classified as proportional, progressive, regressive and digressive. Atax is called progressive when, with increasing income the tax liability not only increases in absolute terms, but it also increases as a proportion of the income. If the tax liability increases in the same proportion as the increase in the taxpayer's income, it is termed as proportional taxation. If the tax liability as a proportion of taxpayer's income falls with the increase in tax-payer's income, it is termed regressive taxation. In regressive taxation, the absolute tax liability will, of course, increase. In the case of digressive taxation, there is a declining degree of progression as the tax base increases. We shall discuss these taxes in detail.

Check Your Progress

8. What is the concept of taxable capacity?
9. What does absolute taxable capacity mean?
10. Name the two alternative approaches to estimate relative taxable capacity of States and their tax effort as mentioned by the Ninth Finance Commission.

4.5.1 Proportional Tax

In the proportional tax system, all incomes are taxed at a single uniform rate and it does not matter if the taxpayer's income is high or low. For example, if the rate of income tax is 10 per cent, everybody will have to pay the income tax at this single fixed uniform rate as there is no change in the rate of tax with the increase or decrease in the taxpayer's income. Proportional tax system is simple and one can understand it without difficulty. It has been illustrated in Table 4.1.

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Table 4.1 *Proportional Tax System*

Tax Base (Income in rupees)	Rate of Income-tax (per cent)	Amount of Tax (in rupees)	Income after Tax (in rupees)
100	10	10	90
1,000	10	100	900
10,000	10	1,000	9,000
1,00,000	10	10,000	90,000

The above table shows the incomes of four individual taxpayers and the amount of tax they have to pay. The rate of tax which all will be required to pay is 10 per cent of their income. Before the tax, the relative status of the four persons is such that the second person has income ten times higher than the income of the first person, the third person has an income which is ten times higher than the income of the second person, and the fourth person has ten times higher income than the income of the third person. After the tax has been imposed and the tax amount has been collected by the government, the relative status of the persons remains unchanged. Thus, by definition, a proportional tax rate schedule can be established at any level provided the rate remains constant at all income levels. Proportional tax has the following characteristics.

- It is fixed and its proportion does not change with the change in the taxpayer's income and wealth.
- It is fixed in amount and it is never levied in varying percentages.
- Tax does not alter the proportion of difference of income after the payment of tax has been made. In other words, the relative status of the individual taxpayers with respect to income and/or wealth remains unchanged even after the payment of a proportional tax.

Advantages and Disadvantages of Proportional Tax

The main arguments which have been advanced in favour of proportional tax are listed below:

- It is easy for every individual to evaluate the total amount of tax he has to pay. The taxpayers can easily calculate the amount of tax they have to pay to the government.
- The proportional tax is simple and easy to understand. Even a person with an ordinary intelligence can understand its implications without any difficulty.
- There is no change in the existing distribution of income and wealth in society as a result of the levy of proportional tax because all taxpayers pay the tax at a single uniform rate. It is neutral with respect to income and wealth distribution. Consequently, it involves no structural change in the socio-economic set-up of the country.

The main arguments advanced by the critics against proportional tax are:

- In the case of proportional tax, the burden of taxation falls more heavily on the poorer sections of society. The reason for this is that as the income of an individual increases, the marginal utility of money for him diminishes. In other words, the marginal utility of money for the rich is lower than is the marginal utility of money for the poor. If the rich and the poor are taxed at the same rate, obviously the poorer sections of society will be making greater sacrifice than the richer sections.

Consequently, the proportional tax system does not satisfy the important canon of equity and justice in taxation.

- This system of taxation does not reduce the inequalities of income and wealth, rather it enhances these inequalities and increases the gap between the haves and have-nots.
- It does not satisfy the principle of taxable capacity.
- It contributes less to the public exchequer.

4.5.2 Progressive Tax

A progressive tax is a tax which varies with the change in the income of the individual and the rate of tax becomes gradually higher for the higher incomes and lower for the lower incomes. It does not provide for a fixed and uniform percentage for all the income levels. If the income of the taxpayer increases, the rate of tax also increases and if the income decreases, the rate of tax also decreases. According to Taylor, 'as taxable incomes rise under progressive taxation, the effective rate of tax rises for marginal increments of income subject to higher tax rates. This means that the rise in tax liability is more than proportional to the rise in income. Conversely, as personal incomes fall, the effective rates of tax fall and the decrease in taxes is more than proportional to the decrease in income.' A progressive tax rate is one in which the rate of tax increases as the base (income) increases. Recognizing that the amount of tax paid is the result of multiplying the base to the rate, in a progressive tax the multiplier increases as the multiplicand increases. Accordingly, the amount of tax paid will increase at a higher rate than the increase in the tax-base. This case has been illustrated in Table 4.2.

Table 4.2 *Progressive Tax Rate*

Taxable Income Group (in rupees)	Taxable Income of Individual (in rupees)	Rate of income tax (percent)	Amount of tax (in rupees)	Post-tax Income of Individual (in rupees)
0–1,000	1,000	–	–	1,000
1,001–2,000	2,000	15	300	1,700
2,001–3,000	3,000	20	600	2,400
3,001–4,000	4,000	25	1,000	3,000

From the above table, it is evident that an exemption limit is fixed under a progressive tax. Consequently, all those people whose income is less than the prescribed limit of exemption are granted exemption from the payment of tax. It is also evident that the rate of tax goes on increasing with the increase in income. The higher income group tax-payers are taxed at the progressively higher rates. For the purpose of taxation, individual incomes are divided into different tax slabs. For each income slab, there is a different rate of tax and this rate of tax goes on increasing with the increase in income. It is for this reason that a progressive tax is also sometimes referred to as a *graduated tax.*

Advantages of Progressive Tax

Progressive taxation has become popular in all the nations of the world today. The reasons for its universal popularity are the benefits which accrue to the community from it. The important advantages of progressive taxation have been explained.

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- **Progressive tax is based on the ability to pay principle:** A very strong case for progressive tax exists in terms of the ability to pay and the corresponding sacrifice which taxation involves. This argument is based on the assumption that the marginal utility of income falls as income rises. Since the ability to pay increases in direct proportion to the increase in income, the rate of tax increases with every increase in the level of income.
- **Progressive tax promotes equality of income and wealth:** The distribution of income and wealth in society can be made more equitable under progressive taxation because the rich are required to pay the tax at a higher rate than the poor people.
- **Progressive tax is productive:** The government can increase its income substantially through progressive taxation. It can bring about a sizeable increase in its income through the increase in the tax rates during a period of financial crisis.
- **Progressive tax is economical:** Progressive taxation is economical in the sense that the government can bring about a sizeable increase in its income through increases in the rates of tax without any substantial increase in the cost of tax collection.
- **Progressive tax is elastic:** Progressive tax has the characteristic of elasticity since with minor changes in the tax rates substantial changes can be brought about in the tax income of the government.
- **Social justice:** Progressive tax can also be advocated on the basis of social justice which manifests itself in the form of taxing the people according to their ability to pay. Since progressive tax rate schedules bring about equal marginal sacrifice on the part of the taxpayers and since through that approach the whole tax system moves toward the principle of least aggregate sacrifice, such tax system is just as between the individual taxpayers and for the society as a whole.

Disadvantages of Progressive Tax

Following are the main disadvantages of progressive tax:

- **Non-measurability of utility:** The case for progressive tax has been disputed on the ground of non-measurability of the utility. Marginal utility of net incomes of different persons cannot be measured in such a way so as to permit precise comparisons between individuals. Consequently, it is impossible to discover any faultless objective standard of progression or graduation of tax rate on the basis of subjective utility.
- **Progressive tax ignores the benefit-received principle:** The benefit-received theory of taxation does not favour a progressive tax rate especially when we consider the welfare activities of the government. According to this approach, the government should tax the poor people more on account of the benefits received from its welfare activities. Even if one ignores the welfare functions of the state, it becomes a point of debate whether the rich or the poor derive the maximum benefit from the state activities.
- **Progressive tax discourages capital formation in the country:** The degree of progressive taxation has an important bearing on the process of saving and capital formation in the economy. The critics of progressive taxation state that it

is only the rich who can save and, therefore, if they are taxed more heavily than the poor, the saving potential will either be lost completely or reduced substantially and the process of capital formation will be adversely affected.

- **Scope for tax evasion:** Under the system of progressive taxation, there is always a considerable scope for tax evasion and tax avoidance. The taxpayers try to evade the payment of tax by presenting a false statement of accounts before the tax authorities and by finding legal loopholes in the tax provisions.

In spite of the above defects, the system of progressive taxation is now widely recognized as desirable. The main reason for this is that under progressive taxation it becomes possible to eliminate or reduce the glaring economic inequalities in society. This was why Alfred Marshall and Arthur Cecil Pigou extended their strong support to progressive taxation. John Maynard Keynes also emphasized the important role of progressive taxation as a means for increasing the volume of employment in society.

Progressive taxation cannot, however, be applied to all taxes. It is essential to select proper taxes, rates and exemptions so that arbitrariness which can always be levelled against any progressive tax is reduced to the minimum. The principle of progressive taxation has onlylimited applicability in an underdeveloped country on account of the limited scope of direct taxation. In an underdeveloped country, the finance required for economic development cannot be raised only through direct taxation of income and wealth and the main reliance is placed on indirect taxation.

4.5.3 Regressive Tax

In regressive taxation, higher the income of a taxpayer, smaller is the proportion of his income which he contributes to the government in the form of tax. Thus, a regressive tax is the opposite of the progressive tax. Under this system of taxation, the poorer sections of society pay taxes at higher rates than do the richer sections. As the income of an individual increases, the rate of tax diminishes. A schedule of regressive tax rates is one in which the rate of tax decreases as the tax base (income) increases, the multiplier decreasing with the multiplicand increasing recognizing that the tax payable is the result of multiplying the tax rate with the tax base. The system of regressive taxation has been shown in Table 4.3.

Table 4.3 *System of Regressive Taxation*

Tax Base (in rupees)	Rate of Tax (per cent)	Amount of Tax (in rupees)	Income after Tax (in rupees)
1,000	15	150	850
2,000	10	200	1,800
3,000	7	210	2790
4,000	6	240	3,760

Thus, in a regressive system of taxation, the tax rate falls as the tax base (income) increases. The absolute amount of tax payable may, however, increase but at a decreasing rate and it may also decrease. Since this system of taxation is not equitable, it has been abandoned everywhere. The salt tax which was imposed by the British government prior to 1947 in India, was an example of regressive taxation because its burden fell more heavily on the poorer sections of society.

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Digressive Tax

This tax can also be called a *mild progressive tax*. In a digressive tax, the rate of progression does not increase in the same proportion as the increase in income. The rate of tax increases up to a certain limit beyond which a uniform rate is charged. Thus, digressive tax is a blend of the progressive and proportional taxation. The result of this tax is that higher income groups make sacrifices which are less than the lower income groups.

From the above analysis, we can conclude that a progressive system of taxation is the best system of taxation. Now-a-days, most advanced countries of the world follow this system of taxation. India has also gradually adopted the progressive system of taxation.

4.6 OVERVIEW OF INDIAN TAX SYSTEM

Taxation occupies a prominent position in every government's policy framework. Academicians, analysts, administrators and legislators have been paying an uninterrupted attention to its various dimensions including the response of economic decision makers (individuals, households, businesses, etc.) to changes in its framework and ingredients. Since it is next to impossible to have an ideal tax system on account of various hurdles including those posed by inherent dynamism of most economies, the debate regarding the exact format of an ideal tax system continues unabated. Those who are in favour of a market-oriented economic system, advocate a few basic objectives which a tax system should aim at.

- One, it should be neutral in its effects. Factually, however, it is impossible to achieve this objective because of the sheer size of the public budget and its impact on the demand and supply flows.
- Two, to the extent possible, it should be equitable, that is, its burden upon taxpayers should be in proportion to their respective paying capacities.
- Three, every tax system has its own economic cost for the country. This cost should be minimized including the cost of compliance for the taxpayer.
- Four, to ensure that changes in demand and supply flows are smooth and not disruptive, tax system should be stable with only infrequent and essential changes.
- Five, the system as a whole should be transparent and rule-based so that it does not result in avoidable litigation and other problems, including those of tax avoidance and tax evasion.

Hurdles: For a country like ours, devising a suitable system of taxation poses a host of problems and it is not easy to solve them to an acceptable level of satisfaction. In contrast with developed countries, a country like ours faces several hurdles in the task of structuring an optimum system of taxation.

- The first problem relates to the choice of an optimum proportion of (Tax Revenue/ GDP). A textbook prescription, supported by most economists, is that this ratio should be increased to a level as close as possible to that prevailing in developed countries. However, while making this recommendation, a few essential facts are ignored.
  - o The level of tax receipts cannot be decided without first deciding the level of public expenditure. Moreover, while in developed countries, the proportion of

Check Your Progress

11. Define regressive taxation.
12. List two characteristics of proportional tax.
13. What is a progressive tax?

wasteful public expenditure is very low, it is just the opposite in India. Consequently, the level of optimum tax revenue cannot be decided satisfactorily even when the level of public expenditure has been decided.

- o In India, in addition to very low productivity of public expenditure, its composition is also highly skewed. It is neither in harmony with social priorities, nor in conformity with the objective of economic growth. Thus, for example, while several fanciful projects are undertaken, basic necessities of the people like clean drinking water, nutritious food, education, health services, communication, roads, transport, and housing remain neglected. Similarly, very low priority is accorded to the provision of infrastructure without which a rapid and sustained economic growth is not possible. Instead, policies that are pursued encourage conspicuous consumption.

- In the context of Indian fiscal federalism, the problem of division of taxation powers between different layers of government also crops up. Indian Constitution has tried to solve it in the best possible manner. However, some difficulties still remain. First, the local bodies are still not assigned, in their own right, any taxation powers. Second, the arrangements have not been worked out with complete objectivity and responsibility. Third, our Constitution does not allow taxation of the same tax base by both the Centre and states. However, with changing circumstances, a need has arisen for replacing most indirect taxes into a single tax on goods and services. The details of this new tax regime are being worked out, and it is expected to be operative in the near future.
- In our country, choice of taxes is often guided by conflicting objectives, which include several aspects of equity (inter-regional inter-sectoral, inter-individual, etc.), employment generation, capital formation and so on. In the process, questions crop up relating to the choice between direct and indirect taxes, the degree of progression, exemptions and rebates and so on. In recent years, another constraint has emerged in the form of international commitments.
- Moreover, in the process of meeting a multiple set of objectives, our tax system has become very complex, while the need is to simplify it.
- It is noteworthy that steps are being taken to bring about a radical transformation of our tax system. Thus, the contents of a proposed code for direct taxes are being debated and are likely to be adopted in the near future. Similarly, steps are under way to replace service tax and a large number of taxes on goods by a single integrated tax on goods and services (GST).
- In pursuance of its commitment to reform the tax system, the GOI constituted the 'Tax Reforms Committee' in August, 1991 under the chairmanship of Prof Raja J Chelliah.

4.6.1 Features and Assessment of the Indian Tax System

The features of Indian tax system should be studied with reference to its socio-economic objectives and its assessment should also be attempted in a similar manner.

1. Division of Tax Powers between Centre and States

Our Constitution does not allow concurrency of taxation powers between the Centre and States (that is, a given tax base cannot be taxed by both the Centre and States). Moreover, local bodies are assigned taxation powers by States or, if they are in union

territories, by the Centre, out of the State List for their respective territorial jurisdictions. This feature of non-concurrency was incorporated in our Constitution so as to satisfy three criteria of ***uniformity, economy, and efficiency of the tax system as a whole.***

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In this context, the following observations are noteworthy.

- The Centre-State division of taxation powers provided in our Constitution creates a vertical fiscal imbalance in favour of the Centre, and this imbalance has an inherent tendency to widen further over time.
- Criteria of uniformity, efficiency and economy dictate that, with the passage of time, States should surrender some tax heads in favour of the Centre. For obvious reasons, States are opposed to this economic principle.
- Our tax system was bound to acquire increasing complexity with the growth and diversification of our economy. In their pursuit for augmenting tax revenue, authorities found it both necessary and possible to not only restructure the existing taxes but also introduce several new ones. In the process, our tax system has become very complex and is in dire need for simplification. It is noteworthy that, comparatively speaking, the Central tax system became more complicated than that of the States. However, as noted above, some degree of simplicity is likely to be achieved in the near future with the adoption of a code for direct taxes and an integrated GST.
- Till recently, most State taxes, including excise and sales taxes, lacked inter-state uniformity. This was hindering unification of the segmented Indian market into a single integrated one. Now a process has been set in motion to remove this defect. For achieving an all-India integrated market, a beginning was made in 1998 when Chief Ministers of States agreed to replace State sales tax with VAT. By now, all States have switched over to VAT format. Similarly, now most Central excise duties are VATABLE and have been converted from specific to ad valorem ones. In addition, the phasing out of Central Sales Tax also started on the above-said date. The States have experienced an increase in their revenue receipts with the introduction of VAT, partly on account of reduced tax evasion and partly on account of better tax compliance by traders. Next stage of fruitful evolution of indirect tax regime is the introduction of GST.

2. Equity

Officially, our tax system is not regressive, and it does not add to regional and inter-sectoral inequities. However, this claim can be easily refuted.

- The authorities claim that the *rates* of direct taxes are quite progressive, while in indirect taxation, most basic necessities are exempt and luxuries are taxed at higher rates. In practice, however, the criterion of equity is grossly violated by large scale evasion of both direct and indirect taxes.
- By feeding inflation, indirect taxes strengthen inequalities.
- Moreover, our tax provisions are loaded in favour of capital intensive techniques, thereby discouraging generation of employment, particularly in rural areas. This not only adds to inequalities, through widespread unemployment and underemployment, but also forces migration of labour to urban areas with all its concomitant problems and consequences.
- It is commonly believed our tax system is **inequitable as between different sectors of the economy and geographical regions.**

3. Adequacy

A tax system may be rated as adequate if it is sufficiently buoyant and elastic and if it is able to meet the expenditure needs of the authorities. It is seen that, on the whole, our tax system meets the first test but fail in the second. It has exhibited a good deal of **buoyancy** and tax revenue as a proportion of GDP has registered an upward trend. The tax system has also exhibited **elasticity,** when we note that, year after year, the tax revenue has increased substantially through variations in coverage and rates of taxation. Even State taxation satisfies the joint criterion of buoyancy and elasticity.

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Unfortunately, the government has not been able to contain the growth of its own expenditure within reasonable limits. Therefore, even a rapid increase in tax revenue has not been able to meet its expenditure needs, and it has to repeatedly resort to market borrowings and deficit financing.

4. Efficiency

Our tax system fails the test of efficiency. The cost of collection is quite high for both Central and State taxes—more so in the latter case. The cost of compliance for the taxpayers is higher still, that is, taxpayers are made to suffer a lot in terms of time, effort and expenses in meeting the ever changing and complicated procedural requirements of the tax rules and provisions. In addition, they also face the whims of the tax collecting bureaucracy. An important manifestation of inefficiency of our tax system is the prevalence of wide-spread tax evasion which, in turn, is attributable to a number of its other features like high rates, complexity, ongoing modifications, and so on.

5. Simplicity and Certainty

Our tax system fails miserably on both these counts. It suffers heavily from the ills of complex tax laws and rapid changes in their provisions. It is widely recognized that our tax laws are replete with defectively defined basic concepts. This results in ambiguity and uncertainty in interpretation of tax provisions with a concomitant erosion of the efficiency of the entire system. Admittedly, there are some inherent considerations in a developing economy like ours which contribute to the complexity of tax system. These include, for example, ever-increasing complexity and diversity of the economy, its increasing monetisation and the potential of using tax measures as policy tools. However, a simplified, transparent and certain tax system is also indispensable for the dual objective of sustained economic development and socio-economic justice. In this context, three important aspects of our tax deserve a special attention.

- It appears that the government does not take a comprehensive (all-inclusive) view of our tax system resulting in contradictory provisions for achieving socio-economic objectives. It is now saddled with widespread incentives and deterrents, making it highly complex.
- It proceeds on the assumption that the economy responds readily and quickly to every tax change even when it is abrupt and reversible.
- The authorities frequently change the contents and applicability of tax laws retrospectively. This not only violates the principle of certainty but also militates against long term investment planning.

The extent to which recent steps being taken to adopt a Direct Taxes Code and an integrated GST for covering most of the indirect taxes may improve our tax system is yet to be seen. Their exact impact would depend upon the contents of the proposed

measures and their implementation. Between the two, contents of proposed DTC are still a subject of debate and controversy.

6. Evasion

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In our country, widespread tax evasion is an acknowledged fact. Several factors are responsible for this phenomenon including, for example, high tax rates, complex tax laws, lack of proper accounts and information, and administrative weaknesses. It is a matter of great concern that tax evasion not only exists but is also increasing rapidly. The authorities have tried to tackle this problem by making tax provisions and procedures more complicated and by arming bureaucracy with greater discretionary powers. They have, however, paid insufficient attention to real causes of this malady.

7. Reduction in Inequalities

Various studies confirm the widely held view that our direct taxes have not been helpful in reducing inequalities. The impact of highly progressive rates is counterbalanced by widespread tax evasion. Additionally, the pre-VAT regime of indirect taxes also contributed to inequalities. Taxation of inputs and intermediate goods further aggravated the regressivity of the system. This is because such taxes have a cost cascading effect. In an economy like ours which suffers from widespread shortages, an all-pervasive regulatory regime, and a bureaucracy with widespread arbitrary powers, the manufacturers and sellers are able to mark up prices far in excess of the taxes imposed. Moreover, the system breeds a process of taxation of taxes and this pushes up costs and prices still further. And inflation, as we know, contributes to inequalities.

It may be added here that regressivity of indirect taxation is substantially counteracted under VAT and to that extent its contribution to inequalities is weakened. However, VAT also reduces tax evasion, and because of that it increases prices and strengthens inequalities.

Further, the system of direct taxation in our country is loaded in favour of capital intensive techniques, thereby contributing to income and wealth inequalities.

Currently a view is gaining ground that the government should abandon the pretence of using tax measures for reduction in inequalities. Instead, it should use its expenditure policy for this purpose.

8. Capital Accumulation

Ideally speaking, our tax provisions should help the economy in achieving a faster rate of capital accumulation and a growth-oriented investment pattern. Officially, we have always been subscribing to this view. For decades, our direct taxes remained studded with a large number of exemptions, rebates and the like for encouraging savings, and influencing investment pattern. Even now, income from some specified saving instruments enjoys tax concessions; and specified saving investments get a more favourable treatment. This system of incentives had a valid logic when private enterprise was not well developed and when the primary responsibility of growth-oriented investment had been assumed by the authorities.

It may be mentioned that the system of fiscal incentives and regulations relating to saving and investment yielded only sub-optimal results because of some inherent weaknesses of the official machinery. The resultant complexity of tax laws also helped in tax evasion. Chelliah Committee (Tax Reforms Committee) was of the view that our

tax system had failed in encouraging savings. It had succeeded in only influencing the pattern of investment, which should have been left to the market forces. In accordance with this thinking, in recent years, the authorities are changing their policy under which most saving and investment decisions are to be guided by market forces and the government is to act as a facilitator and a regulator.

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9. Service Tax

The Centre has found a new segment of indirect taxation in the form of **service tax,** first by using its residuary powers, and then through a Constitutional amendment. This tax is justified on account of a growing share of services in our GDP. Service tax has been added to the Union List and its collection and appropriation is regulated by law made by Parliament. Successive Central budgets have been extending the coverage of service tax and raising its rates. In the Budget for 2012–13, the basic rate of service tax was raised from 10 per cent to 12 per cent. A small negative list of services was drawn and the coverage of the tax was extended to all services not mentioned in the negative list.

States are also keen to have the power to tax this lucrative source of revenue. Accordingly, the incoming GST model accommodates this demand of States. Currently, only taxation of goods is vatable. The introduction of GST would make taxation of services also vatable.

10. Reforms in Excise Duties since 1996–97

GOI adopted a phased policy of complete overhauling of the structure of Union excise duties, and the process of this overhauling is now complete. It was hoped that a reformed excise duty regime would be able to boost productivity, cut costs, remove distortions in resource allocation, reduce tax evasion, and bring in additional revenue. The components of this restructuring included:

- VAT format of duties
- To the extent possible, shifting them to *ad valorem* basis
- Reducing the number of classifications of taxed goods
- Reducing the number of tax rates
- Reducing the number of slabs of special duties
- Removing exemptions to the extent possible, particularly sector-specific and end-use related ones
- Extending concessions to small scale industry
- Simplification of the assessment procedures

To begin with, the Centre aimed at having only three rates of 'normal' duty, namely, the central rate, the merit rate and the demerit rate. The Budget for 2000–01 shifted to a single, ***modvatable, rate of Central Value Added Tax (CENVAT)*** of 16 per cent. The Stated objective of this step was to provide long-term stability, remove uncertainties and eliminate disputes regarding classification. Changes introduced in successive budgets eventually resulted in one general CENVAT rate or 'mean rate' of 8 per cent ad valorem. The budget for 2009–10 took further steps to revise central excise duty rates to this mean rate. Currently, the Centre is pursuing the policy of modifying duty rates for only those items which need specific attention for some reason. This policy is expected to facilitate the objective of introducing a GST both at national and State level.

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11. Reforms in Customs Duties

For over four decades, we had pursued a policy of protecting domestic industry and agriculture with a combination of quantitative and tariff restrictions on imports. But the introduction of the era of liberalization and globalization on the one hand and our commitments to the WTO on the other led to basic changes in the regime of customs duties as well. We committed ourselves to do away with quantitative restrictions and to reduce our tariff duties to ASEAN levels in a phased manner, tempered with the need to protect our interests in the face of changing global circumstances like the crisis of 2008 and enhancing the competitiveness of Indian exports. In addition, successive budgets have been reducing the duties for specific items or exempting them totally.

12. Direct vs. Indirect Taxes

It is conventional to classify tax receipts into those of direct and indirect taxes and use them as inputs for fiscal policy. However, there is no universally valid optimum proportion of these two categories of tax receipts. Their target proportion depends upon an assessment of ground realities and perception of the decision-makers. In Indian context, some of the noteworthy ground realities are as follows:

- In India, the division of tax-heads between the Centre and States is such that State taxes are overwhelmingly indirect while the Centre is having a fair proportion of both direct and indirect ones.
- As of now, Indian economy offers only a limited scope for raising additional revenue through direct taxation and more so in the case of States.
- Our Constitution permits the Centre to levy direct taxes on almost all forms of 'income' and its 'disposal'. However, while corporation tax and other taxes on income (with their appended components) have always been there, Centre has persistently explored other permissible direct taxes and levied them for varying time intervals. Examples of such taxes include expenditure tax, gift tax, wealth tax, interest tax, and the like. Some other taxes like the Fringe Benefits Tax were levied and withdrawn. Leading indirect taxes of the Centre happen to be customs duties, excise duties (with a few exceptions), and service tax. Similarly, several 'taxes of union territories', also belong to the category of indirect ones.
- Direct taxes of States include tax on agricultural income, land revenue, tax on professions, trade, callings and employment and tax on non-urban immovable properties. Their indirect taxes are of a wide variety and include State excise duties, general sales tax (now VAT), motor spirit sales tax, stamps and registration fees, taxes on vehicles, taxes on goods and passengers, tax and duty on electricity, entertainment tax, advertisement tax, betting tax and so on.
- Central taxes shared with States include both direct and indirect ones. However, surcharges and cesses levied by the Centre are not shared with them.
- With the introduction of GST in the form of its proposed dual model, both Centre and States would acquire concurrency over a number of existing indirect taxes. In addition, the States would also acquire the right to levy service tax.
- States are reluctant to tax agricultural income; and their receipts from tax on professions are subject to Constitutional restrictions. In the final analysis, direct tax revenue of States is primarily confined to Land Revenue, Tax on Professions, and Tax on Urban Immovable Properties. In contrast, they have some very buoyant

and elastic indirect taxes like general sales tax (VAT), State excise duties, stamps and registration, motor vehicles tax, etc. An important but highly obnoxious indirect tax happens to be octroi which has been abolished byall States except Maharashtra.

- Direct taxes with the Centre are highly elastic and buoyant. For this reason, the Centre has been able to maintain a high proportion revenue from direct taxes. Data show that in 2003–04, gross receipts of its direct taxes (from corporation tax, personal income tax, interest tax, other taxes on income and expenditure, eState duty, wealth tax, and gift tax) were 41.32 per cent of its total gross tax receipts. This proportion registered an uptrend in subsequent years on account of various reasons and in 2009–10 peaked at 58.8 per cent. Since then, however, this proportion again started declining and was budgeted at 52.5 per cent. This downtrend was the combined result of a robust growth of service tax and withdrawal of some obnoxious direct taxes. Analysts assert that the Centre should follow a policy of moderate rates coupled with plugging of tax evasion.
- In contrast to the position at the Centre, States' own tax revenue is overwhelmingly from indirect taxes. For example, indirect tax receipts accounted for 97–98 per cent of their own tax receipts in the years 2009–10 and later. The reasons for this phenomenon are well known. Direct taxes of the States suffer from a low potential and the States are also hesitant in their optimum exploitation. The adoption of GST is expected to further ensure that the proportion of revenue from indirect taxes does not decline in the foreseeable future.
- It is noteworthy that, by their very nature, extending the coverage and enhancing rates of indirect taxes is easier for the authorities. It is more so when indirect taxes are *ad valorem.* These steps face milder resistance from the taxpayers and the suppliers, particularly because the latter are able to pass on their incidence to the buyers.
- The authorities claim that they reduce the regressivity of indirect taxes by taxing luxuries at higher rates and exempting some basic necessities like raw food. In effect, however, indirect taxes remain highly regressive. The fact that they feed inflationary forces adds to their regressivity.
- The authorities claim that their tax policy is aimed at improving resource allocation in the economy, generating employment and reducing regional disparities. However, critics claim that, in their policy decisions, the authorities are primarily guided by revenue considerations.
- Some analysts claim that in our country tax/GDP ratio is lower than what it ought to be. However, this claim ignores several pertinent facts including the following. (a) There is nothing like some universally valid ideal tax/GDP ratio. It varies in line with the totality of circumstances faced by an economy. (b) In general, tax/GDP ratio ought to be lower in a poorer country. (c) In India, this ratio has registered a secular uptrend from 6.22 per cent in 1950–51 to around one-fifth of GDP in 2012–13, highlighting an inherent elasticity and buoyancy of the Indian tax system. (d) Along-term uptrend in tax/GDPratio does not necessarilymean an improvement in a tax system. (e) An appropriate tax/GDP ratio can be selected only after taking into account all the aspects of the expenditure side of the budget. This ratio ought to go up if it can be ensured that revenue receipts will be spent efficiently, productively and in line with the needs of the society and economy.

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4.6.2 Indirect Taxation Enquiry Committee (Jha Committee): Report

The Report of this Committee is an important landmark in the process of a long term shift to a system of VAT in our country. Growing dissatisfaction with our indirect tax system led the Centre, in July 1976, to appoint the Indirect Taxation Enquiry Committee under the chairmanship of Shri L. K. Jha. The Committee had very broad terms of reference. It was asked to study the issue of a balance between direct and indirect taxes; and to thoroughly review the existing structure of indirect taxes of Centre, States and Local Bodies, including their elasticity and buoyancy. It was to assess their existing incidence and the scope for their use as a policy tool for influencing resource allocation, etc. In particular, it was asked to examine the feasibility of a VAT, and if found feasible, the manner in which it should be implemented.

The Committee submitted its final report in October 1977. It noted that there had been a steady increase in the share of indirect taxes in India and that it was far greater than the corresponding figures in either developed or underdeveloped countries. But it maintained that it was not possible to lay down on *a priori* grounds an optimum proportion between the two. However, the Committee pointed out some prime criteria of soundness of an indirect tax system. These included adequacy, progressive incidence, and satisfaction of the conventional canons of taxation.

The Committee found that there were no set policy guidelines for prevalent system of indirect taxes. There was an abundance of unnecessary diversity in rates, coverage and procedures, especially in State level indirect taxes. Its biggest defect was its **cost cascading** impact with all the attendant ill-effects which included:

- Difficulties in controlling the incidence on final products
- Incentives for vertical integration for captive consumption and tax evasion
- Reduced effectiveness of indirect taxation as a policy tool
- Hindering exports

Suggestions and Recommendations

The Committee made detailed recommendations for reforming the existing system of indirect taxes, based on the assumption that 'the proposed changes should ensure an adequate and rising flow of resources to the Government and pave the way for an integrated indirect tax system in the countrywhich should be more efficient, more equitable and better oriented to further the objective of planned development'. The recommendations of the Committee included a set of overlapping short term and long term measures.

- **Custom Duties:** The Committee recommended a lowering of import duties, on both raw materials and capital goods.
- **Excise Duties:** The Committee argued in favour of replacing specific duties with *ad valorem* ones because of their *lower regressivity*, greater buoyancy and elasticity, and lesser need for frequent revisions. It also made detailed recommendations regarding their rate structure, slabs, exemptions and concessions. Though it accepted the case for merging the *sales tax* with excise duties and earmarking the enhanced proceeds for the States, the State governments were against such a merger because of their unhappy experience with additional excise duties in lieu of sales tax. It, therefore, did not recommend this merger. Instead, it favoured a single point sales tax at the last stage and a lowering of the rates of Central sales tax.

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- **Octroi:** The Committee, like all earlier Committees, found octroi to be an obnoxious and a harmful levy. It emphatically recommended its abolition, even if it had to be done in stages. To accomplish this task, it recommended that alternative sources of funds should be identified for the local bodies.
- **VAT:** There was also a need for and possibility of long term reforms covering the tax system as a whole. In this context, the Committee made a strong case for the adoption of VAT. **It recommended a VAT system at the manufacturing level—the so-called MANVAT.** It was to start with 3 or 4 industries producing final products. Such a pilot project would enable tax administration to test out procedures and gradually extend the coverage of VAT.

In 1985, the Government introduced MANVAT under the name MODVAT or Modified VAT. The scheme left sales tax out of its purview because the latter was a State subject.

Over time, the term modvat has come to mean an arrangement under which the assessed tax liability of an assessee is reduced by the amount of taxes already paid on the inputs. Accordingly, an excise duty (or a sales tax) is termed MODVATABLE or VATABLE if this credit is allowed and non-modvatable if this credit is not allowed.

4.6.3 Tax Reforms Committee (Chelliah Committee), 1991

In pursuance of its commitment to reform the tax system, the GOI constituted the 'Tax Reforms Committee' in August 1991 under the chairmanship of Prof Raja J Chelliah. It submitted its Interim Report in December 1991, Final Report (Part I) in August 1992 and Final Report (Part II) in January 1993. The ToR of the Committee were quite comprehensive and asked it to address deficiencies from which our tax system suffered and make suitable recommendations for reforming it, so as to make it exhibit all the features expected of a good tax system.

The Committee discussed the feasible framework of an ideal tax system as also the extent to which this ideal had to be compromised in view of ground realities. It pointed out the deficiencies of the existing system and the faulty premises on which it had been erected. It also highlighted the fact that our tax system was an outcome of piecemeal and haphazard steps and lacked a long term vision. Several tax measures turned out to be self-contradictory and created a lot of uncertainty. This had resulted in only making our tax system unnecessarily complicated and with a wrong emphasis on the objective of additional resource mobilization (ARM). This was a faulty approach because of two reasons:

- The economy cannot and did not respond quickly enough to ever changing tax measures.
- The Government used most of the additional revenue for meeting its own expenditure needs.

The Committee observed that the taxpayer in general was increasingly convinced that under the circumstances it was no longer immoral to evade taxes. However, the Committee believed that, with an appropriate and comprehensive policy approach, our tax system could be cured of these ills and it could be made an effective instrument of fast, non-inflationary and equitable economic growth. To this end, the Committee aimed at making the tax system sensitive to the working of non-regulated market forces. Therefore, it recommended, with only a few exceptions, elimination of all exemptions, deductions and rebates. It recommended that the Government should give up its

discretionary powers to alter statutory rates of excise and customs through executive notifications because this resulted in instability, complexity, irrationality and rate multiplicity of the tax structure.

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Based on an analytical coverage of the existing tax structure, the Committee made several detailed recommendations which, in its view, met several criteria, such as, ensuring horizontal and vertical equity in taxation of personal income in conformity with the taxable capacity of the taxpayers. It recommended that wealth tax should be levied only on 'unproductive' assets.

In the field of indirect taxes, the Committee recommended, amongst others, lowering of import duties and reducing the number of import tariffs. Correspondingly, for domestic production, it recommended a simple and easily administrable VAT with only two or three rates. It also recommended that excise duties should be ad valorem and more items should be brought under them. Services should also be taxed.

The Committee also made detailed recommendations covering tax administration, procedures and audit. The Stated thrust of these recommendations was to protect honest taxpayers from harassment and make tax officials accountable for their actions. The tax administration was to have a system of rewards for efficiency and honesty and punishment for lapses.

However, some of the recommendations of the Committee had the potential of unintended ill-effects as well. The Committee failed to notice the unbearable burden resulting from the tax structure visualized by it on honest taxpayers. For example, it considered even a self-occupied residential house an 'unproductive' asset and recommended that its value and notional income should be taxed. It overlooked a simple principle that current tax liabilities of a taxpayer should not exceed his current income. Its recommendations made tax compliance harder for honest taxpayers. Furthermore, the bifurcation of assets into productive and unproductive ones was such that it pushed the asset holders to shift from tangible assets into financial ones. It is a well-known fact that financial assets may help in the production of goods and services but by themselves they cannot produce the same. Similarly, in itself, the concept of a presumptive tax is highly meritorious. But its contents, as recommended by the Committee, were such that the tax authorities were forced to either fully trust the assesse or investigate every case thoroughly.

The Committee took note of the widespread defects in the existing corporate taxation, like favouring debt financing, encouraging mergers, double taxation of dividend incomes, distorting choice between corporate and non-corporate form of business. However, in the name of improving the administration of tax system, the Committee recommended withdrawal of concessions for making donations to associations and institutions carrying out rural development or any scheme or project for promoting social and economic welfare. Similarly, deductions for business expenses were to be restricted to taxes and duties. However, while not allowing interest on any loan from any public financial institution, the Committee recommended that even contributions to provident funds and gratuity funds for the welfare of the employees, or similar other funds should not be deductible business expenses.

4.6.4 Task Forces on Direct and Indirect Taxes, 2002 (Kelkar Committee)

In September 2002, two task forces were set up under the Chairmanship of Shri Vijay L Kelkar.

The ToR of reference of the Task Force on Direct Taxes included:

- Rationalization and simplification of the direct taxes with a view to minimizing exemptions, removing anomalies and improving equity
- Improvement in taxpayer services so as to reduce compliance cost, impart transparency and facilitate voluntary compliance
- Redesigning procedures for strengthening enforcement so as to improve compliance of direct tax laws
- Any other matter related to the above points. Correspondingly, the terms of reference of the Task Force on Indirect Taxation were:
  - To review customs and Central excise law and procedures and make recommendations on their simplification, reducing cost of compliance and facilitating voluntary compliance
  - To make recommendations relating to increased use of automation for a user friendly and transparent tax administration
  - To review statutorily prescribed records, documents and returns and suggest their simplification
  - To make recommendations for in-built procedures for time-bound disposal of matters
  - Any other matter relating to legal provisions and administration for facilitating taxpayers and improving compliance

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The Task Force on Direct Taxes was required to submit a consultation paper to the Government containing the recommendations, including those on improvement in 'taxpayer services', and procedures for strengthening enforcement. Similarly, the Task Force on Indirect Taxes was required to submit a consultation paper containing its recommendations on simplification, reduction in the cost of compliance of customs and central excise duties, automation of tax administration, simplification of statutory returns, records, procedures for time bound disposal of matters and different aspects of legal provisions to facilitate taxpayers and to improve tax compliance. The consultation papers were submitted in November 2002 and the final reports in December 2002.

The Task Force on Direct Taxes took the stand that in personal taxation, the number of tax slabs should be few, their range should be wide, and the highest rate should be moderate. It also favoured elimination of all exemptions and removal of restrictions on the manner in which a saver may keep his savings. At the same time, for the sake of equity, its recommendations were meant to have a human face and protect the interests of the vulnerable sections. However, it did not favour a single tax rate because of its various drawbacks. The Task Force also made elaborate recommendations for reforming the tax machinery and making the entire tax system transparent and non-discriminatory.

1. Personal Income Tax

- Increase in exemption limit to ` 1 lakh with a higher exemption limit for widows and senior citizens.
- Replacement of three slabs by two slabs of tax; 20 per cent up to an income of ` 4 lakh and 30 per cent for incomes exceeding ` 4 lakh. Elimination of surcharge on income tax.
- Elimination of Standard Deduction.

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- Reduction of interest on housing loans deductible from income from `1,50,000 to `50,000. Alternatively, an interest subsidy of 2 per cent on housing loans below `5 lakh.
- A tax rental agreement whereby States should agree to let the Centre levy and collect tax on agricultural incomes and transfer the tax proceeds back to the States.
- Elimination of various tax incentives for savings and interest income etc. (under Sections 80, 80L, and 10).
- Deduction under Section 80CCC for contribution to pension funds to be increased from `10,000 to `20,000. The scope of this Section to be enlarged to cover a large number of pension/annuity schemes within this ceiling.

2. Corporate Taxation

- Reduction in corporate tax to 30 per cent for domestic companies. Tax rate for foreign companies to be 35 per cent. Exemptions from tax on dividends and capital gains from listed equity.
- General rate of depreciation to be reduced from 25 per cent to 15 per cent.
- Elimination of minimum alternate tax (MAT).
- Long-term capital gains to be aggregated with other incomes and taxed at normal rates. Exemption to continue if gains invested in a house or bonds of National Highway Authority.
- Removal of exemptions under several Sections.
- Income of mutual funds derived from short-term capital gains and interest to be taxed at a flat rate in the hands of the mutual funds.
- Merger of tax on expenditure in hotels with service tax.

3. Both Personal and Company Taxation

Abolition of Wealth Tax.

4. Tax Administration

A number of recommendations for improving the quality of tax machinery; including those on raids and seizures, enhancing accountability of tax officials, extension of PAN to all economic transactions, and so on.

Recommendations of the Task Force on Indirect Taxes

1. Excise Duties

- All levies to be replaced by only one levy, namely, CENVAT.
- Zero excise duty on life saving drugs and equipment, security items, food items and agricultural products; varying rates of duties on several other specified categories.
- Duty exemption for small scale sector to be limited to only units with turnover of `50 lakh. Duty exemption limit for larger SSI units to be brought down gradually to `50 lakh.
- Uniformity in all State legislations, procedures and documentation relating to VAT.

- Extension of service tax in a comprehensive manner leaving out only a few services by including them in a negative list. A separate legislation on service tax to be integrated finally with the Central excise law.

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2. Customs Duties

- Multiplicity of levies to be reduced to three, namely, basic duty, additional duty, and anti-dumping duty.
- A set of different specified duties on specified items, such as 150 per cent on specified agricultural products and demerit goods.
- All exemptions to be removed except in the case of life saving goods, goods of security and strategic interest, goods for relief and charities and international obligations including contracts.

3. Tax Administration

A number of recommendations for making all procedures trust based, simple, fast and transparent. Full automation of all customs and excise commissionerates.

Comment

- The Task Forces made penetrating and far-reaching recommendations relating to reforms of tax administration. They were designed to improve the efficiency of the tax administration by making it less arbitrary and more transparent.
- In the areas of excise and customs duties, need for specific exceptions to the general rules was recognized and recommendations made.
- But the principle of essential exception and other factual realities were forgotten by the Task Force on Direct Taxes. It goes without saying there are forceful arguments in favour of simplifying our tax laws and procedures by removing avoidable exemptions, rebates and other concessions. However, in our country, certain specific facts dictate that these tax concessions should not be removed indiscriminately without considering their associated effects on certain economic activities and social groups. In the light of these facts, some of the recommendations of the Task Force should were ignored or were suitably modified.
    - Standard deduction was available only to the salaried classes. It so happens that this is the only class which can hardly escape its tax liability. The self-employed and the business classes are known to successfully conceal a part of their taxable incomes. Accordingly, removal of standard deduction created an added element of inequity as between different classes of taxpayers.
    - Similarly, social security is nearly non-existent in our country. Alarge number of people depend upon income from specified savings. Therefore, removal of tax concessions on income from specified savings is not justified, unless the initial exemption limit is raised quite high and the rate of the first tax slab is very nominal.
    - In our economy, house building occupies a special place. It has beneficial multiplier effects. It has a huge potential of generating income and employment and, in the process, reduce poverty and improve living standards of the masses. Tax incentives for housing activity are provided even in very rich countries like the United States. By recommending the phasing out of tax incentives on

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house building, the Task Force prescribed a deadly blow to the economy as a whole as also to the poor and middle classes.

- The Task Force recommended a levy of capital gains tax in such a manner that it would discourage saving and long-term investment and instead encourage consumption and short-term speculative transactions—something which cannot be justified for our poor economy.
- Recommendations of the Task Force were based upon the philosophy of discouraging saving and encouraging immediate consumption. The Task Force forgot the basic reality that a developing country like ours needs savings and safe and remunerative avenues of their investment for accelerating and sustaining economic growth. The bubble of economic growth fed by current consumption cannot be sustained and is bound to result in a crisis sooner or later.

Guided by the recommendations of the Kelkar Committee, the measures taken by the Centre introduced additional complexities in our tax system, introduced some obnoxious taxes like the 'Fringe Benefits Tax', removed various exemptions and concessions which, instead of strengthening our social security system, weakened it further. Examples of such retrograde measures include: (i) enlisting residential houses as unproductive assets, (ii) reducing incentives for savings, (iii) penalizing those who contribute towards rural welfare and uplift programmes or contribute to the education, health and housing of their employees, and so on.

It is, however, noteworthy that the Centre has hit a gold pot in the form of Service Tax. Its coverage has been widened with every budget and reached the stage (in 2012–13) of taxing all services with the exception of those in the 'negative list'. And it is intended to achieve an integrated system of taxation of both goods and services in the near future. Steps are also in the pipeline to adopt a code for direct taxes.

4.6.5 White Paper on Black Money (May, 2012)

A document entitled 'Black Money: White Paper, May 2012' was tabled by GOI in Parliament on 21 May 2012. Given below is a summary description of this White Paper with some pertinent comments on the same.

Meaning

It should be recalled that the term black money refers to that part of income and/or wealth (whether acquired through legal or illegal means) of an economic entity which has been concealed from tax authorities. The amount of black money may refer to its generation over a given period of time (say a year), or cumulative value of its generation over several years. The White Paper (WP) was a comprehensive document covering a wide spectrum of the problem of black money in India together with its associated international ramifications.

Causes

Generation of black money can be attributed to a wide variety of causes including legal, administrative, ethical and others. All these are interlinked and interdependent and feed upon each other. It is not possible to disentangle them, though they may be discussed singly or in groups for the sake of simplicity of presentation. Over time, while some of them have been understood and tackled in varying degrees, many more have cropped up

with deep rooted foundations. Leading causes of the growing menace of black money include the following:

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- There has been a rapid increase in criminal and illegal activities which, by their very nature, generate black income and wealth.
- In India, there has been a steady erosion of the integrity index of administrative and political set ups. This has helped criminal and illegal activities including deeper and wider spread of corruption. Consequently, black money has become an all-pervasive phenomenon in official and political circles as well.
- Dynamism and rapid transformation of economies, including that of India, has created additional scope for generation of black money. Several manifestation of this transformation is seen in the financial sector with the emergence of a host of financial products and growth of trading in them, as also facilities for rapid transfer of funds. ***WP on black money specifically pointed out the role of foreign investment, corporate structures and their ways of doing business, and even stock markets in generation of black money.*** *WP* ***also cites participatory notes as a source of generation of black money, something the government had often denied. WP also blamed derivatives as one of the innovative methods in generating black money while the government itself had been recommending it and rating it as a valuable policy tool.***
- Equally powerful are the phenomena of increasing globalization and interdependence of world economies, growth in trade and commerce, growing dominance of MNCs, discovery of ever-new avenues and methods of trading, and so on.
- Tax regime in India has become highly complex supported with procedures, rules and regulations which are difficult to comply with. In particular, the honest taxpayer has come to think that, for him, the cost of compliance is very high.
- Over time, an honest taxpayers has increasingly come to believe that with corroded integrity quotient of the administrative and political set ups, he is somehow ethically justified in evading taxpaying.
- It is widely believed that in our country, political funding is a major contributory factor in generating black money. However, the WP failed to mention this fact.
- The WP specifically identified transaction in immovable property and other assets like gold as leading contributory factors in generating black money. Other fields of activity which are major generators of black money include mining, and modern corporate structure.
- Globalization and expanding external trade have facilitated under-invoicing of exports, over-invoicing of imports. They have also facilitated several other forms of international movement of unaccounted funds.
- There has been a phenomenal growth of international tax havens facilitating stashing of black money abroad.
- The WP admits that during 1970s very high rates of income tax, combined with the prevailing shortages, resulted in excessive controls and licences, and thereby provided further incentives for tax evasion. It was largely in this economic environment that generation of black money became highly prevalent and acquired serious proportions. These high rates were subsequently brought in stages to 30 per cent in 1997. The WP also listed high tariff and non-tariff barriers as contributory factors to tax evasion.

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Estimates

There are no precise or even near-reliable estimates of generation of black money in India, or its cumulative figures, or even the forms of assets (except some well known ones like immovable property) in which it is kept. As yet, no widely acknowledged effective methodology for making such an estimation has been discovered. By its very definition, black money is not accounted for in the records with the authorities. Consequently, accuracy of estimated figures of a study primarily depends upon the underlying assumptions made by the investigators, the reliability of the data used by them, and the sophistication of incorporated adjustments. The estimates made so far do not exhibit any inter-studyuniformity, unanimity, or consensus about the best methodology or approach to be used for this purpose. There have also been wide variations in the reported estimates, thus casting a doubt over their acceptability or usefulness for policy purposes. Such a wide variation also highlights the limitations of the methods used in these studies. As a result, the only accurate Statement that we can make is that the phenomenon of black money has gained strength over time, it is spreading its tentacles even now and it needs to be tackled effectively.

However, it is noteworthy that the problem of black money is not something which can be ignored. Estimates of black money with its multi-dimensional aspects are essential inputs for any meaningful economic policy for our country. Therefore, with the objective of filling this information gap to the extent possible, the Central Board of Direct Taxes engaged, on 21 March 2011, three research bodies, namely, the NIPFP, NCAER, and the National Institute of Financial Management (NIFM) for completing a study within a period of 18 months covering several aspects of this problem. The reports of these bodies were expected in September 2012.

Remedies

The WP suggested a wide variety of remedies covering almost all imaginable fields of economic activities concerning Indian economy and feasible administrative measures for tackling the menace of black money. Some of these measures acknowledged the difficulties posed by the new era of liberalization and globalization fed by the phenomenal growth of the financial system, new methods of doing business, and the like. At the same time, WP sought remedies in the very context of emerging scenario with remodelling old strategies and devising new ones. The general thrust (as Stated in WP) of the suggested remedies was to increase the cost of tax evasion and to curb the use of new methods of tax evasion which the dynamism of modern interdependent economies had brought into existence.

The WP highlighted government's efforts in several international forums for building up inter-countrycooperation in different fields and institutionalize cooperation along various fronts. These included Tax Information Exchange Agreements and DTAAs, etc. These agreements, however, retained several deficiencies which rendered them rather ineffective. Suggestions made by WP also repeated several old remedies which had till now proved ineffective.

Effectiveness of Proposed Remedies

- As pointed out above, international agreements for curbing the menace of black money and bringing home the stashed amounts harbour several deficiencies which render them ineffective for the purpose.
- The WP repeats several remedies which had been tried earlier and found ineffective.

- Political funding is a widely recognized source of black money. But WP totally ignored it.
- The WP talked of one time amnesty for funds stashed abroad and gave examples of its successful use in some countries. However, it just pointed out the prevalent sentiment against this measure and left it there.
- Several measures suggested by WP were in the nature of giving more discretionary powers to the tax authorities and administrative machinery such as mandating a no-objection certificate from the tax department on immovable property transactions. These proposals were viewed by the analysts as a return to the days of excessive controls and inspector raj resulting in the creation of insurmountable barriers in the path of economic growth.

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4.7 SUMMARY

In this unit, you have learnt that:

- The totality of all taxes being levied by a government is termed its tax system. The authorities view their tax system as a means towards achieving one or more objectives (such as, raising revenue) and, in conformity with them, they identify certain criteria or principles as guidelines for building the tax system.
- Every tax system generates not only revenue receipts for the government, but also innumerable other spill over effects. To a typical academician, an ideal tax system is the one which is likely to maximize the sum total of its most desirable effects.
- Adam Smith was interested in enabling an economy to increase its productive capacity and thereby achieve a higher rate of growth. Further, he firmly believed that private sector was more efficient than the public one and, therefore, the primary responsibility of economic growth should rest with the private sector.
- Economic thinking, particularly after World War II, has undergone a radical transformation in which the State has been assigned a comprehensive role for tackling the country's economic and social ailments.
- There are three ways of classifying tax theories. A taxation theory is a model depicting a tax system built upon various identified assumptions and objectives with a set of corresponding features.
- The benefits received theory proceeds on the assumption that there is basically an exchange or contractual relationship between taxpayers and the State.
- In due course, the benefits approach gradually came to reflect a philosophy that taxation was basically a payment for the protection provided by the State.
- In 1888, Antonio de Viti de Marco (another Italian economist) made an assumption similar to that of Sax that the members of the society consume public services in proportion to their incomes. This assumption should have led him to advocate proportional taxation.
- The benefits received principle of taxation is based upon the assumption that market mechanism fails to supply goods and services which have a quality of publicness in them. It assumes that these goods and services are so important that arrangements should be made for their supply.

Check Your Progress

14. Why was the feature of non-concurrency incorporated in the Indian Constitution?
15. What led to the appointment of the Indirect Taxation Enquiry Committee by the Centre?
16. What were the measures taken by the Centre in the guidance of the Kelkar Committee?

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- The well-known advocates of the ability to pay theory include Rousseau, J. B. Say, Adam Smith, J. S. Mill, among others. It has been used as a theoretical underpinning for several policy prescriptions like progressive taxation, reduction in income and wealth inequalities, and removal of regional disparities, etc.
- The basic tenet of the ability to pay doctrine is that the distribution of tax burden between members of society should be on the criteria of justice and equity which, in turn, implies that the tax burden should be apportioned according to their relative ability to pay.
- Income is one of the most accepted indices of ability to pay, though it is usually supplemented by other tax indices also. Even Adam Smith, while asserting the ability criterion in his first canon of taxation, maintained that such ability is in proportion to respective incomes of the taxpayers.
- Subjective approach to the ability to pay proceeds on the assumptions that a taxpayer undergoes a hardship or suffers a sacrifice by paying the tax.
- Tax neutrality is a concept related to tax provisions that follow or conform to an ideal tax system. The tax system should endeavour to be neutral and should not be biased in order to base the decisions made by the system on their economic merits rather than on tax reasons.
- Digression from the neutral tax system can sometimes be taken to be the aim of the policymakers because the tax system is formulated in such a way so that it discourages drinking alcohol, smoking, drugs and other such activities and encourages charity, home ownership, health insurance and higher education.
- The concept of taxable capacity is an expression of the common belief that there is always an upper limit of tax receipts, though there has never been an agreement as to quantum of this limit.
- Absolute taxable capacity refers to 'the maximum tax' which can be collected from taxpayers. Assuming that the State has an absolute power to tax away the income and property of the citizens, this absolute capacity gets equated with GDP of the country.
- In India, as in most other countries, broad contours of the concept of relative taxable capacity are used in the formulation of detailed tax proposals. These contours are laid down without insistence on the precise quantitative estimates of relative taxable capacity of taxpayers.
- Direct taxes can be classified on the basis of the degree of progression or distribution of their burden on the taxpayers. According to this classification, taxes may be classified as proportional, progressive, regressive and digressive.
- If the tax liability increases in the same proportion as the increase in the taxpayer's income, it is termed as proportional taxation.
- If the tax liability as a proportion of taxpayer's income falls with the increase in tax payer's income, it is termed regressive taxation.
- A progressive tax is a tax which varies with the change in the income of the individual and the rate of tax becomes gradually higher for the higher incomes and lower for the lower incomes.
- In regressive taxation, higher the income of a taxpayer, smaller is the proportion of his income which he contributes to the government in the form of tax.

- Our Constitution does not allow concurrency of taxation powers between the Centre and States (that is, a given tax base cannot be taxed by both the Centre and States). Moreover, local bodies are assigned taxation powers by States or, if they are in union territories, by the Centre, out of the State List for their respective territorial jurisdictions.
- The Centre has found a new segment of indirect taxation in the form of **service tax,** first by using its residuary powers, and then through a Constitutional amendment. This tax is justified on account of a growing share of services in our GDP.
- Growing dissatisfaction with our indirect tax system led the Centre, in July 1976, to appoint the Indirect Taxation Enquiry Committee under the chairmanship of Shri L. K. Jha.
- Guided by the recommendations of the Kelkar Committee, the measures taken by the Centre introduced additional complexities in our tax system, introduced some obnoxious taxes like the 'Fringe Benefits Tax', removed various exemptions and concessions which, instead of strengthening our social security system, weakened it further.
- Adocument entitled 'Black Money: White Paper, May 2012' was tabled by GOI in Parliament on 21 May 2012.

4.8 KEY TERMS

- **Tax system:** The totality of all taxes being levied by a government is termed its tax system.
- **Tax neutrality:** It is a concept related to tax provisions that follow or conform to an ideal tax system.
- **Proportional taxation:** If the tax liability increases in the same proportion as the increase in the taxpayer's income, it is termed as proportional taxation.
- **Regressive taxation:** If the tax liability as a proportion of taxpayer's income falls with the increase in tax payer's income, it is termed regressive taxation.
- **Progressive tax:** It is a tax which varies with the change in the income of the individual and the rate of tax becomes gradually higher for the higher incomes and lower for the lower incomes.

4.9 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Adam Smith was interested in enabling an economy to increase its productive capacity and thereby achieve a higher rate of growth. Further, he firmly believed that private sector was more efficient than the public one and, therefore, the primary responsibility of economic growth should rest with the private sector.
2. The canon of equality tries to observe the objective of economic justice.
3. The latest principles of taxation include not only imposition of taxes, but also tax concessions, rebates, exemptions, and so on.
4. There are three ways of classifying tax theories. A taxation theory is a model depicting a tax system built upon various identified assumptions and objectives with a set of corresponding features.

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5. The well-known advocates of the ability to pay theory include Rousseau, J. B. Say, Adam Smith, J. S. Mill, among others.
6. Income can be divided into: (i) earned income, and (ii) unearned income.
7. The best way of apportioning tax burden would be to enforce equal after-tax incomes.
8. The concept of taxable capacity is an expression of the common belief that there is always an upper limit of tax receipts, though there has never been an agreement as to quantum of this limit.
9. Absolute taxable capacity refers to 'the maximum tax' which can be collected from taxpayers. Assuming that the State has an absolute power to tax away the income and property of the citizens, this absolute capacity gets equated with GDP of the country.
10. The Ninth Finance Commission mentioned two alternative approaches to estimate relative taxable capacity of States and their tax effort, namely, (a) the Aggregate Regression (AR) Approach, and (b) the Representative Tax System (RTS) Approach.
11. If the tax liability as a proportion of taxpayer's income falls with the increase in tax¬payer's income, it is termed regressive taxation.
12. Proportional tax has the following two characteristics.
    - It is fixed and its proportion does not change with the change in the taxpayer's income and wealth.
    - It is fixed in amount and it is never levied in varying percentages.
13. A progressive tax is a tax which varies with the change in the income of the individual and the rate of tax becomes gradually higher for the higher incomes and lower for the lower incomes.
14. The feature of non-concurrency was incorporated in our Constitution so as to satisfy three criteria of uniformity, economy, and efficiency of the tax system as a whole.
15. Growing dissatisfaction with our indirect tax system led the Centre, in July 1976, to appoint the Indirect Taxation Enquiry Committee under the chairmanship of Shri L. K. Jha.
16. Guided by the recommendations of the Kelkar Committee, the measures taken by the Centre introduced additional complexities in our tax system, introduced some controversial taxes like the 'Fringe Benefits Tax', removed various exemptions and concessions which, instead of strengthening our social security system, weakened it further.

4.10 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What are the canons of taxation prescribed by Adam Smith?
2. What are the latest additions made in the principles of taxation?
3. How can taxation theories be classified?
4. List the limitations of the benefits received approach.

5. State the basic tenet of the ability to pay doctrine. Also, describe the objective indices of ability.
6. Write a note on the benefits received theory and the hurdles on its path.
7. What is tax neutrality?
8. State the difference between taxable capacity and ability to pay approach to taxation.
9. 'Progressive system of taxation is the best system of taxation.' Give reasons.
10. Provide a brief coverage of the contents of the Indirect Taxation Committee (Jha Committee) Report. Comment on the view that it initiated a long and fruitful process of reforming our indirect taxes along the right lines.
11. State the claims that recommendations of Kelkar Committee failed to take into account some of the ground realities, particularly the need to encourage savings and healthy investment.
12. State the reasons for which the government has not been possible to quantify the menace of black money in India.

Long-Answer Questions

1. Describe the various canons of taxation.
2. Explain the benefits received theory of taxation.
3. Assess the ability to pay approach to taxation.
4. What do you mean by neutrality in taxation?
5. What is taxable capacity and its types? What are the factors determining taxable capacity?
6. Discuss the concept of regressive, proportional and progressive tax in detail.
7. Even advocates of a neutral tax system agree that the tax system should meet certain criteria. Briefly describe these criteria and enumerate hurdles in achieving such a tax system in a country like ours.
8. Provide a detailed description of the essential features of Indian tax system.
9. Briefly highlight the findings of the Tax Reforms Committee (Chelliah Committee) and critically examine its main recommendations.
10. Examine the salient aspects of the Report of the Kelkar Committee. Would you agree with the view that its recommendations were a mixture of some much-needed reforms of our tax system and introduction of some highly obnoxious taxes?
11. Write a comprehensive note on the White Paper on Black Money of May 2012. Do you think, the remedies suggested in it would successively tackle the problem of black money? Give reasons for your answer.

4.11 FURTHER READING

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Endnotes

[1] E. R. A. Seligman, *Progressive Taxation in Theory and Practice*, 2nd ed., American Economic Association, Princeton University Press, Princeton, 1968.

[2] In progressive taxation the tax liability increases both absolutely and as a proportion of income as income increases. In regressive taxation, though the absolute tax liability may increase with increasing income, as a proportion of income it will fall. In proportional taxation, tax liability stays as a given proportion of income irrespective of income level.

[3] Fiscal policy represents use of budgetary items and components as policy tools.

[4] E. H. Plank, *Public Finance*, Richard D. Irwin, 1953, p.180.

[5] H. Dalton, *Public Finance*, Routledge & Kegan Paul Ltd., London, 1949, p.91.

[6] *Ibid.*

[7] 'It remains to be seen whether a workable and reasonably meaningful measure of utility can be developed in time and whether thereby the subjective concept of ability-to-pay can be given an operational meaning. At this stage, we do not possess a universally accepted measure of utility by which to apply one or the other sacrifice formula.' R. A. Musgrave, *The Theory of Public Finance*, McGraw-Hill, 1959, p.109.

[8] H. Dalton, *op. cit.*, p. 92, footnote 2.

[9] Lionel Robbins, "Interpersonal Comparisons of Utility", *Economic Journal*, Vol. 48, No. 4, December 1938, pp. 635–41, quoted in R. A. Musgrave, *op. cit.*

[10] A. P. Lerner, *Economics of Control*, Macmillan, New York, 1944.

[11] A tax is progressive if, with increasing income, the tax liability increases both in absolute amount and as a proportion of the income. In a proportional tax, the tax liability as a proportion of income remains unchanged. In regressive taxation, with an increase in income, tax liability falls as a proportion of income.

[12] E. H. Plank,, *op. cit.*, p. 177.

[13] R. A. Musgrave, *op. cit.*, Ch. 5, and A. C. Pigou, *A Study in Public Finance*, 3rd ed., Macmillan, 1951, Part II, Chapter 1.

[14] H. Dalton, *op. cit.*, pp. 86–87. Also, Pigou, *op. cit.*, p. 57.

[15] A. P. Lerner, *Economics of Control*, Macmillan, 1957, p. 57.

[16] A. C. Pigou, *op. cit.*, p.43.

UNIT 5 EFFECTS OF TAXATION

Structure

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5.0 INTRODUCTION

The effects of taxation cover all the changes in the economy resulting from the imposition of a tax system (or a variation in it). One may say that without taxation, a market economy would attain certain production, consumption, investment, employment and similar other levels and patterns. The presence of taxation modifies these levels and patterns for good or for bad and such modifications may collectively be called the effects of taxation.

There was a time when under the influence of the *laissez faire* philosophy, it was advocated that the State should have a neutral tax policy. In other words, revenue raised by the State should cause none or minimum possible variation in economic parameters generated by the market forces. Such a policy is also referred to as 'general fiscal rationality.' It implies that the fiscal action of the government should not, to the extent possible, disturb the resource allocation in the economy or affect relative position of its parameters. This view implies that in a free market mechanism, the patterns of resource allocation and production conform to the social marginal rates of substitution between different goods and services. Obviously this claim rests on two fundamental assumptions.

- Economic parameters generated by the free market are optimum and attainable by the economy.
- State can raise adequate tax revenue without undue interference in the working of the economy.

Both these assumptions are unrealistic. It is now well recognized that the market forces by themselves seldom lead to an optimal outcome. A free market mechanism breeds trade cycles, inequalities of income and wealth, imbalanced growth and similar other ills. Actually it is able to move closer to an optimum allocation of resources and other desirable results only when certain strict conditions are satisfied. It is assumed, for example, that the market is perfectly competitive, while in reality there are all sorts of imperfections caused by irrational consumer behaviour, monopolistic practices of the

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suppliers, technical rigidities, imperfect knowledge of the market, and so on. Similarly, another stringent condition is that of the absence of externalities of goods—a condition which is not satisfied in the case of public goods.

A modern State needs quite a sizeable revenue which forms a significant proportion of the total national income. Its sheer size rules out neutrality. It is next to impossible to have such a tax system. Moreover, there is a need to rectify deficiencies of the market mechanism and tax system provides a fertile ground for devising various policy tools for this purpose. Therefore, tax tools may be devised with the aim of restructuring market decisions for maximizing aggregate social benefits. These tools should help in bringing about equality between social marginal rates of substitution and technical rates of substitution between pairs of goods and services. The same idea may be extended to the economy as a whole in choosing between public and private goods.

Effects of a tax system are generally a multi-stage phenomenon admitting a corresponding stage-wise examination thereof. For example, the first stage covers the fact of tax imposition itself which reduces the disposable income of those upon whom the statutory responsibility of paying the tax rests. The final stage of effects is associated with the fact of incidence. A number of stages exist in between these two extremes. The effects of taxation may be studied at different levels of aggregation. The choice depends upon the purpose of our analysis and/or comparing the effects of different taxes on the working of the economy. In this unit, you will get acquainted with the various effects of taxation.

5.1 UNIT OBJECTIVES

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

- Assess the concept of tax on income and its effect on work effort
- Discuss the classification of commodity tax
- Analyse the concept of impact and incidence
- Describe the effects of taxation on production and price in different market conditions
- Explain in detail the theories of tax shifting
- Evaluate the concepts of elasticity and buoyancy of tax

5.2 TAX ON INCOME AND ITS EFFECT ON WORK EFFORT

A multiple tax system has widespread ramifications on the economy and different kinds of taxes have different kinds of effects on the private business. Taxes affect the economy in many ways by affecting macro variables like consumption, saving, investment, price structure, price levels and work effort. In India, there is a wide range of direct and indirect taxes. Direct taxes include personal and corporate income taxes on current earnings, wealth tax and gift tax on transfer of property. Indirect taxes include excise duty, sales tax, custom duties and a number of other taxes imposed by the States. Not only is there multiplicity of taxation, but also double taxation of incomes and commodities. The total revenue of the country accounts for about 22 per cent of the national income. Such widespread and heavy taxation cannot be neutral to private business activities. In

fact, it is alleged by the business community, even after the tax reforms of 1991 and 1992 that the existing Indian tax structure is seriously undermining the incentive to save and invest for both individuals and corporations. However, taxation reforms made in India since 1991 have reduced the tax rates to internationally comparable levels and are expected to have much less adverse impact on the private business.

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Measuring how tax has affected the private business is an extremely complex affair. The impact of income taxation on the growth of private business in general, and on private investment in particular, may be examined through its effects on (*i*) people's work-efforts; (*ii*) saving of the households in general and of private firms in particular and (*iii*) incentive and ability to invest.

It is important to note at the outset that there is little evidence available in case of India to support or refute the proposition regarding the adverse effects of taxation on saving and investment. The empirical evidence available for other countries is not strictly conclusive, and even if it is, the same may not be applicable to the Indian economy. We will, therefore, confine our discussion to only theoretical propositions regarding the effects of various taxes on private investment.

The effect of taxation on private enterprise depends, among other things, on how income tax affects people's desire to work. The additional work effort depends, in fact, on peoples' choice between leisure and work. Leisure gives a kind of satisfaction (or pleasure) while work yields income which yields another kind of satisfaction. Taxation of personal income reduces return from labour and, therefore, it alters peoples' choice between leisure and work. When a tax is imposed or income tax rate is increased, wage income decreases. As a result, the reward for an additional labour and the price of additional leisure, i.e., opportunity cost of leisure, are both lowered. Under this condition, 'the worker will tend to substitute leisure for work.' Thus, taxation reduces the supply of labour. But, at the same time, increase in tax rate reduces the total income from given hours of labour. It makes the worker poorer but poor workers normally wish to enjoy fewer hours of leisure in order to earn more. The workers would, therefore, like to work more to raise their income. Thus, taxation has both negative and positive effects on labour supply. The net effect of taxation on work effort (or labour supply) depends on the relative strength of the two effects.

A number of surveys and econometric studies carried out in the United States and England on this aspect of taxation have not yielded any definite measure of the net effect of taxation on work effort. According to Musgrave and Musgrave, 'There is no *a priori* basis on which to judge the direction in which the net effect will go, although it is reasonable to assume that effort will decline.' They have, however, contradicted themselves by saying, 'it should not be readily assumed that an income tax must reduce effort.' Sanders has found that 'the typical (business) executive [does not] put forth his best efforts, taxes or no, to fulfill the requirements of his job and to progress on the promotional ladder of his company.' George F. Break interviewed 306 lawyers and accountants in England—an ideal group to study as they belonged to the category of tax-payers who can easily adjust their working hours with changes in their incomes. According to his findings, '40 men reported definite adverse effect on incentive' for additional work, 32 men reported to have worked harder due to taxation as some of them wanted to accumulate wealth and some wanted to maintain their standard of living. The remaining 234 men reported minor or no effect on their work effort.

It may be inferred from these empirical evidences that taxation of income has, if at all, only marginal effect on work effort. Although under the conditions mentioned

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above, any generalization would be risky, much of tax effect on work efforts depends on: (*i*) the level of income; (*ii*) tax-rates—proportional, progressive or regressive; (*iii*) the productivity or marginal efforts and (*iv*) non-monetary benefit, such as free accommodation, education of children, health care, travel benefits, etc. In general, if a person has low income but wants to raise his standard of living to the level of his society, he will have to increase his work efforts to earn an additional income to make up the loss in income due to tax. But a rich person may not like to work more. If tax-rates are progressive, the additional work effort will be less and less paying. If earning per unit time becomes regressive, taxation may have a negative effect on work effort. The effect will be reverse in case of proportional and regressive tax rates. If hard work, experience and marginal productivity are positively correlated, the tax will have only marginal negative effect, as it happens in the case of lawyers, doctors, managers, consultants, accountants, etc. Also, if non-monetary benefits (not to be included in taxable income) increase with additional work effort, tax would not have a negative effect on the supply of labour. Finally, whether taxation affects work-effort depends to a great extent on a person's desire, effort and ability to shift and to evade tax. It may thus be concluded that general taxation of income does not materially affect the supply of labour.

Incidentally, as regards the effect of indirect taxes, economists generally compare it with the effect of income tax. Since there is no definite measure of income tax effect on work effort, nothing definite can be said about the effect of indirect taxes too. The general opinion regarding the effect of indirect taxes on work effort is that indirect taxes may affect the labour supply since they raise the price and thereby reduce the real wage rate. But, if money incomes are rising and workers are under money illusion, feel happy with larger money income irrespective of its purchasing power, indirect taxes may not affect the work efforts. It is believed that the negative effect of indirect taxes on work effort is less than that of income tax because workers can avoid indirect taxes by consuming less of a taxed commodity, which is not possible under income tax.

5.3 COMMODITY TAX AND IMPACT AND INCIDENCE

Commodity taxes are classified either as a:

- Specific Tax
- Ad Valorem Tax

1. Specific Tax

Check Your Progress

1. What do direct and indirect taxes include?
2. On what does the effect of taxation on private enterprise depend?
3. On what factors does tax effect on work effort depend?

When a tax is imposed on a commodity according to its weight, size or measurement, it is called a specific tax. For instance, when the excise duty is imposed on sugar on the basis of its weight or a piece of cloth is taxed according to its length or a tax on a picture is levied on the basis of its size, it is known as a specific tax.

The main advantage of a specific tax is that it is easy to levy and convenient to collect because it is collected either according to the weight of the commodity or according to the size of the unit of the commodity.

The main disadvantage of this tax is that it imposes a greater burden on poor people than on the rich. The reason is that the marginal utility of money for the rich is lower than that for the poor people.

2. Ad Valorem Tax

When the tax is levied on a commodity according to its value, it is termed as an ad valorem tax. Whatever may be the weight or size of the unit of the commodity, the tax is charged according to its value. Several imported commodities are taxed not according to their weight or size but according to their value.

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The main advantage of an ad valorem tax is that it imposes a greater burden on the richer sections of society. From this point of view, an ad valorem tax is more equitable than a specific tax.

The main problem with an ad valorem tax, however, is that it is difficult to know the real value of the commodity at the time of imposing the tax. Generally, the traders understate the value of the commodities in their invoices in order to escape the burden of the ad valorem tax.

In fact, it is difficult to choose between a specific and an ad valorem tax. A good tax system should have both the specific tax and an ad valorem tax according to the nature of the commodities.

5.3.1 Impact and Incidence

The study of incidence and shifting of taxes is most important in the domain of public finance. The objective of the study is to enquire about the class, section or group of individuals who ultimately bear the burden of taxation. It also includes the enquiry of the manner of the distribution of tax among the different sections of society. The main focus of the study in the context of incidence and shifting of a tax is to find out as to how much tax burden falls, on whom does it fall and what is the feeling of the person on whom it falls. It is a general happening that the incidence of a tax does not always fall on the same person who is directed to pay the tax but it is transferred on the shoulders of some other person or group of persons. Thus, it becomes essential for the state to find out the actual taxpayers. As far as the direct tax is concerned, a tax on income cannot be shifted on to the shoulders of others, but it is very much expected in the case of indirect taxation. Every person wants to shift his tax incidence on other person or persons as far as he can in order to maintain his purchasing power at higher level.

Meaning of Tax Incidence

The incidence of tax means the final money burden of a tax. Whenever a tax is levied, its money burden falls on some individual. Under the tax incidence, we try to find out as to where the money burden actually falls or who bears the burden of a tax. According to Hugh Dalton, the problem of incidence is commonly conceived as a problem of who pays it. More precisely, we may say that the tax incidence is on those who bear the direct money burden of the tax. In the words of Findlay Shirras, 'the problem of incidence is the analysis to determine who pays the tax, i.e., on whom the money burden of the tax falls or rests.' Richard A. Musgrave has stated that the concept of incidence is the location of the ultimate burden of a tax which starts from the false premise that a tax as such has an ultimate burden.

According to J. K. Mehta, 'sometimes incidence is defined as the direct money burden of a tax. That way of defining incidence is satisfactory for most purposes. But it is necessary to note that all direct and monetary burdens should not be called incidence. For instance, a tax on tea will directly reduce the income of those who sell the foils in which tea is packed. Again, a toll tax may reduce the sales, and, therefore, the income of

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the sellers of certain goods. But these burdens, though direct and financial, are not to be called the incidence of taxation. They should be included in effects.'

Thus, we see that the opinions of the economists are not exactly similar. For some authors, incidence is concerned with the load of tax. There are some economists who make a distinction between incidence of a tax when other things are not the same. Thus, Musgrave mentions three kinds of incidence. When a tax is imposed without any change in the expenditure side of government account the resulting incidence is called the *specific incidence* by Musgrave. When a tax is levied as a substitute for another tax, he calls the resulting incidence the *differential incidence.* Lastly, when the government finances its expenditure by the yield of tax the resulting incidence is called the *balanced budget incidence*. It will be seen that it is only in the first case that other things remain the same. The incidence may, therefore, be called the real specific incidence of the tax.

Mrs Ursula Hicks has mentioned the (i) formal incidence; and (ii) effective incidence of a tax. Her formal incidence is similar to Dalton's direct money burden of a tax. Defining the formal incidence of tax, she states that we are concerned in economics with two concepts of the falling of taxes on the taxpayers, as it is called the incidence of taxes. In the first place, there is the statistical calculation of the way in which the revenue collected from any particular tax over a given period (usually one year), namely the difference between the factor cost and the market price of the product on which the tax is assessed, is distributed between the citizens (for convenience grouped according to their income levels), or alternatively, the proportion of peoples' incomes which goes, not to provide the incomes of those who furnish them withgoods and services but is paid over to the government body to finance collective satisfactions. The result of this calculation may be called the *formal incidence* of the tax. The *effective incidence* indicates the wider effects of various taxes. In order to discover the full economic effects of a tax, we have to draw and compare two pictures—one of the economic set-up (distribution of consumers' wants and incomes, and the allocation of factors), as it is with the tax in question; the other of a similar economic set-up but without the tax. It is convenient to call the difference between these two pictures the effective incidence of the tax.

Impact and incidence of tax

Sometimes a distinction is made between the impact and an incidence of a tax. The impact of a tax is the first point of contact of the tax with the taxpayers, i.e., the impact of a tax falls on the person who pays the tax in the first instance. The incidence of a tax refers to the final or ultimate burden of a tax. However, it is not always necessary that the person who pays the tax in the first instance will also bear the ultimate or final money burden of the tax. In other words, the impact and the incidence of a tax may not fall on the same person. For instance, when the government levies the excise duty on sugar, it is paid in the first instance by the sugar producer, i.e., sugar mill-owner. Thus, the impact of the sugar duty is on the sugar mill-owner. But it does not mean that the incidence of this excise duty will also fall on the sugar mill-owner. The sugar mill-owner will shift forward the burden of the excise duty on the consumers in the form of higher price of sugar. In other words, he will include the amount of excise duty in the price of sugar and charge it from the consumers. The incidence of the excise duty on sugar will be borne by the sugar consumers. The amount of reduction in the consumers' incomes consequent upon the imposition of the excise duty on sugar represents its money burden. The impact of a tax does not reduce the income of the producer it only puts a burden on him for a short while whereas the incidence of tax is durable and it ends in diminishing the money income of the sugar consumer.

According to J. K. Mehta, 'impact might be said to be the immediate money burden. The impact of a tax is on the man on whom the tax is imposed. The man who pays the tax to the government bears its impact only. A tax might be levied on the producer of cloth. The cloth producer pays the tax to the government. He is said to bear the impact of the tax. The producer, however, raises the price of his cloth in an attempt to pass the whole or a part of the tax on to the buyers. If he is able to raise the price, we say that the tax has been shifted, partly or wholly, to buyers. If the rice does not rise to the full extent of the tax, we say that some incidence of the tax remains on the cloth producer, but impact is only on the producer. For it is he alone in the above case who in the first place bears the entire burden of the tax.'

The problem of the impact of tax as distinct from the incidence of tax does not occur in the case of direct taxes because the person who pays the income-tax cannot shift it on others. He will have to pay the tax from his own pocket. The distinction between the impact and incidence of a tax becomes, however, very prominent in the case of indirect taxation. Since the impact and incidence of indirect taxes fall on different individuals under different situations, it gives rise to the important phenomenon of shifting of the tax burden.

5.4 EFFECTS OF TAXATION ON PRODUCTION AND PRICE IN DIFFERENT MARKET CONDITIONS

Imposition and collection of a tax have the potential of evoking a variety of responses from both taxpayers and other affected economic units and thereby influencing the working of the economy in several ways. These responses and their outcomes are collectively termed *effects of that tax*. These effects may result from the fact of imposition of a tax itself, and/or from the process of shifting of its incidence. For example, the minimum effect of a tax, when it is imposed, is a reduction in the disposable income of the taxpayers; and if its incidence is shifted, then at least some prices would also change.

The effects of taxation on production and economic growth in the economy may be analysed under the following three heads:

- Effects of taxation on peoples' ability to work, save and invest
- Effects of taxation on peoples' willingness to work, save and invest
- Effects of taxation on the allocation of resources between different trades and regions

1. **Taxation and the Ability to Work, Save and Invest:** When a tax is imposed on consumers, it immediatelyreduces their purchasing power or net income because a part of his income is paid to the government. Consequently, the consumer is compelled to purchase a smaller bundle of commodities and services than before. This effect of tax is similar to the effect of inflation or high prices. The standard of living of the consumers (taxpayers), therefore, falls unless the tax payment is accompanied by an increase in their incomes by the amount of tax. It means that the imposition of a tax reduces the ability of the taxpayers to work, save and invest.

   If the tax burden falls on the poor people, it would curb the consumption of essential goods and services and reduce their standard of living and their ability to work. Conversely, if the tax burden falls on the rich people, it does not curb consumption.

Check Your Progress

4. With the help of an example, define specific tax.
5. Why is ad valorem tax considered to be more equitable than a specific tax?
6. State the objective of the study of incidence and shifting of taxes.
7. State the difference between impact and an incidence of tax.

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At the most, it may reduce the consumption of only luxury goods as a result of which their ability to work will not suffer impairment, although it is certain that their ability to save will reduce. In other words, a progressive tax system reduces the ability to save. But sometimes a tax may prove helpful in increasing the efficiency to work of the taxpayers. For instance, if the taxes are levied on those commodities which are harmful for health and efficiency, as result of tax the consumption of such goods would fall. Consequently, it will have a healthy effect on people's efficiency to work.

The effect on the ability to work may assume a cumulative form. Reduction in the purchasing power due to taxation would lower the standard of living which, in turn, results in low efficiency. Lower efficiency would lead to lower income which would further lead to low efficiency. Similarly, if the tax reduces people's ability to save, it will lead to low capital formation because people would consume a major part of their income as a result of higher taxation on goods and services consumed by them. As a result, it will reduce their savings. Due to low savings, the capital formation will be low. The fall in the capital formation will lead to low production and low level of income. This would further reduce the ability of people to save. Thus, the effect of taxation will assume a cumulative form.

The ability to invest is related with the ability to save although the two are not identical. An individual economic unit may be able to save but it may not be able to invest for several reasons. Similarly, an economic unit may not be able to save but it may be able to invest. Thus, for an individual economic unit, saving may not be essential for investment. It might even borrow from financial institutions for financing its investment activities. However, for the economy as a whole, investment is not possible unless savings are made. Given the fact that there exists financial institutions and a mechanism for collecting the community's savings and bringing these savings to the investors, the level and pattern of investment will be greatly influenced by the structure of taxation in the country.

If a tax is imposed on the consumers and if as a result of this the savings are reduced, a smaller amount of savings will be available to the investors for the productive ventures. Consequently, the level of aggregate investment in the country will fall. Similarly, the total capacity to invest is likely to decrease as retained profits of the business firms are taxed by the government.

It must, however, be mentioned that these harmful effects of taxation may, to a certain extent, be neutralized by the pattern of government expenditure. Reduction in investment which has resulted from peoples' low ability to save due to higher taxation may be partly or wholly offset by increasing the incomes of the people as a result of state expenditure. Similarly, the standard of living and the capacity to work of the taxpayers may not fall due to taxation if the various amenities are provided by the government in greater amount.

2. **Taxation and the Will to Work, Save and Invest:** The effects of taxation on peoples' willingness to work, save and invest are partly due to the money burden of tax and partly due to the psychological state of the taxpayers. If an individual suddenly secures huge income from an unexpected source (for instance, if a person gets a windfall income on the death of a relative) and the government imposes a tax on such income, this will produce no adverse effects on that person's will to work, save and invest. The reason for this is that the person concerned has not made any endeavour to earn the income.

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The income elasticity of demand can also influence the will of a person to work, save and invest. Since the income which the taxpayers earns by one or another kind of work is taken away by the government in the form of taxes, they lose the incentive to work to earn further income. If the income demand of an individual is inelastic or has a large family to support, then the individual will work more consequent upon the imposition of the tax. In such a situation, tax acts as a spur to work harder. The reason for this is that the individual will have to earn more income in order to meet the requirements of the family. On the contrary, if the income demand of the individual is elastic or if he/she has only a small family to support, then the will to work may not be affected as a result of the imposition of tax.

Likewise, the form of the tax may also effect the will to work and invest. It is universally recognized that direct taxes, particularly income tax, has an adverse effect on the incentive to work and invest. On the other hand, commodity taxation generally does not have a direct effect on the incentives of the individuals. This is so because in the case of a direct tax, taxpayers pay a certain amount of income directly to the government. Obviously, they will not be willing to work more and to invest more because a part of such efforts will have to be paid to the government. On the other hand, indirect taxes are hidden in the prices of goods and services. Consequently, average taxpayers are not fully aware of their burden and existence.

Although taxpayers can pay some moderate rates of income and other direct taxes without much murmur, but high rates of direct taxes (which at certain stage may take away nearly 80 to 90 per cent of individuals' additional income) will certainly influence the individuals' willingness to work and save. Such high tax rates will not create the incentive among people to work more and invest more; rather these will induce people to evade and avoid the tax imposed by the government.

Again, a high rate of taxation on business profit will induce the business community to increase its business expenditure and reduce corporate profitability. Earnings from investments, however, are usually taxed unevenly. The result is that differential taxation can bring about several influences on the types of investment. For instance, if the investment in real estate—land and house-building—is taxed lightly compared with the profits from business, investment in land and housing will be encouraged. Similarly, industries which are allowed a high rate of depreciation allowance will find their net profitability higher and consequently will attract investment in preference to others. If some industries are exempted from taxation, investment will be directed toward such industries. Thus, by imposing lower taxes on capital goods industries, their growth can be encouraged. It contributes to capital formation and economic growth of the country.

If differential taxation is adopted in the context of certain chosen locations of industries, the industries will tend to shift towards the lower taxed regions. Thus, the government may, to a great extent, use its tax policy as an instrument to reduce the regional inequalities and imbalances in the economy.

3. **Taxation and the Allocation of Resources:** The government can use its tax policy to divert the scarce resources of the country in the desired productive activities. Thus, taxation can influence not only the size of production but also the pattern of production in the economy. The diversion of resources between different industries and regions as a result of taxation may be favourable or unfavourable.

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High taxation on harmful drugs and commodities will raise the prices of such products so much that the demand for these products will be curtailed considerably. Consequently, the production of such products will be discouraged and resources engaged in their production will be gradually shifted to other industries which are useful for economic growth of the country. This is a favourable effect of taxation on the allocation of resources. Similarly, tax concessions and exemptions on goods produced in the backward areas can help divert economic resources from the economy's overcrowded areas to the backward areas. This will, apart from promoting the balanced regional economic development, lead to an equal distribution of wealth and help reduce the regional inequalities in the economy.

Conversely, if taxes are imposed on useful products which are not essential, there is the possibility of curtailment of the consumption and production of these products. Consequently, the demand and production will be shifted to the less useful items. Such misallocation of the scarce resources will not be in the interest of the community.

5.4.1 Effects of Taxation on Price

Effects of a tax can be both beneficial and harmful. Its harmful effects are termed its *burden* and are conventionally divided into its *money burden* and *real burden.* The former represents a reduction in the disposable income of the taxpayers and is further subdivided into direct and indirect money burden components. *Direct money burden equals* the amount of tax paid by the taxpayers to the authorities. However, the very fact of imposition and collection of a tax entails a variety of additional costs to the taxpayers and these are termed its *indirect money burden* or 'cost of compliance'. Factually, however, the term 'cost of compliance' should be accorded a broader meaning and should also include time and effort spent by the taxpayers as also mental pressure borne by them.

The harmful *effects* of a tax, such as a loss of employment and production, are termed its *real burden.* It is broadly equated with the loss of welfare of the community as a whole. Real burden itself may be divided into two parts, direct and indirect. 'Direct real burden' of a tax is the direct loss of welfare of the taxpayers attributable to it, while its spill over ill-effects are termed its 'indirect real burden'. Both these measures are gross and not 'net of benefits' of the said tax.

Excess Burden

Net loss of welfare caused by a tax is termed its 'excess burden'. Assuming that a free market economy yields the best possible results and any deviation therefrom constitutes an excess burden, Musgrave asserts that the excess burden upon taxpayers results from: (a) an interference with the consumer choice, (b) changes in factor supply and hence total output, and (c) changes in employment through changes in aggregate demand.

Alternative Meanings of Tax Incidence: Mrs. Ursula Hicks uses the terms *formal* and *effective incidence* of a tax. To her, formal incidence of a tax is that portion of incomes of the taxpayers which they surrender to the government agencies for financing the provision of their collective wants. This financing may take the form of direct tax payments or the indirect route of sale-purchase transactions. In the latter form, impact and incidence of a tax differ from each other.

Thus, formal incidence of a given tax equals revenue receipts of that tax, while formal incidence of the entire tax system equals aggregate tax receipts of the authorities.

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In contrast, *effective incidence of a tax (or the entire tax system) is the sum total of its effects*. It includes all the advantages and disadvantages which an economy derives from a tax or the entire tax system. It is nearly impossible to properly estimate the effects or effective incidence of a tax because for that we have to compare two situations, one with the presence of the said tax and the other without it. And one of these two situations is always hypothetical. Thus, if the tax under consideration is already in existence, we have to compare the existing situation with the one which would have been there without that tax. Similarly, if the tax in question is not being levied, we need to know the situation which would result if it is levied.

Musgrave uses the term incidence of a tax in a different sense. When a tax is imposed, or its rates etc., are revised, the effects are felt in different spheres of the economy. The incidence of a tax is the *resulting change in the distribution of income* available for private uses. The distributional effects of changes in a particular tax are called *specific tax incidence*. On the other hand, assuming that the government is interested in choosing between alternative ways of raising a given amount of real resources by means of taxation, the distributional changes that result as one such tax is substituted for another are referred to as the *differential tax incidence*. It need not be mentioned that the meaning chosen by Musgrave is one of the several alternative meanings and his choice is purely arbitrary.

Forward and Backward Shifting

As stated above, incidence of a tax can be shifted only through a sale/purchase transaction. For example, if a producer is asked to pay an excise duty on his product, he may enhance its sale price or may force his suppliers of inputs to accept lower prices. In the former case, it is termed forward shifting. In it, the producer collects a portion of the tax from the customers and shifts a portion of the tax burden forward. Since a tax is shifted through the means of a price variation, in the case of forward shifting, the price of the commodity or service through which the tax is being shifted, will increase. On the other hand, it becomes a case of backward shifting, if the tax is shifted through the vehicle of purchase transactions. In our example, backward shifting will occur if the producer reduces the purchase price(s) of an input (inputs). It must be emphasized that along with an imposition of a tax, there is a likelihood of changes in the demand and supply flows of the taxed good implying that the price of a good also undergoes a change over and above the one brought about by the sheer fact of tax shifting. Conceptually, however, only that portion of changes in price represents a shift in the incidence of a tax which can be attributed to it and not the component of price change attributable to an extraneous shift in demand and supply flows. A modern economy is characterized by a dynamism of its demand and supply forces and accordingly, it becomes quite difficult to estimate the price that would have been there in the absence of the tax. Furthermore, it is not necessary that a tax must be shifted only forward *or* backward. It can shift partly in each direction, depending upon the sales/purchase transactions involved and the market forces at work. It is also self-explanatory that over time, shifting of tax incidence can change its direction from forward to backward and *vice versa*.

Shifting of Incidence through Tax Capitalization

Shifting of periodic taxes on multi-use ('durable') items like buildings and cars takes place through what is termed 'tax capitalization', that is, a reduction in the purchase price offered by the purchaser of the taxed item. It means that the 'present worth' of the future tax payments is estimated and the offered purchase price of the taxed item is

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reduced. However, such a reduction in offered purchase price need not be equal to the estimated 'present worth' of the stream of future tax liabilities. It may be greater or smaller than that.

Accordingly, an equivalent of the future tax payments is found in terms of the present value and the purchase price of the item is reduced by a part or full amount of that value. Such a reduction in the purchase price is termed *tax capitalization.* The principle of tax capitalization can be understood by looking at the way the buyer is supposed to work out the offer price for a durable taxed item.

Let $R_1, R_2, R_3,..., R_n$ be the money receipts (or money equivalents of the services) which the taxed item is expect to yield to its owner during time intervals 1, 2, 3, ..., n in the future. Let $T_1, T_2, T_3,..., T_n$ be the amounts of taxes to be paid out of these receipts $R_1, R_2, R_3,..., R_n$. Let $r_1, r_2, r_3,..., r_n$, be the rates of interest for periods 1,2,3,..., n, respectively. Then the present worth of the net receipts from the taxed item under consideration is given by:

$$PW \quad \frac{R_1 \quad T_1}{(1 \quad r_1)} \quad \frac{R_2 \quad T_2}{(1 \quad r_2)^2} \quad \ldots \frac{R_n \quad T_n}{(1 \quad r_n)^n} \quad \sum_{i=1}^{n} \frac{R_i \quad T_i}{(1 \quad r_i)^i}$$

The price offered by the purchaser is guided by *PW*. It obviously falls (rises) as the tax amount rises (falls).

5.4.2 Theories of Tax Shifting

Three most popular theories of tax shifting discussed below are the Concentration Theory, the Diffusion Theory and the Demand and Supply Theory. All the three assume, implicitly or explicitly, that the incidence of a tax can be shifted only through sale/purchase transactions involving real or financial resources. No taxpayer can recover the tax paid by him from someone else unless something is bought from or sold to the latter.

1. Concentration Theory

This theory asserts that there is an inherent tendency for the taxes to be absorbed by certain income classes. It was advocated by the physiocrats and the classical economists. Physiocrats believed that in an economy, only those persons could bear the taxes who were appropriating a 'surplus'. To them the artisans and other classes (except peasants) did not produce any surplus since in such cases the value of the final output was only equal to the value of the inputs. However, the story was a different one with agriculture. There, the value of the produce far exceeded that of the inputs and it was this surplus which was appropriated by the landlords as rent. The peasants were left with only that much of income which was necessary to maintain themselves and perpetuate their labour supply. In the same manner the artisans also got only that much of income which just represented the cost of their own reproduction. Therefore, the only source from which taxes could be finally paid was the agricultural rent. If was implicitly assumed that if taxes were paid out of incomes other than agricultural rent, such taxed income earners would not be able to sustain themselves and their supply in the market would dwindle down to zero. It was therefore preferable to levy a tax only on agricultural rent.

The classical economists were able to add a refinement to this analysis. They realized that in an economy, surplus could occur in two forms, namely, land rent and profit. Accordingly, all tax incidence would get concentrated on these two surpluses and would be absorbed by these. Let us consider some possible taxes to see how this is corroborated.

Land rent, according to Ricardian theory, arises due to the fact that (a) agricultural production is subject to the law of diminishing returns and (b) with increasing population and demand, the supply of agricultural output and hence the marginal cost of production increases. The classical economists also believed in the subsistence theory of wages and the Malthusian theory of population. Accordingly, in the market the wage rates of the workers and peasants tend to settle at their subsistence level. If they ever slumped below this level, the result would be a reduction in labour supply because labour would start dying off. On the other hand wages above subsistence level would result in an increase in labour supply in the long run. In the short run, however, labour supply can be taken as fixed so long as wages do not fall below subsistence.

A tax on agricultural produce implies an increase in both average and marginal costs of cultivation. However, with a given population in the short run, demand for agricultural produce does not fall and prices of agricultural produce go up. This raises the cost of subsistence of the workers. Wages would have to increase and they would eat into profit incomes. However, rent income does not fall because landlords pay the tax on agricultural produce out of higher sales proceeds collected by them through higher agricultural prices. Thus, the incidence of the tax finally rests upon the profits. However, if a tax is imposed not on agricultural produce but on agricultural rent itself, the landlords are left with no means to shift the tax incidence on to others because rent does not form a part of the cost of production; marginal cost of cultivation remains unchanged and so does the rent income.

If a tax is imposed upon wages, the workers will have to be compensated through additional money wages to give them a given real subsistence. Those who are appropriating profits will not be able to shift the tax incidence; but landlords will be able to. Higher wages would increase the marginal cost of cultivation and so via higher agricultural prices, the tax incidence will be shifted to profits. If however, a tax is levied on profit income itself, no shifting takes place and the tax is absorbed right there because wages, which are already at subsistence level, cannot be pushed further down.

2. Diffusion Theory

Given the interdependence of economic units in the economy and assuming that wage rates can be higher than the subsistence level, it follows that economic 'surpluses' can exist throughout the economy. Actually, in the short run, even in a competitive market, there is an element of 'rent' in the earnings of every factor of production. By implication, a tax levied and collected anywhere in the economy could finally shift to anywhere else in it through numerous phases of this process. It, therefore, becomes extremely difficult to ascertain the final location of its incidence. It gets fully 'diffused' in the economic system.

Dalton, however, does not agree with this conclusion. He asserts that this conclusion is only an excuse to avoid the task of ascertaining the location of final incidence. He claims that with suitable analytical techniques, it should be possible to ascertain both the final incidence and effects of a tax. Advocates of the diffusion theory claim that in any case it is a futile exercise to search for this information. However, this is an illogical stand for the following reasons. Effects of a tax are closely linked with its incidence, and deeply influence the social welfare in innumerable ways. Therefore, no modern government is expected to remain indifferent to its expected effects.

The assumptions upon which this theory is based are patently unrealistic. Factually speaking, modern market economies are victims of a variety of market failures. They

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suffer from monopolistic elements and malpractices, imperfect factor mobility and so on. It is therefore, unrealistic to assume that the tax incidence gets fully diffused in the economy. In several situations, it may not shift at all. Similarly, the incidence of a specific tax may tend to concentrate on some sections of the society or some sections of the business, while leaving others totally unaffected. Moreover, it is the duty of the authorities to ensure that the tax regime helps in attainment of maximum social welfare. Therefore, instead of being moot spectators, they are expected to pursue an active taxation policy for counteracting market failures.

3. Demand and Supply Theory

This theory enjoys maximum acceptability in academic and administrative circles. It starts with the basic fact that incidence of a tax can be shifted only through sale/purchase transactions and, therefore, only through a variation in prices. Given the levying of a tax on an item, the direction and extent of revision in its price is determined by relative values of its demand and supply elasticities. The general rule is that irrespective of whether the statutory liability of paying the tax (that is, its impact) rests upon the buyer or the seller, the share of the tax borne by the seller will be the larger if the elasticity of demand of the taxed item is larger; and the share of the tax borne by the buyer will be the larger if the elasticity of supply is larger. Actually, the tax burden will be shared between the buyer and the seller in the ratio of the elasticities of supply and demand of the taxed item.

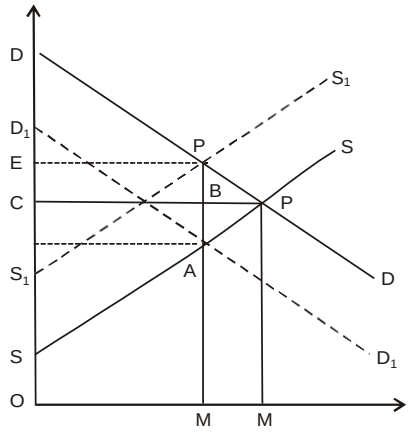

Fig. 5.1 *Amount of Good Demanded/Supplied*

Let us illustrate this statement by first taking the case of a single commodity which has been subjected to a specific (per unit) tax. Let us assume that the impact of the tax is upon the sellers. Let (refer to Figure 5.1) the original demand and supply curves for the commodity be *DD*′ and *SS*′. With the imposition of a tax *SS*1 per unit upon the commodity, the supply curve shifts to *S*1 *S*1′ and the price of the commodity rise from *PM* to *P*′*M*′. However, out of this *P*′*M*′, the sellers get only *AM*′ while the balance is collected by the government by way of tax. In other words, the incidence upon the sellers is equal to *BA* per unit. On the other hand, the buyers are paying now *P*′*M*′ instead of *PM*, an increase of *P*′*B* per unit which is the incidence upon them. It can be shown that this division of the tax *P*′*A* between the two shares *PB* and *BA* is in the ratio of the elasticity of supply to the elasticity of demand. Thus, the elasticity of demand is given by proportionate change in demand divided by the proportionate change in the price to the buyers. That is to say, the elasticity of demand *Ed* is given by:

$$(MM'/OM)/(P'B/PM)$$

Similarly, the elasticity of supply is given by the proportionate change in supply divided by the proportionate change in price to the sellers. That is to say, the elasticity of supply, E_s, is given by:

$$(MM'/OM)/(BA/PM)$$

Therefore, $Es/Ed = [(MM'/OM)/(BA/PM)]/[(MM'/OM)/(P'B/PM)]$

$= P'B/BA$

= Incidence on Buyers/Incidence on Sellers

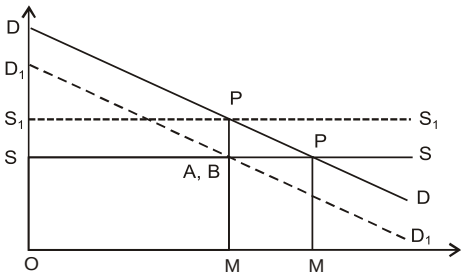

Fig. 5.2 *Amount of Good Demanded/Supplied*

If the tax is imposed upon the buyer, the demand, curve would shift left and downwards to D_1D_1', the buyers would then pay a price of AM' to the sellers and a tax $P'A$ per unit to the authorities. The resultant incidence on the two parties will remain unchanged. *It can be shown that even when the tax is ad valorem (that is, proportional to the price of the commodity), the incidence of the tax shall be shared by the buyers and the sellers in the ratio of the elasticity of supply to the elasticity of demand.* The only difference here will be that the tax per unit will be different for different supply amounts. The formula:

$$\frac{\text{Buyer's share of incidence}}{\text{Seller's share of incidence}} \quad \frac{E_s}{E_d}$$

shows that as the elasticity of supply increases as compared with elasticity of demand, the incidence will be more on the buyer and vice versa. Thus, if the commodity taxed is being produced under constant returns, it follows that the supply curve will run parallel to X-axis, and the elasticity of supply will tend to be infinity. In that case the buyer will bear the entire incidence of the tax. This will happen even when the tax is imposed upon the buyer (in which case the demand curve will shift downwards). Figure 5.2 illustrates this phenomenon and it is seen that here the points A and B coincide, so that $P'B = P'A$. Also note that here per unit tax will not vary even if the tax is not specific but *ad valorem* because the sale price by the sellers, net of tax, remains unchanged.

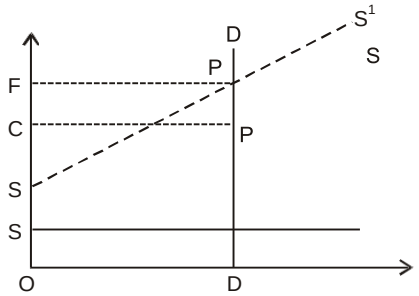

Fig. 5.3 *Amount of Good Demanded/Supplied*

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The tax will be fully borne by the buyers if the demand elasticity is zero (in the ratio E_s/E_d, the denominator becomes zero, see Fig. 5.3). Here the demand curve will run parallel to *Y* axis and an upward shift in the supply curve will automatically mean an equivalent increase in the price being paid by the buyer. If the tax is *ad valorem*, say *t* percent, the price will increase by exactly *t* percent because the quantity demanded and supplied remains unchanged.

It can be shown in the same way that if the elasticity of supply is zero, or if the elasticity of demand is perfect, the sellers will bear the full incidence of the tax (see Figures. 5.4 and 5.5).

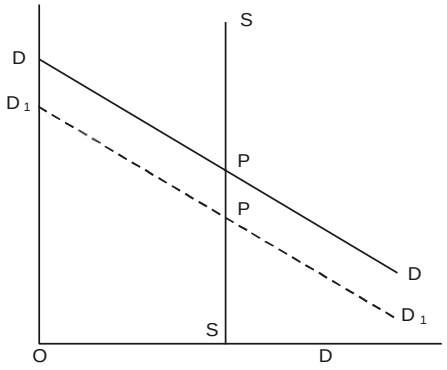

Fig. 5.4 *Amount of Good Demanded/Supplied*

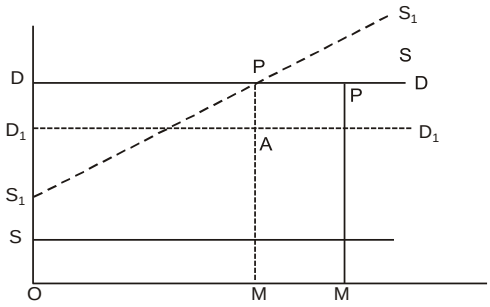

Fig. 5.5 *Amount of Good Demanded/Supplied*

Dalton shows that, in absolute terms, the total incidence of a commodity tax on the buyers will be given by $tE_s/(E_s + E_d)$ where t is the tax per unit (it may be *ad valorem* or specific) and the share of the sellers will be given by $tE_d/(E_d + E_s)$. He generalizes it to the case where different rates are imposed upon a number of different sources of supply. If, for example, there are n sources of supply with supplies of $x_1, x_2 ..., x_n$, and if they have the elasticities of supply $e_1, e_2, e_3, ..., en$ respectively, and if the respective tax rates upon these supplies are $t_1, t_2, t_3, ..., t_n$, then the incidence of the tax upon the buyers will be given by:

$$\frac{\sum_{t\ 1}^{n} t_i\ e_i\ x_i}{\sum_{t\ 1}^{n} Ed_i\ x_i \quad \sum_{t\ 1}^{n} e_i\ x_i}$$

where E_d is the elasticity of demand.

It should be noted that in some cases, the price of a commodity may increase by more than the amount of the tax levied on it. It would happen, for example, in the case of

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a commodity which is subject to the law of increasing returns (see Figure 5.6). An imposition of a tax in this case reduces the amount supplied and purchased, the average cost of production increases and that adds to the upward shift in price. In Figure 5.6 the price for the consumer increases by *PB* which is more than the tax amount *PA* per unit. Similarly, the sellers may try to pass both the tax and the loss of the interest which they suffer by first paying the tax to the authorities and then collecting it later from the buyers. Dalton says that in this case, the share of the buyers would be given by:

$$\frac{(E \quad i)\, E_s}{E_s \quad E_d}$$

where *i* is the interest loss to the seller. If this price rise for the buyer is more than the tax amount, it follows that:

$$\frac{(t \quad i)\, E_s}{E_s \quad E_d} \quad 1,$$

$$\frac{t \quad i}{t} \quad \frac{E_s \quad E_d}{E_s}$$

$$\frac{i}{t} \quad \frac{E_d}{E_s}$$

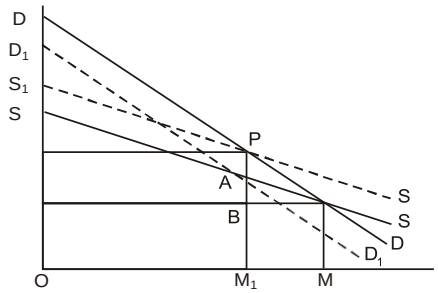

Fig. 5.6 *Amount of Good Demanded/Supplied*

In other words, a greater loss in interest, a smaller elasticity of demand and a greater elasticity of supply will work towards increasing the price more than the tax amount. Still another possibility under which the price rise may be more than the tax amount is where the competitive market is converted into a monopolistic one by the sellers through some form of collusion. In that case, they will be able to restrict the supply and raise the price further.

To summarize the role of demand and supply elasticities in the division of a commodity tax incidence between the buyers and sellers under competitive conditions, we may state the following. Greater the elasticity of demand, smaller will be the share of the incidence borne by the purchasers. Supply curve, however, may have a positive (upward) or a negative (downward) slope. In the former case, with higher elasticity of supply, the share of the buyer will be more. In the latter case, on the other hand (in the case of increasing returns), the share of the buyers will increase as the elasticity of supply becomes *smaller*. It must also be noted specifically that the treatment of the theory of tax shifting runs on the assumptions that the buyers and sellers have already achieved their respective equilibrium positions and that the sellers work with the objective of maximum profitability. The foregoing conclusions would undergo a substantial revision if the foregoing assumptions are dropped.

The above analysis of the incidence of a tax on a commodity can be recast in more formal algebraic terms also. We shall first take up the case of a unit tax on the commodity under consideration in a competitive market.

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5.4.3 Imposition of a Specific Commodity Tax

Let the demand and supply functions be given by $P = p(q)$ and $S = s(q)$ respectively. Then the *pre-tax* equilibrium is given by $P = S$, that is, by:

$$p(q) = s(q) \qquad ...(1)$$

Let a specific commodity tax at the rate of t per unit be imposed. If it is levied on the buyers, the demand function is altered to $p(q) - t$, and the post-tax equilibrium is given by:

$$p(q) - t = s(q) \qquad ...(2)$$

and if it is levied on the sellers, the supply function is altered to $s(q) + t$ and the post-tax equilibrium is given by:

$$p(q) = s(q) + t \qquad ...(3)$$

Note that (2) and (3) are equivalent conditions and can be used to arrive at the *change* in output and price resulting from the imposition of tax t. If we differentiate (3) with respect to t, we can find the change in equilibrium output, dq/dt in response to t. Thus,

$$p\ (q)\frac{dq}{dt} \quad s\ (q)\frac{dq}{dt} \quad 1$$

which gives

$$= \frac{dq}{dt} \quad \frac{1}{p\ (q) \quad s\ (q)} \qquad \ldots(4)$$

Similarly, for finding the change in equilibrium price, dp/dt, we differentiate $p = p(q)$ with respect to t and get $dp/dt = p'(q).dq/dt$. Substituting in it the value of dq/dt from (4), we get

$$\frac{dp}{dt} \quad \frac{p\ (q)}{p\ (q) \quad s\ (q)} \qquad ...(5)$$

Let us apply the above generalized case to specific linear demand and supply functions. Let

$$P = a + bq \qquad ...(6)$$

and

$$S = m + nq \qquad ...(7)$$

Then the pre-tax equilibrium is given by

$$a + bq = m + nq$$

from which we get the pre-tax equilibrium output

$$q \quad \frac{a \quad m}{n \quad b} \qquad ...(8)$$

Substituting the value of pre-tax equilibrium output q in (6), we get the pre-tax equilibrium price, that is

$$p \quad a \quad b\frac{a \quad m}{n \quad b} \qquad ...(9)$$

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The post-tax equilibrium is given by $P = S + t$, or $P - t = S$, that is, by

$$a + bq - t = m + nq$$

so that post-tax equilibrium output

$$q \quad \frac{a \quad t \quad m}{n \quad b} \qquad ...(10)$$

and *change* in output is given by subtracting Eqn. (8) from Eqn. (10), that is

$$q \quad \frac{a \quad t \quad m}{n \quad b} \quad \frac{a \quad m}{n \quad b} \quad \frac{t}{b \quad n} \qquad ...(11)$$

For post-tax equilibrium price, substitute the value of post-tax output in $P = a + bq$, which gives

$$a \quad b\frac{a \quad m \quad t}{n \quad b} \qquad ...(12)$$

From Eqn. (9) and (12), we get the change in price due to tax t per unit, that is

$$p \quad a \quad b\frac{a \quad m \quad t}{n \quad b} \quad a \quad b\frac{a \quad m}{n \quad b} \quad \frac{bt}{b \quad n} \qquad ...(13)$$

Imposition of an Ad Valorem Tax

Now let us take the case of an *ad valorem* commodity tax levied at the rate of *tP* so that post-tax equilibrium becomes $(1-t)p(q) = s(q)$, which may be differentiated with respect to t to get the value of *dq/dt*.

Thus we get

$$p\ (q)\frac{dq}{dt} \quad p(q) \quad tp\ (q) \quad tp\ (q)\frac{dq}{dt} \quad s\ (q)\frac{dq}{dt}$$

from which

$$\frac{dq}{dt} \quad \frac{p(q)}{(1 \quad t)\ p\ (q) \quad s\ (q)}$$

Substituting the value of $\frac{dq}{dt}$ in $\frac{dp}{dt}$

Note that if an *ad valorem* tax at the rate T_c is levied on cost, then it can be worked out to show that **equation missing.**

The conclusion of *ad valorem* tax on demand side can be applied to the case of linear demand and supply functions. Thus with demand function $P = a + bq$ and supply function $S = m + nq$,

Alternatively, in pre-tax position, equilibrium output is $(a - m) / (n - b)$ and equilibrium price P_0 is $a + b(a - m) / (n - b)$

In post-tax equilibrium $(1 - t)(a + bq) = m + nq$, output is $[a(1 - t) - m]/[n - b(1 - t)]$ and, therefore, post-tax equilibrium price is $P_1 = a + b\,[a - at - m]/(n - b + b_t)$

Accordingly, increase in price $\Delta P = P_1 - P_0 = b\,[t(bm - an)]/[(n - b)^2 + t(nb - b^2)]$

It can be shown that if an *ad valorem* tax at the rate of *Tc* on cost is levied, then $\Delta P = b\,[TC\,(bm - an)]/[(n - b)^2 + TC\,(n^2 - nb)]$

5.4.4 Incidence of Some Selected Taxes

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1. Tax on Monopoly

A monopolist, by definition, fixes the output and supply price of his product so as to get the maximum possible profits, which in turn are given by a position where marginal cost equals the marginal revenue (*MC = MR*). Now, if a tax is imposed upon monopoly profits, the monopolist cannot choose a better position of supply and price so as to increase his profits out of which to pay the tax. Actually he is supposed to have chosen the maximum profit position even if no tax on monopolyprofits is imposed. This conclusion remains valid whether the tax on monopoly profit is a lump sum or a proportionate tax. We can also say that imposition of such a tax does not shift the demand or supply curve and so the sale price of the commodity does not change. Without a sale price variation, obviously, the tax cannot be shifted. Thus, in Figure 5.7 the monopoly profit, in the absence of a tax, is given by the area *QPSR*. If the authorities collect a part of this profit by way of taxation, the monopolist has no means of shifting the tax on to the consumers. This is because the positions of the cost and revenue curves cannot shift to his advantage and he cannot collect a pre-tax profit larger than *QPSR*. Had it been possible for him, he would have done so even in the absence of a tax.

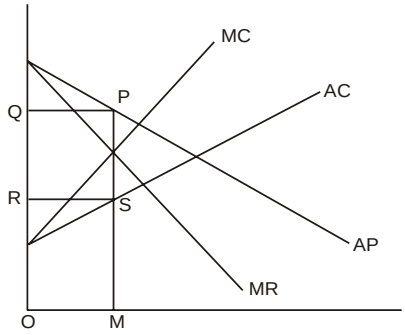

Fig. 5.7 *Amount of Good Demanded/Supplied*

If however, a tax is imposed on the sales (specific or *ad valorem*) or on the buyers, the supply curve or demand curves will shift accordingly and the tax incidence will be shared (provided the monopoly product is not subject to constant returns).
As in the case of competition, we can put the analysis of incidence of commodity taxation under monopolyalso in algebraic terms. We already know that for the demand function $P = p(q)$, the change in price on account of a per unit tax t is given by

$$\frac{dp}{dt} \quad p\,(q)\frac{dq}{dt}$$

Now in order to get the value of *dq/dt*, we proceed as follows. The total revenue function is $TR = q.\,p(q)$, and therefore the marginal revenue function

$$MR \quad \frac{d(TR)}{dq} = q.p'(q) + p(q).$$

Similarly, the total cost function [for the initial cost function $S = s(q)$] is given by $TC = q.s(q) + tq$ and therefore the marginal cost function is

$$MC = q.s'(q) + s(q) + t$$

Now in monopoly equilibrium, $MR = MC$, which gives

$$q.p'(q) + p(q) = q.s'(q) + s(q) + t$$

Differentiating with respect to t, we get

$$\frac{dq}{dt} p\ (q) \quad q.p\ (q)\frac{dq}{dt} \quad p\ (q)\frac{dq}{dt} \quad q.s\ (q)\frac{dq}{dt} \quad s\ (q)\frac{dq}{dt} \quad s\ (q)\frac{dq}{dt} \quad 1$$

or

$$\frac{dq}{dt} \quad \frac{1}{2[p\ (q) \quad s\ (q)] \quad [q\ (q) \quad s\ (q)]}$$

Substituting this value of $\frac{dq}{dt}$ in $\frac{dp}{dt} = p'(q)\frac{dq}{dt}$, we get

$$\frac{dq}{dt} \quad \frac{p\ (q)}{2[p\ (q) \quad s\ (q)] \quad q[p\ (q) \quad s\ (q)]}$$

If the demand and supply functions are linear and are given *by* $p = a + bq$ and $S = m + nq$, then $p'q = b$ and $s'(q) = n$, so that

$$\frac{dp}{dt} \quad \frac{b}{2[b \quad n)]} \quad \frac{1}{2[1 \quad n/b]}$$

and for a tax t per unit the change in price is

$$\Delta P = \frac{1}{2[1 \quad n/b]}$$

Note that in this case the change in monopoly price depends upon the slopes, b and n of the demand and supply curves. For example, under constant returns, $n = 0$ so that $\Delta P = 0.5t$, that is, the price variation is half of that under perfect competition. Under diminishing returns, b is negative and n is positive, so that n/b is negative and $\Delta P < 0.5t$. Under increasing returns, both b and n are negative, so that n/b is positive. For stable equilibrium under increasing returns $|b| > |n|$ implying that $n/b < 1$. Now given that $n/b > 0$, but less than 1, we find that the value of ΔP depends upon the ratio n/b. If n/b is = 0.5, $\Delta P = t$; if $n/b < 0.5$, $\Delta P < t$; if $n/b > 0.5$, $\Delta P > t$. To put it differently, ΔP varies in the same direction as the numerical value of n and inversely with the numerical value of b.

Alternatively, in pre-tax situation, $P = a + bq$, so that total revenue function is $TR = aq + bq^2$ and $MR = a + 2bq$. Similarly, $MC = m + 2nq$. Now in pre-tax equilibrium $a + 2bq = m + 2nq$ from which pre-tax output is $qo = (am)/2(n\ b)$ and pre-tax price is

$$P_0 \quad a \quad b\ \frac{a \quad m}{2(n \quad b)}$$

On the other hand the post-tax demand function is given by $P = a + bq - t$, from which total revenue function is $TR = Pq = aq + bq - tq$, and $MR = a + 2bq - t$.

Therefore, post-tax equilibrium is $a + 2bq - t = m + 2nq$

from which post-tax output $q_1 \quad \frac{a \quad t \quad m}{2(n \quad b)}$

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and therefore post-tax price $P_1 \quad a \quad b\frac{a \quad t \quad m}{2(n \quad b)}$

Therefore $P \quad P_1 \quad P_0 \quad \frac{bt}{2(b \quad n)} \quad \frac{1}{2(1 \quad n/b)}$

In this case the change in price is one half of that under competition.

Now let us consider the case of ad valorem tax under monopoly. As before, let the demand function be $P = p(q)$ so that

$$\frac{dp}{dt} \quad p\ (q).\frac{dq}{dt}$$

Further, let the post-tax demand function be $P = (1 - t).\ p(q)$ from which total revenue function is $Pq = (1 - t).\ p(q).q$, so that marginal revenue function $MR = (1 - t)$ $[\ q.\ p'(q) + p(q)]$. Similarly, let the average cost function be $S = s(q)$, so that the total cost function $Sq = s(q).q$ and marginal cost $MC = s'(q).q + s(q)$.

In equilibrium $MR = MC$, that is, $(1 - t)\ [q.p(q) + p(q)] = s(q).q + s(q)$

Differentiating with respect to t, we can get $\frac{dq}{dt}$.

$$(1 \quad t) \quad q.p \quad (q).\frac{dq}{dt} \quad p\ (q).\frac{dq}{dt} \quad p\ (q).\frac{dq}{dt} \quad [q.p\ (q) \quad p(q)]$$

$$q.s \quad (q).\frac{dq}{dt} \quad s\ (q).\frac{dq}{dt} \quad s\ (q).\frac{dq}{dt}$$

from which

$$\frac{dq}{dt} \quad \frac{q.p\ (q) \quad p(q)}{2[1 \quad t)p\ (q) \quad s\ (q)] \quad q[(1 \quad t)p\ (q) \quad s\ (q)]}$$

Substituting the value of $\frac{dq}{dt}$ in $\frac{dp}{dt} = p'(q).\ \frac{dq}{dt}$, we get

Let us apply the above conclusion to the case of linear demand and supply functions $P = a + bq$ and $S = m + nq$ so that $p'(q) = b$, $P^2(q) = 0$, $s'(q) = n$ and $s^2(q) = 0$.

Then $\frac{dp}{dt}$ becomes $\frac{b[q\ .\ b \quad (a \quad bq)]}{2[(1 \quad t)b \quad n]} \quad \frac{a \quad 2bq}{2[1 \quad t \quad n/b]}$

Note that here the numerator is equal to marginal revenue.

Alternatively, the pre-tax equilibrium $MR = MC$ is given by

$$a + 2bq \ = m + 2nq$$

from which pre-tax output $q_0 \quad \frac{(a \quad m)}{2(n \quad b)}$

and pre-tax price $P_0 \quad a \quad \frac{b(a \quad m)}{2(n \quad b)}$

Similarly, post-tax equilibrium is given by $a\ (1 - t) + 2b\ (1 - t)\ q = m + 2nq$

which gives post-tax output $q_1 \quad \frac{a \quad at \quad m}{2[n \quad b \quad bt]}$

and post-tax price $P_1 \quad a \quad \frac{b}{2} \quad \frac{a \quad at \quad m}{[n \quad b \quad bt]}$

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Hence, change in price,

$$\Delta P = P - P = \frac{b}{2}\left[\frac{a-at-m}{n-b+bt} - \frac{a-m}{n-b}\right] = \frac{b}{2}\left[\frac{t(mb-an)}{(n-b)^2 + t(nb-b^2)}\right]$$

In case of *ad valorem* tax at the rate of T_c on cost, the change in price becomes

$$\Delta P_1 = \frac{b \quad T_c[bm-an]}{2\ (n-b)^2 + T_c(n^2 - nb)}$$

2. Tax on Oligopoly

Similar considerations apply to the case of a tax on oligopoly.An **oligopolist** is confronted with a demand curve which has a *kink* at the prevailing market price. Demand for the product of the oligopolist at prices higher than the one prevailing in the market is quite elastic, because if the oligopolist under consideration raises his price he is not followed by others. On the other hand, if he reduces his price he is followed by others and therefore the demand at lower prices is quite inelastic for his supply. This produces a kink in the demand curve and a vertical jump in the marginal revenue curve. So long as *MC* curve passes through this vertical portion of *MR* curve, the price and output of the oligopolist remain unchanged. Therefore, if the authorities impose a *specific* or an *ad valorem* tax which does not raise the *MC* curve so as to make it move out of this vertical range of the *MR* curve the incidence of the tax is borne by the oligopolist. In effect, this amounts to the seller facing a demand with zero price elasticity. On the other hand, if the tax is high enough to push the *MC* curve beyond this vertical range of *MR* curve, the price would rise and a part of the tax would be shifted to the consumers. Alump sum tax, it would be noted, does not shift the demand or the cost curves of the oligopolist and therefore the incidence of this tax remains on the oligopolist firm itself.

3. Customs Duties

Customs duties are like commodity taxes. Here also the general rule is that a tax on a commodity is shared between the buyers and the sellers in the ratio of elasticities of supply and demand. Therefore what matters is the actual values of these elasticities, given the freedom of trade. These days, for example, the demand for petroleum products is sufficiently inelastic while supply is sufficiently elastic provided the petroleum exporting countries join hands. The petroleum exporting countries can take a concerted action to restrict supplies if the price offered is reduced. Thus, they can raise the export price of petroleum either directlyor through imposing export duties and therebymake the foreigners pay. On the other hand, if the oil importing countries impose import duties on petroleum, then, for the reasons stated just now, these are least likely to be borne by the exporting countries.

Over the last few decades the dependence of developed countries on imports of several primary products has decreased. They have become net exporters of several items. Consequently, customs duties on such items levied by either importing or exporting countries tend to be borne by the developing countries. Similarly, developed countries

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have deep and huge domestic markets for sophisticated and technologically advanced items, while the developing countries are heavily dependent for these items on developed countries. By implication, developing countries are more likely to bear a major portion of incidence of customs duties even on these items. However, this state of affairs is gradually undergoing a transformation in the case of a few fast growing developing countries. Share of a country in aggregate international trade of an item has a direct bearing upon its capacity to shift the incidence of a customs duty imposed on it because, other things being equal, this share determines its capacity to influence price of that item in international markets. Normally, a country with a smaller sized economy suffers from this disability. This conclusion applies in the case of both exports and exports of a country.

The above analysis is based on the assumption of a free trade. To the extent the trade is not free and there are monopolistic types of restrictions either by privately owned firms or by governments in the form of quotas etc., the operation of demand and supply forces is restricted to particular segments of the world market and therefore the shifting of tax incidence has to be considered in the context of these segmented markets.

4. Tax on Profits

If no profit income enjoys a tax exemption, and if all profit incomes are subjected to a uniform tax-rate schedule, then this tax cannot be avoided by shifting the employment of entrepreneurship from one use to the other. However, even here, low elasticity of demand for some products may permit the shifting of tax incidence to buyers. In that case, post-tax profit in such industries would become more attractive and investment resources will tend to shift into these industries in the long run. Furthermore, to the extent tax incidence cannot be partially or fully shifted to the buyers, both saving and investment will be discouraged. It should however, be remembered that inter-industry mobility of investment and impact on saving and investment are not the incidence but effects of the said tax.

In general, however, it is nearly impossible to identify all sources of profits, estimate them and tax them evenly. In effect, therefore, taxes get levied in a discriminatory manner. Some profit incomes are either not taxed, or evade taxation. In the short run, therefore, the taxed profit incomes fall in comparison with the 'untaxed ones'. Whether the taxpayers are able to shift the tax incidence on to others or not depends upon the relevant elasticities of demand and supply of the goods and services from which the profit incomes are being derived, and the demand and supply elasticities of the inputs of these goods and services. In the long run, it may be possible, in some cases, to shift the resources out of the taxed industries and if that happens, a part of the tax may be shifted on to others.

5. Taxes on Property

Property may be divided into two parts: (i) durable consumption goods, and (ii) capital goods.

Durable consumption goods include self-occupied residential houses, cars, furniture, and jewellery etc. When these goods are taxed, their current owners suffer a reduction in net satisfaction derived from their consumption. Moreover, the potential buyers of these goods would reduce their offer prices to compensate for the tax liability. Therefore, in their case, tax incidence is likely to be shifted backward only, unless this is more than counterbalanced by supply scarcity.

Capital goods may be classified into two categories, namely financial assets and physical means of production like machinery, equipment, etc.

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Financial assets: In general, the owners of financial assets are better aware of tax rates (current and impending) and likely changes in them. The market for financial assets is highly sensitive (responsive) to any changes in returns. Therefore, a selective tax on some financial assets induces a shift out of the taxed assets into the non-taxed ones. It means that the holders of the taxed assets try to sell them while their buyers reduce their offered prices. Therefore, in the case such taxed assets, a backward shift of tax incidence takes place and pre-tax (gross) average rate of return on them moves up. Correspondingly, increased preference of buyers for non-taxed assets pushes up their prices with a consequent reduction in the average rate of return on them. This tendency continues till post-tax rate of return on taxed assets becomes equal to the rate of return on non-taxed assets.

Physical assets: It follows from our discussion above that the possibility of backward shifting of incidence exists in this case also through tax capitalization. The extent of this backward shifting will obviously depend upon the demand and supply elasticities of the taxed goods. Similarly, there is also a possibility of forward shifting of incidence. Its likelihood gets stronger under conditions of strong demand and/or scarcity.

In this context, we should also examine whether the tax on a physical asset adds to the fixed cost or variable cost of production. In the short run, taxing like items of machinery adds to fixed cost with no change in marginal cost (which depends upon a change in variable costs). By implication, in the short run, the supply conditions do not change (since the suppliers base their decisions on *MC* and *MR* only). In the long run, however, all factors become variable and therefore a tax on any of them adds to the *MC*. This, accordingly, pushes up the price of the product and a forward shifting may take place.

It is possible that shifting of a tax on a capital good may take place in several stages. This is because in a modern economy, most consumption goods pass through several production stages before they reach the final consumers; and inputs used in them are either capital goods or other intermediate products. Taxation of capital goods, therefore, may generate a series of price variations covering successive stages of production.

6. Tax on Houses/House Rents

A tax on house properties as such is also subject to usual forces of tax capitalization. The purchasers of houses try to shift the tax back through a reduction in the initial purchase prices. However, since houses are often rented out, a further possibility of shifting the tax on to the tenants also exists. In the short run, the supply of the houses is sufficiently inelastic and that works towards keeping the incidence on the house owners. However, if the demand for houses is also inelastic, a forceful tendency for house rents to go up will also exist simultaneously. The net result regarding the sharing of the tax incidence will depend upon the relative strength of the two short term elasticities. In the long run, however, if investment in houses becomes less profitable, further construction of houses will be discouraged and therefore the tax incidence will again tend to settle on the tenants.

If instead of houses as such, a tax is imposed on house rents, its sharing will depend upon the relative strength of elasticities of demand and supply. Again, the extent to which the tax incidence is borne by the house owners, investment in houses will be discouraged. This will reduce the supply of houses in the long term and would raise the house rents further. It appears, therefore, that unless all investment incomes are taxed simultaneously, a tax on house rents will tend to push the incidence on to the tenants.

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7. Inheritance and Gift Taxes

Different views are put forth regarding the incidence of inheritance taxes. According to some people the incidence is upon the testator who is leaving behind the estate to be taxed. It is stated that the only difference between a straightforward tax on this inheritance and other property is that in the former case the tax is paid only after the death of the testator. It is also argued that the testator may have planned to save additionally so as to leave a given value of the after tax estate to the successors, in which case again the incidence should be considered to have fallen on him.

However, these arguments are misplaced and also tend to confuse the issue. *Firstly*, it must be remembered that the dead do not pay taxes. And so the incidence of the inheritance taxes cannot be on the testator. Also this tax does not discriminate between two situations where in one the testator saved additionally to leave a given value of after tax estate and in the other in which he did not. *Secondly*, the inheritance tax is levied not on the value of the estate as such but on the portion of it inherited by a successor. The rate of inheritance tax will depend upon the value of the inheritance and other relevant factors connected with the tax paying capacity of the successor. The fact that the incidence of the tax is on the successor can be seen simply by comparing the inheritance going to a successor with and without the tax. If the tax rate is increased, or reduced, it is the successor who will be immediately affected. As Adam Smith says: 'Taxes upon the transference of property from the dead to the living, fall finally as well as immediately upon the person to whom the property is transferred.' If the testator changes his policy with regard to saving effort or the division of the property in his will, it will be a part of the effects of this tax and not the incidence itself.

Similar considerations apply to the case of gift taxes also. Take the case when the tax is levied on the gift recipient. Acomparison of the two situations, namely the addition to the resources of the gift recipient with and without a tax would clearly show that the incidence of a gift tax lies not on the giver but on the one who receives it. The argument is further strengthened by the fact that the tax schedule is related to the amount of each gift individually (or the total gifts which one might *receive*) and not to the total gifts which one might be making. The possibility of gift giver revising the gift amount in the light of the possible tax would fall in the realm of the tax effects. In case the tax is levied on the donor, the incidence also lies on him. As an *effect* of it, the donor might alter the gift amount/s.

8. Tax on Net Income

Net income here refers to the income of an individual or family, as the case may be, net of the expenses incurred for earning that income. It is not to be equated with receipts during a given period of time. A tax on net income may be specific or general, that is to say, it may be levied only on incomes from specified sources or on all incomes irrespective of their sources. Also income taxation may discriminate between 'earned' and 'unearned' incomes and the schedules of tax rates may be different for the same amounts of income but of different kinds.

A specific income tax is an incentive for income earners to shift their work effort to non-taxed sources of income. And those who cannot do so will try to shift the incidence of their tax liability through forward and/or backward shifting.

However, a tax on income in general is more likely. In this case, it will not be possible to avoid the tax by shifting employment. Shifting of tax incidence will take place only if the post-tax incomes of the taxpayers fall below subsistence. In all other cases,

the tax incidence will lie upon the tax assessees and it will be so even if the rates of taxation are progressive since higher tax rates can be avoided only by not earning more. Even taxing earned and unearned incomes at different rates would not make any difference to the outcome of tax incidence. Shifting of income from unearned into earned categories cannot take place so as to lighten the burden of taxation since it is an impractical proposition.

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However, the above conclusion will change if the tax administration is weak, so that some categories of income earners are able to evade the tax. In that case, on account of ineffective tax administration, it amounts to taxing some sources of income and leaving others out.

5.5 ELASTICITY AND BUOYANCY OF TAX

Elasticity and buoyancy of tax highlight the reasons for an increase in the yield of tax over time and/or in response to a change in its rate.

Buoyancy

An increase in revenue of a tax on account of a growth of its base is termed its buoyancy. A buoyant tax has an inherent tendency to yield greater tax revenue with the growth of *its base.* Thus, for example, with a given rate-structure of income tax and the definition of taxable income, if yield from income tax increases with an increase in national income, it would be termed as buoyant tax. Similarly, excise duties are levied on production of specified goods. If additional items are not brought under these duties and the rate structure of existing duties also remains unchanged, but the revenue from excise duties still increases with an increase in the production of excisable items, we have a case of buoyancy of excise duties. It is clear that the concept of buoyancy may be applied to an individual tax or to a wider body of taxes. Numerically, the buoyancy of an individual tax is measured as a ratio of the proportionate increase in its revenue to a proportionate increase in its base.

Symbolically, buoyancy of an individual tax, *T*, with a base *B*, is given by the ratio of {proportionate change in tax revenue}/{Proportionate change in tax base}, that is

$$Bt = \{\Delta T/T\}/\{\Delta B/B\} = \{\Delta T/B\}\{B/T\}$$

Variations in both tax revenue and its base are estimated over a given time period. A measure over a shorter time interval is likely to be less representative because economic data, by their very nature, tend to fluctuate more violently over shorter periods of time.

The numerical value of B_t increases if the rate of increase in tax revenue is faster than that of its base. It goes without saying that several factors contribute to the buoyancy of a tax under consideration, such as, the definition of its base, its rate structure, procedural rules and regulations, and so on.

The concept of tax buoyancy can be extended to cover the entire tax system of the country, or entire tax system of one government (Central, State or Local) of the country, or some other combination of taxes and governments.

Elasticity

The yield of a tax may also vary in response to an extension of its **coverage** or a revision of its **rate**. The former is in the nature of an increase in its base through a modification of its legal definition. For example, legal definition of taxable income of an

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8. How does reduction in the purchasing power lead to low efficiency?
9. What is the reason for the effects of taxation on peoples' willingness to work, save and invest?
10. What is tax burden and how can it be divided?
11. Who is a monopolist?

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individual may be revised by disallowing deduction of expenses incurred on conveyance to and from workplace. The ratio of a proportionate change in revenue of a tax to the proportionate change in its rate and/or coverage measures its elasticity. Symbolically, elasticity of an individual tax, *T*, is given by the numerical value of

$$Et = \{\Delta T/T\}/\{\Delta CR/CR\} = \{\Delta T/\Delta CR\}\{CR/T\}$$

where CR denotes coverage and/or rate of the tax *T*. It is noteworthy that when elasticity of a tax is measured with reference to its base, it (in a way) becomes a case of its buoyancy with the difference that, as in the case of a rate revision, the increase in the base is a result of a deliberate government action with the purpose of increasing receipts of tax revenue. It would, therefore, be better if we use phrases like 'rate elasticity of an excise tax' (corresponding to, price elasticity of demand for good X), or 'base elasticity of an excise tax' and so on.

This leads us to an important and relevant observation. Achange in the rate of tax T would yield an equi-proportionate change in its revenue provided there is no change in its base. On the other hand, if change in the rate of a tax also causes a change in its base, the change in tax revenue will be the sum total of the two effects generated by it, which may be termed the 'rate effect' and the 'base effect'. Arthur Laffer called them 'arithmetic effect' and 'income effect'. Laffer is credited with explaining and elaborating this two-headed effect of a change in rate of ***income tax*** on the corresponding receipts of its revenue in the form of 'tax revenue as a function of tax rates', and representing it graphically.

5.5.1 Laffer Curve

Laffer Curve got its name with an article by Jude Wanniski entitled 'Taxes, Revenues, and the Laffer Curve' in *The Public Interest*, Winter, 1978. Wanninski was inspired by the ideas and findings of Arthur B. Laffer who was the founder and chairman of Laffer Associates. As stated earlier, it is a graphic representation of income tax revenue as a function of income tax rates. Each point on this curve represents a pair of 'rate of income tax' and the corresponding amount of 'income tax revenue'. Conceptually, the curve depicts responsiveness (elasticity) of income tax yield to the ***rate*** of income tax. It holds that at extreme rates of 0 per cent and 100 per cent, the revenue yield of income tax is reduced to zero, and that at least at one rate between these two extremes, the yield of income tax is a non-zero maximum. That way, the Laffer Curve is either bell-shaped or parabolic.

Laffer himself argued that any change in income tax rate generates two effects, namely,

(a) arithmetic effect, and (b) economic effect. Arithmetic effect is the change in tax revenue on account of a change in its rate with an unchanged tax base. Given the tax base, a higher rate yields more revenue and vice versa. Economic effect, on the other hand, is the resultant change tax revenue on account of a change in the tax base itself. A lower tax rate leaves a larger proportion of after-tax income in the hands of the taxpayers. It, therefore, encourages work, output and employment and leads to a growth in the tax base. In contrast, an increase in tax rate shrinks the tax base. People decide to work less and earn less because the post-tax portion of their income shrinks.

Thus, up to a stage, arithmetic effect of an increase in income tax rate outweighs the negative impact of its income effect resulting in an increase in total tax yield. However, with successive increases in tax rate, negative impact of income effect first becomes equal to, and then exceeds the positive impact of arithmetic effect. As a result, tax revenue first increases, peaks to a maximum, and declines after that.

Further Elaboration

The aggregate impact of an increase in rate of income tax may be explained in the following manner as well. For a person, both income and leisure are essential and competitive with each other in a special manner. Income is needed to meet ones needs, including basic ones, and leisure is needed for consuming income. Neither of these two can be reduced to zero. With every increase in income, the marginal utility of leisure goes up. And with every reduction in income, marginal utility of income increases and that of leisure decreases, but the latter never fall to zero. It follows that in practice, people would not stop earning an income even when income tax rate is increased to 100 per cent. Income earners need some post-tax income to survive and they would resort to tax evasion by one means or other.

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Limitations of the Laffer Curve

The concept of Laffer Curve as presented above is highly simplistic and needs several qualifications and clarifications including the following.

- The concept does not claim to provide universallyvalid numerical values of elasticity of tax yield to rates of tax in between 0 per cent and 100 per cent.
- The concept is based upon the assumption that the economy quickly and adequately responds to changes in rates of income tax.
- It can be claimed that revenue yield at 100 per cent tax rate would not be zero because that would happen only if at least one the two conditions are satisfied, namely, (i) the economy stops generating any taxable income, and (ii) people are able to conceal their entire taxable income from the tax authorities. These conditions are obviously in the realm of theoretical curiosity.
- Elasticity of tax yield is critically dependent upon several factors including:
  - o Flexibility of the economy
  - o Efficiency of administration, and the scope for concealing income from tax authorities
  - o Manner and productive efficiency of public expenditure
- Elasticity of tax yield varies from country to country, as also over time even in the same country.
- The fact that tax yield is responsive to tax rates, is borne by the Indian experience where successive lowering of maximum income tax rate from a high of 97.5 per cent to around 30 per cent resulted in more than proportionate increase in income tax yield. Similar experience is reported from several other countries as well. However, critics say that it a long term phenomenon.
- Rate elasticity of income tax yield is closely affected by the existence, impact and incidence of other taxes in the country.
- It is also deeply responsive to the growth rate of the economy which, in turn, depends upon a host of domestic and global factors.
- Since income tax is levied on taxable incomes as measured in nominal terms, two additional factors also come into play, namely (i) the rate of inflation which pushes up incomes in money terms, and (ii) rebates, concessions, and exemptions embedded in the tax statute (and thereby legal definition of taxable income) itself.

Check Your Progress

12. What is buoyant tax?
13. According to Laffer, what are the effects generated by any change in income tax rate?
14. What are the factors on which elasticity of tax yield is dependent?

5.6 SUMMARY

In this unit, you have learnt that:

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- A multiple tax system has widespread ramifications on the economy and different kinds of taxes have different kinds of effects on the private business. Taxes affect the economy in many ways by affecting macro variables like consumption, saving, investment, price structure, price levels and work effort.
- Direct taxes include personal and corporate income taxes on current earnings, wealth tax and gift tax on transfer of property. Indirect taxes include excise duty, sales tax, custom duties and a number of other taxes imposed by the States.
- The impact of income taxation on the growth of private business in general, and on private investment in particular, may be examined through its effects on (i) people's work-efforts; (ii) saving of the households in general and of private firms in particular and (iii) incentive and ability to invest.
- The effect of taxation on private enterprise depends, among other things, on how income tax affects people's desire to work.
- Taxation of personal income reduces return from labour and, therefore, it alters peoples' choice between leisure and work. When a tax is imposed or income tax rate is increased, wage income decreases.
- Tax effect on work efforts depends on: (i) the level of income; (ii) tax-rates—proportional, progressive or regressive; (iii) the productivity or marginal efforts and (iv) non-monetary benefit, such as free accommodation, education of children, health care, travel benefits, etc.
- Incidentally, as regards the effect of indirect taxes, economists generally compare it with the effect of income tax. Since there is no definite measure of income tax effect on work effort, nothing definite can be said about the effect of indirect taxes too.
- It is believed that the negative effect of indirect taxes on work effort is less than that of income tax because workers can avoid indirect taxes by consuming less of a taxed commodity, which is not possible under income tax.
- Commodity taxes are classified either as a:
  (i) Specific Tax
  (ii) Ad Valorem Tax
- When a tax is imposed on a commodity according to its weight, size or measurement, it is called a specific tax. For instance, when the excise duty is imposed on sugar on the basis of its weight or a piece of cloth is taxed according to its length or a tax on a picture is levied on the basis of its size, it is known as a specific tax.
- When the tax is levied on a commodity according to its value, it is termed as an ad valorem tax. Whatever may be the weight or size of the unit of the commodity, the tax is charged according to its value. Several imported commodities are taxed not according to their weight or size but according to their value.
- The study of incidence and shifting of taxes is most important in the domain of public finance. The objective of the study is to enquire about the class, section or group of individuals who ultimately bear the burden of taxation.
- The incidence of tax means the final money burden of a tax. Whenever a tax is levied, its money burden falls on some individual. Under the tax incidence, we try

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to find out as to where the money burden actually falls or who bears the burden of a tax.

- Sometimes a distinction is made between the impact and an incidence of a tax. The impact of a tax is the first point of contact of the tax with the taxpayers, i.e., the impact of a tax falls on the person who pays the tax in the first instance. The incidence of a tax refers to the final or ultimate burden of a tax.
- The problem of the impact of tax as distinct from the incidence of tax does not occur in the case of direct taxes because the person who pays the income-tax cannot shift it on others. He will have to pay the tax from his own pocket. The distinction between the impact and incidence of a tax becomes, however, very prominent in the case of indirect taxation.
- The effects of taxation on production and economic growth in the economy may be analysed under the following three heads:
  - Effects of taxation on peoples' ability to work, save and invest
  - Effects of taxation on peoples' willingness to work, save and invest
  - Effects of taxation on the allocation of resources between different trades and regions
- Reduction in the purchasing power due to taxation would lower the standard of living which, in turn, results in low efficiency. Lower efficiency would lead to lower income which would further lead to low efficiency.
- The effects of taxation on peoples' willingness to work, save and invest are partly due to the money burden of tax and partly due to the psychological state of the taxpayers.
- The government can use its tax policy to divert the scarce resources of the country in the desired productive activities. Thus, taxation can influence not only the size of production but also the pattern of production in the economy.
- Effects of a tax can be both beneficial and harmful. Its harmful effects are termed its burden and are conventionally divided into its money burden and real burden.
- Incidence of a tax can be shifted only through a sale/purchase transaction. For example, if a producer is asked to pay an excise duty on his product, he may enhance its sale price or he may force his suppliers of inputs to accept lower prices.
- Land rent, according to Ricardian theory, arises due to the fact that (a) agricultural production is subject to the law of diminishing returns and (b) with increasing population and demand, the supply of agricultural output and hence the marginal cost of production increases.
- A monopolist, by definition, fixes the output and supply price of his product so as to get the maximum possible profits, which in turn are given by a position where marginal cost equals the marginal revenue (MC = MR).
- An oligopolist is confronted with a demand curve which has a kink at the prevailing market price. Demand for the product of the oligopolist at prices higher than the one prevailing in the market is quite elastic, because if the oligopolist under consideration raises his price he is not followed by others.
- Property may be divided into two parts: (i) durable consumption goods, and (ii) capital goods.

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- A tax on house properties as such is also subject to usual forces of tax capitalization. The purchasers of houses try to shift the tax back through a reduction in the initial purchase prices. An increase in revenue of a tax on account of a growth of its base is termed its buoyancy. A buoyant tax has an inherent tendency to yield greater tax revenue with the growth of its base.
- Numerically, the buoyancy of an individual tax is measured as a ratio of the proportionate increase in its revenue to a proportionate increase in its base.
- It goes without saying that several factors contribute to the buoyancy of a tax under consideration, such as, the definition of its base, its rate structure, procedural rules and regulations, and so on.
- The ratio of a proportionate change in revenue of a tax to the proportionate change in its rate and/or coverage measures its elasticity.
- A change in the rate of tax T would yield an equi-proportionate change in its revenue provided there is no change in its base. On the other hand, if change in the rate of a tax also causes a change in its base, the change in tax revenue will be the sum total of the two effects generated by it, which may be termed the 'rate effect' and the 'base effect'.
- Laffer Curve got its name with an article by Jude Wanniski entitled 'Taxes, Revenues, and the Laffer Curve' in *The Public Interest*, Winter, 1978. Wanninski was inspired by the ideas and findings of Arthur B. Laffer who was the founder and chairman of Laffer Associates.
- Laffer himself argued that any change in income tax rate generates two effects, namely, (a) arithmetic effect, and an (b) economic effect.

5.7 KEY TERMS

- **Specific tax:** When a tax is imposed on a commodity according to its weight, size or measurement, it is called a specific tax.
- **Ad valorem tax:** When the tax is levied on a commodity according to its value, it is termed as an ad valorem tax.
- **Tax burden:** The incidence of tax means the final money burden of a tax.
- **Monopolist:** Amonopolist, by definition, fixes the output and supply price of his product so as to get the maximum possible profits, which in turn are given by a position where marginal cost equals the marginal revenue (MC = MR).
- **Buoyancy:** An increase in revenue of a tax on account of a growth of its base is termed its buoyancy.

5.8 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Direct taxes include personal and corporate income taxes on current earnings, wealth tax and gift tax on transfer of property. Indirect taxes include excise duty, sales tax, custom duties and a number of other taxes imposed by the States.
2. The effect of taxation on private enterprise depends, among other things, on how income tax affects people's desire to work.
3. Tax effect on work efforts depends on: (i) the level of income; (ii) tax-rates—proportional, progressive or regressive; (iii) the productivity or marginal efforts

and (iv) non-monetary benefit, such as free accommodation, education of children, health care, travel benefits, etc.

4. When a tax is imposed on a commodity according to its weight, size or measurement, it is called a specific tax. For instance, when the excise duty is imposed on sugar on the basis of its weight or a piece of cloth is taxed according to its length or a tax on a picture is levied on the basis of its size, it is known as a specific tax.
5. The main advantage of an ad valorem tax is that it imposes a greater burden on the richer sections of society. From this point of view, an ad valorem tax is more equitable than a specific tax.
6. The study of incidence and shifting of taxes is most important in the domain of public finance. The objective of the study is to enquire about the class, section or group of individuals who ultimately bear the burden of taxation.
7. Sometimes a distinction is made between the impact and an incidence of a tax. The impact of a tax is the first point of contact of the tax with the taxpayers, i.e., the impact of a tax falls on the person who pays the tax in the first instance. The incidence of a tax refers to the final or ultimate burden of a tax.
8. Reduction in the purchasing power due to taxation would lower the standard of living which, in turn, results in low efficiency. Lower efficiency would lead to lower income which would further lead to low efficiency.
9. The effects of taxation on peoples' willingness to work, save and invest are partly due to the money burden of tax and partly due to the psychological state of the taxpayers.
10. Effects of a tax can be both beneficial and harmful. Its harmful effects are termed its burden and are conventionally divided into its money burden and real burden.
11. A monopolist, by definition, fixes the output and supply price of his product so as to get the maximum possible profits, which in turn are given by a position where marginal cost equals the marginal revenue (MC = MR).
12. With a given rate-structure of income tax and the definition of taxable income, if yield from income tax increases with an increase in national income, it would be termed as buoyant tax.
13. Laffer himself argued that any change in income tax rate generates two effects, namely, (a) arithmetic effect, and an (b) economic effect.
14. Elasticity of tax yield is critically dependent upon several factors including:
    - o Flexibility of the economy
    - o Efficiency of administration, and the scope for concealing income from tax authorities
    - o Manner and productive efficiency of public expenditure

5.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. How can the impact of income taxation on the growth of private business in general and on private investment in particular be examined?
2. Under which condition will 'the worker tend to substitute leisure for work'?

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3. 'Taxation has both negative and positive effects on labour supply'. Give your views.
4. State the advantage and disadvantage of specific tax.
5. What is tax incidence? What is the main focus of the study of incidence and shifting of taxes?
6. What is Musgrave's specific and differential incidence?
7. How can the effect of taxation on production and economic growth be analysed?
8. What is excess burden? According to Musgrave, how does this burden result?
9. Write a note on the diffusion theory of tax shifting.
10. How are custom duties similar to commodity taxes?
11. What do the terms elasticity and buoyancy of tax mean?

Long-Answer Questions

1. Assess the concept of tax on income and its effect on work effort.
2. Discuss the classification of commodity tax.
3. Critically analyse the concept of impact and incidence.
4. Differentiate between impact and incidence of a tax.
5. Describe the effects of taxation on production in different market conditions.
6. Discuss the effects of taxation on price.
7. 'Effects of a tax go far beyond its incidence'. Elaborate.
8. Explain in detail the theories of tax shifting.
9. Describe the incidence of some selected taxes.
10. 'Elasticity and buoyancy of tax highlight the reasons for an increase in the yield of tax over time and/or in response to a change in its rate.' Explain.
11. What is the Laffer curve? Discuss its limitations.
12. 'Taxation can influence not only the size of production but also the pattern of production in the economy.' With regard to this statement, assess the effect of taxation on the allocation of resources.

5.10 FURTHER READING

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