

## CHAPTER 2

### THEORETICAL FRAMEWORK

#### 2.1 Introduction

All taxes fall on people. The *Little Oxford Dictionary* defines tax as money compulsory levied by state on person, property, business etc. James and Nobes (1996/97) define tax as a compulsory levy made by public authorities for which nothing is received *directly* in return. Taxes can also be understood as the transfer of money from the individuals, firms or organizations, to the public sector, but they exclude loan transaction and direct payment for publicly produced goods and services (Allan, 1971). Taxation is therefore the means of transferring resources from the private to the public sector. There is a general agreement that the prime objectives of tax are effectiveness, a satisfactory yield and a fair distribution of burden among all taxpayers (OECD, 1976). However, there are other important objectives – of course depending on the goals of particular government – as we shall see later on.

Besides taxation, there can be three other methods of raising resources, and these can be via printing money, making charges, and through borrowing (domestic or foreign). Out of these four methods of raising revenue, taxation is by far the most important source of government revenue (James & Nobes, 1996/97; Tahir & Mat Zain 1990). In addition, tax system is often identified as one of the most powerful levers available to poor governments to move their economies from their present, by

definition sorry, states to the distinctly happier positions which invariably characterize the final year of development plan (Toye, 1978).

In this chapter, we shall look at the theory of tax, which encompasses the theory of public finance, the theory of fiscal policy, the need for taxation, the effects of taxation, the general objectives and purposes of taxation, the classifications of taxes, and also a number of important concepts often used as measures of tax performance. In the end of this chapter, this somewhat brief introduction of taxation should provide us the basis for the study.

## **2.2 The Theory of Public Finance**

It is necessary to look at the nature of fiscal operations in general if one would want to appreciate tax's role in the economy. Fiscal operations involved firstly, a transfer of purchasing power from the people to the government; and second, its transfer to the people through government expenditures. The first category of transfers are included all devices employed by the public authority to raise revenue – such as, taxes, fees, borrowing, deficit financing, profits from public enterprises, etc., and the second category comprises all forms of government expenditures both exhaustive and transfer payments (Bhaduri, 1985).

Public finance is essentially concerned with the income and expenditure of public authorities. Since the business of the state is the satisfaction of collective wants, the main content of the theory of public finance consists of the examination

and appraisal of methods by which the public authority provide for satisfaction of those wants and secures the necessary funds to carry out its functions (Bhaduri, 1985). To achieve these objectives, it requires a compulsory acquisition of community's resources, via taxation and other means. The fiscal policy's appropriateness for a country will of course depend, apart from other factors (say geographical factors and resources abundance), on the stage of its development and on socio-political goals.

### 2.2.1 Historical Background of Fiscal Policy

The *laissez-faire* doctrine developed by the classicists, namely, A. Smith, Ricardo and the Marginalists, had important implications for fiscal policy. In the classical model, fiscal operations have little or no regulatory functions at all, since here, full employment, optional allocation of resources and distribution of income are automatically reached through the operation of free market mechanism (Bhaduri, 1985). The fundamental idea of this theory of free market is such that almost all factors or production are utilized by the private sectors. Government's acquisition on resources should be restricted only to the needs arising out from its primary functions of protection and security of life and property and the supply of those goods and services that are not provided by the private entrepreneurs.

The Neo-Classical economists, especially Marshall and Pigou re-stated the doctrine of state action in the economic field. Marshall brought out the full implications of the manner in which productive resources tend to be adjusted to relative prices through the process of substitution, but pointed out that such an

adjustment does not automatically bring about a condition of maximum social advantage. He demonstrated some of the implications of the theory of *laissez-faire* to the attainment of maximum satisfaction but was further explored by Pigou. He started with the theory of equi-marginal distribution of resources and demonstrated, first, that the hindrance which obstruct this tendency and inhibits the maximization of the national dividend; and second, he also pointed out the various kinds of divergencies between the marginal private net product and the marginal social net product or resources under a system of private enterprise. Thus, based on this proposition, Pigou argued that in order to attain maximum social welfare, the state should 'correct' these divergences. In other words, the state should undertake the responsibility of 'correcting' the misallocation of resources, which occur under the stimulus of private profit. In the context of distribution of income and wealth, the neo-classicists recognized the possibility of unfairness in factoral rewards due to unequal bargaining positions of labor and capital. The inequality of income and wealth, which a free market system produces, was also put on the forefront. This showed us that they made out a case for the transference of income from the rich to the poor in the interest of social welfare.

Keynes, however, believed that the neo-classical views of the misallocation of resources are not the major evil in the modern economic system. He argued that it is the employment of resources constitutes the central problem of the modern capitalist economy. Pioneering the Keynesian Cross, Keynes believed that the volume of employment of resources is a function of aggregate effective demand, which depends



on the total expenditure in the country ( $C + I + G + XM$ )<sup>1</sup>. He contended that the classical doctrine of competitive process that automatically generates aggregate demand to absorb all productive resources was incorrect. The deficiency of aggregate demand arises out of under-consumption or over-saving<sup>2</sup>. Discontinuing or reducing consumption does not necessarily lead to capital accumulation, as what the classicists believed. On the contrary, saving may lead to unemployment, a fall in income, idle capacity and so a reduction in capital formation. These were the propositions made by the classicists. However, Keynes maintained that private investment rises when demand increases, which means that consumption also rises and that a reduction of consumption instead of increasing investment actually reduces it. In simple term, consumption and investment are complementary to one another. For this revolutionary idea, fiscal policy's importance has become more apparent. In his model, the government should control and direct economic forces through fiscal operation, rather than leaving it to the infamous classicists' 'Invisible hand'.

### 2.3 The Operations of Fiscal Policy

Policy makers have two principal sets of tools by which they can influence the economic activity and these are through the use of monetary policy and fiscal policy. Fiscal policy consists of the control of government spending and taxation. It is always convenient to start with the working of fiscal policy to enable us appreciate the fiscal policy, especially taxes. To do this, one must first determine the Aggregate Demand,

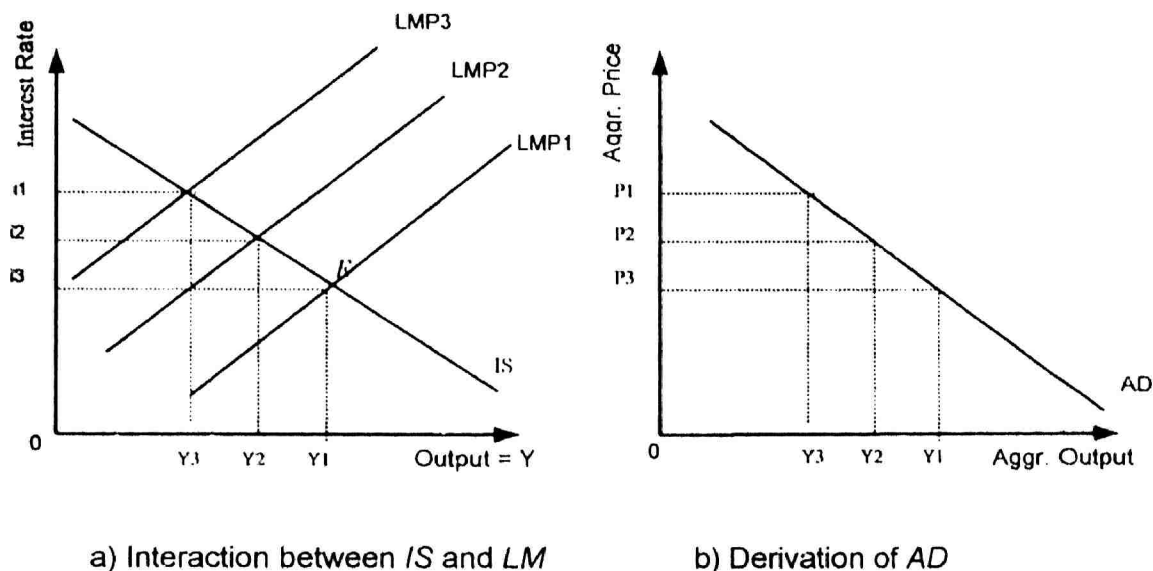
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<sup>1</sup> This will be looked at in more detail later on.

<sup>2</sup> There are two ways in which we can 'use' our money, either to consume it or save it. It is typical to assume that individuals will use some portion of its income for consumption purposes and uses the

$AD$ , for the economy. According to the Keynesians,  $AD$  is created by the interaction between  $IS$  (which shows the equilibrium levels in the goods market) and  $LM$  (which shows the equilibrium levels in the money market). The interaction between  $IS$  and  $LM$  and hence the derivation of aggregate demand is shown in **Diagram 2.1** below.

**Diagram 2.1:**  
**The Derivation of  $AD$**



To derive the aggregate demand in price and output space, panel a) shows us not only the single intersection of  $IS$  and  $LM$  curves, but also shows us what happens to  $LM$  curve when price level increases (from  $P1$  to  $P2$  to  $P3$ ). The initial equilibrium point is at  $E$  at a given price  $P1$ . The increase in price (say from  $P1$  to  $P2$ ) means that the money supply in real terms ( $MP$ ) will fall (dividing  $M$  with an increasing  $P$ ) – shifts of  $LM$  curve to the left. This reduces the real money supply and shifts the money supply curve to the left, raising the interest rate. The increase in interest rate makes borrowing more costly to investors and thus investment and net exports will

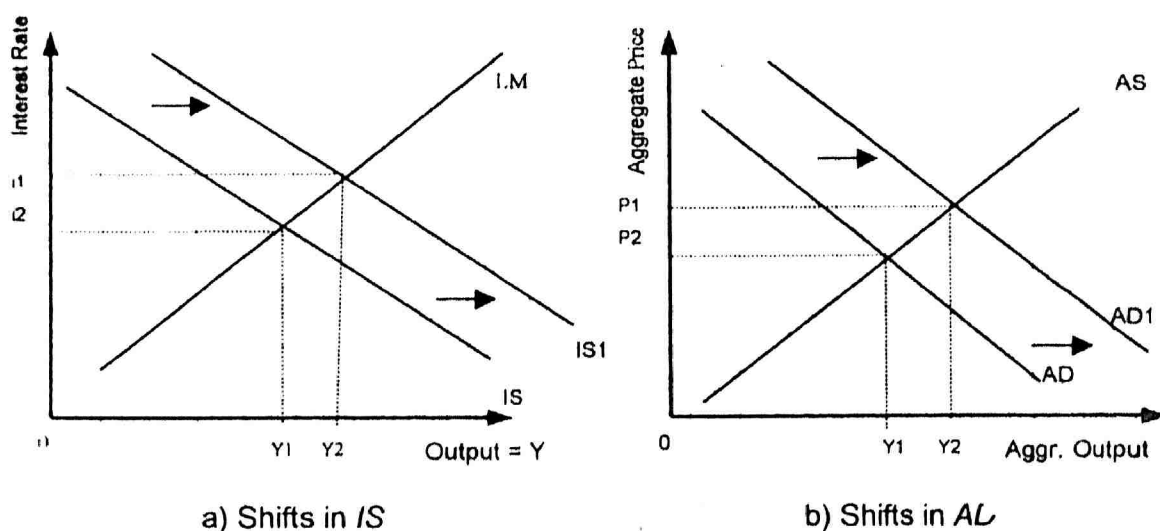
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other portion for saving. Thus, if consumption is lower than what it should have been we say under-consumption but instead if saving is higher than it should have been, we say over-saving.

decline and so will output. A further increase in price level will further deteriorate output. Based on this, the  $AD$  is derived and then produced in panel b).

Early Keynesians believe that money does not matter at all. Therefore, the stands of the early Keynesian can be expressed as; the shifts in  $AD$  can only take place when  $IS$  changes (shifts). This means that  $LM$  does not have any influence over the  $AD$ . This shifts in  $IS$  can be caused by four factors and these factors are; changes in autonomous consumer spending,  $C$ , changes government spending,  $G$ , changes in investment spending related to business confidence,  $I$ , changes in tax,  $T$ , and autonomous changes in net export,  $XM$ . The changes of these factors will shift the  $IS$  curve and hence the  $AD$ . For example, let say take the case of the expansionary fiscal policy, either an increase in government spending or decrease in taxes. In either case, the  $IS$  curve shifts to the right. The result of the change in fiscal policy is a rise in output to  $Y_2$  and a rise interest rate to  $i_2$  and thereby shifting  $AD$  to the right.. This is shown in **Diagram 2.2** below.

**Diagram 2.2:**  
**Increase in Government Spending/ Tax Reduction**



However, we need to be cautious of the problem of complete crowding out, first formally exposed by the monetarist. When government spending increases, the government may have to finance this spending by competing with private borrowers for funds in the credit market (selling bonds). This will raise interest rate, in turn increasing cost of financing purchases of both physical and consumer goods and lowering net exports<sup>3</sup>. The result is that private spending will fall, and so aggregate demand may remain unchanged. This proposition by the monetarist, to a certain extent, agreed by the Keynesian, though the Keynesian contended that in the short run only partial crowding out occurs, in which there is some decline in private spending but does not completely offset the rise in government spending. Similar response is also expected towards taxation policy. This consideration is quite important, because it may in fact holds the key to effectiveness of fiscal policy.

## **2.4 The Need for Taxation**

Why does government needs taxation? To answer this question one must first identify the functions of the government. The classicists and the neo-classicists contended that with the policy of *laissez-faire*, the economy would achieve the optimal allocation of resources stimulated by the work of the 'invisible hand'. However, Keynes did not agree with this proposition and believed that government intervention is necessary in some 'key' areas of the economy. One of the most reasonable rationales for the government involvement in the market is in the provision of particular types of goods and services. It is commonly agreed that some goods and

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<sup>3</sup> As domestic interest rate rises, the value of dollar rises, domestic goods become more expensive, and net export falls.

services that are in need by the population are not adequately serviced by the market. This is because they have such characteristics that discourage their provision by the market. These goods and services can be typed into social and merit goods. Social goods are goods, which are provided by the state principally, because of jointness of their consumption. These include defense, law and order, lighthouse, public beach, public toilets, recreation park and others. Merit goods on the other hand, are goods, which are provided by the state mainly because of ignorance and externalities. Education and health services are the examples of these goods. These inadequacies signaled for government intervention. However, to finance these activities, the authority needs funds, and one means to accomplish this is through taxation. This is said to be the primary reason to why the government needs taxation, though, as will be seen later on, the government has other uses and therefore needs for taxation.

James and Nobes (1996/97) said that what the government gives it must first take away. That is, in order for the government to provide public services to the public, something must be taken from the public. This so called the transfer of resources from the private (the public and entrepreneurs) to the public sector, can be performed generally via four methods, one of which we are already familiar with. Printing money, though less arguably easiest to implement, can be considered as the least favored method because of its 'built-in' inflationary effect. When Russian government found itself with huge budget deficit in 1991, she was unable to finance this deficit by any other means, had to resort to its only option, printing money

(Mishkin, 1995). Not surprisingly, given the rapid money growth, inflation took off, averaging close to 1000% in 1992 and 1993<sup>4</sup>.

Besides printing money, one other option is by imposing charges for the utilization of goods and services made for the public. There is also a problem associated with this approach because many government's services cannot be 'charged' fairly. Defense and law enforcement for examples, are the two services that government could not possibly put charges fairly onto. This is caused by the problem of free riders, whereby individuals can avoid paying charges, by simply understating the value of the program so that they can enjoy its benefits without paying and they are able to do this because of the nature of public goods that are nonexclusive – there is no way to provide the service without benefiting everyone – that is, no one is excluded from using them even if they do not pay.

The last method of raising revenue is through borrowing. The government can borrow money through selling government bonds to the public or through borrowing from local or foreign banks and organizations set up to assist countries with financial difficulties (such as the infamous International Monetary Fund (IMF)). This alternative of raising funds are of course, had been widely used – and had also been widely criticized – especially by those nations that face unstable economic condition and financial difficulties and need assistance from strong world financial organization.

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<sup>4</sup> This process has therefore been described as an 'inflation tax' by Johnson (1971) and Friedman and Friedman (1987), quoted in James & Nobes (1996/97).

Though taxation has its limits as well, but they considerably exceed the amounts that can be raised by resorting to the printing press, charging consumers directly, or borrowing (James & Nobes, 1996/97). And as stated earlier, whilst the governments often use all the four methods of raising resources, taxation is usually by far the most important source of government revenue.

## **2.5 Classifications of Taxation**

A fairly straightforward classification is the one used by the Organization for Economic Cooperation and Development (OECD) and is presented in **Table 2.1**. On top of that however, there are a number of ways in which tax can be categorized. In general, tax can be classified based on its direct or indirectness, its base, specific and *ad valorem* taxes and the its rate structure (James & Nobes, 1996/97; Tahir & Mat Zain, 1990; Allan, 1971)<sup>5</sup>. The classification of taxes designed by James & Nobes is exhibited in **Diagram 2.3**.

### **2.5.1 Direct and Indirect Taxes**

A tax is considered as direct when the tax is actually assessed on and collected from the individuals who are intended to bear it. A classic example of this is the income tax. Since this kind of tax is directed specifically to individuals, and generally it cannot be evaded, it is therefore a direct tax. In other words, the direct specification

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<sup>5</sup> Brudur, A.A. & Bower, F. (1957) classified taxes into 3 different classifications: taxes on income, taxes on transactions and taxes on capital.

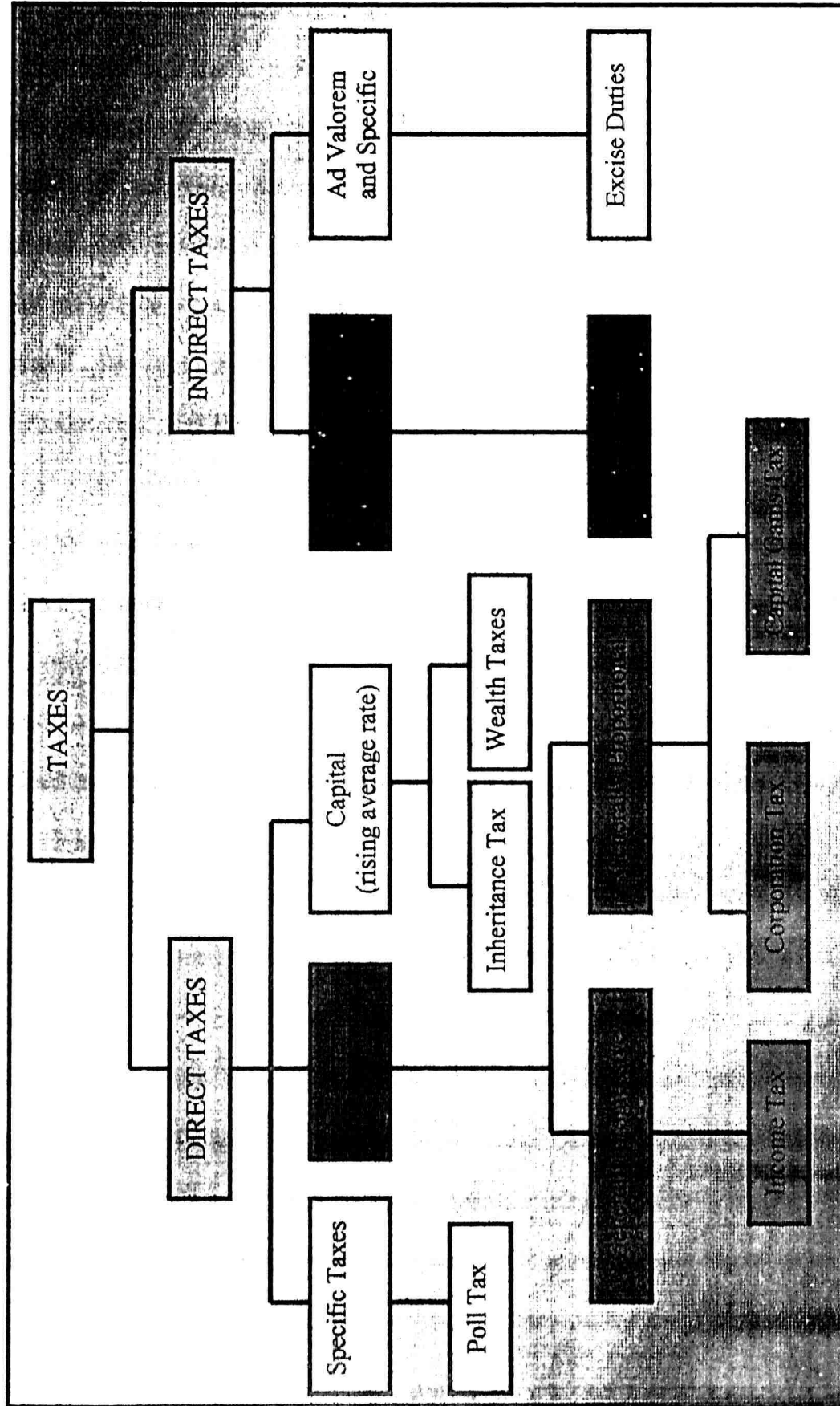
**Table 2.1:  
The OECD Classification**

|      |  |
|------|--|
| 1000 | Taxes on goods and services  |
| 1100 | Taxes on the production, sale, transfer, leasing and delivery of goods and services    |
| 1110 | General taxes  |
| 1120 | Taxes on specific goods and services   |
| 1121 | Excises  |
| 1122 | Fiscal monopolies  |
| 1123 | Custom and import duties   |
| 1124 | Taxes on exports   |
| 1125 | Taxes on specific services   |
| 1126 | Other taxes  |
| 1200 | Taxes in respect of ownership and use of, or permission to use, goods or to perform    |
| 1210 | Recurrent Taxes  |
| 1211 | Paid by households in respect of motor vehicles  |
| 1212 | Paid by others in respect of motor vehicles  |
| 1213 | Paid in respect of other goods   |
| 1214 | Other taxes  |
| 2000 | Taxes on income, profits and capital gains   |
| 2100 | Paid by households and institutions  |
| 2110 | On income and profits  |
| 2120 | On capital gains   |
| 2200 | Paid by corporate enterprises  |
| 2210 | On income and profits  |
| 2220 | On capital gains   |
| 3000 | Social security contributions  |
| 3100 | Paid by employees  |
| 3200 | Paid by employers  |
| 3300 | Paid by self-employed or non-employed persons  |
| 4000 | Taxes on employers based on payroll or manpower  |
| 5000 | Taxes on net wealth and immovable property   |
| 5100 | Recurrent taxes on net wealth  |
| 5110 | Paid by households   |
| 5120 | Paid by corporate enterprises  |
| 5200 | Recurrent taxes on immovable property  |
| 5210 | Paid by households   |
| 5220 | Paid by corporate enterprise   |
| 5230 | Paid by institutions, etc.   |
| 5300 | Non-recurrent taxes on net wealth and immovable property                               |
| 5310 | On net wealth  |
| 5320 | On immovable property  |
| 6000 | Taxes and stamp duties on gifts, inheritance and on capital and financial transactions |
| 6100 | On gifts and inheritance   |
| 6110 | Gifts  |
| 6120 | Inheritances   |
| 7000 | Other taxes  |
| 7100 | Paid solely by enterprise  |
| 7200 | Other  |

**Source:** OECD, 1976



Diagram 4.3.  
Classification of Taxes



Source: James & Nobes (1992)

plus the level of evasion – the latter is to a certain extent – determine tax directivities. Another example of direct tax is corporation income tax, which is tax on firms.

On the other hand, tax on sales for example, is passed onto goods in the market. This raises the price of the particular goods and when an individual purchases the commodity, the tax is passed on to this individual. The ‘indirect’ route through which tax follows makes this type of tax as indirect. Moreover, this tax can be easily evaded by simply not buying the taxed commodity and the level of evasion would be expected to be higher if the tax commodity is not a necessity good.

Besides the direct specification and level of evasion, the other way of looking at direct and indirect taxes is in accordance with the ‘administrative arrangements’ for collection (Allan, 1971). That is, a tax is direct if it is paid direct by the tax payer to the authorities, whilst it is indirect if taxes are paid by consumers of goods and services but reach the government indirectly through the retailers who act as a collecting agency.

### **2.5.2 Tax Base**

Tax may also be classified by tax base. Taxes may be based on stock of something (capital taxes), or on a flow of something (current taxes) (James and Nobes, 1992). Income tax and corporation tax are current taxes on income. Capital gains tax is also a form of tax on current income. The tax base on capital gains tax is the increase in value, which accrues to an investment overtime. This income is not

taxed until it is realized, at the time of the sale of the investment. Thus, it might be called a postponed current tax.

Value added tax and excise duties are current taxes on expenditure. Inheritance tax is a tax on capital because the tax is only borne when the capital moves. Wealth taxes are purer examples of capital taxes.

There can be different ways in which taxes can be based. Tahir & Mat Zin (1990) for example, divided tax primarily into three bases and these are income base, expenditure base and wealth or property or capital base. The first two tax bases apply to a 'flow', which is similar to current taxes. The third tax base applies to a stock of sources.

### 2.5.3 Specific and *ad valorem* taxes

Taxes may be divided up on the basis of the relationship of the amount of tax to the size of the tax base. A tax whose size bore no relationship to any tax base would be a poll tax, for example BND \$100 per head throughout the population. Taxes which are based on the weight or size of the tax base are called 'specific' or 'unit' taxes: for example, an excise duty of BND \$1.00 per one small pack cigarette. On the other hand, taxes, which are based on values, are called *ad valorem* taxes. Value added tax and all direct taxes are examples of *ad valorem* taxes.

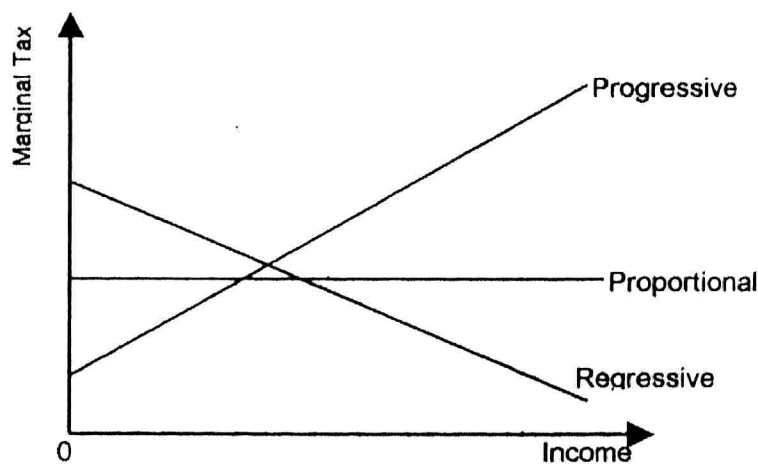
#### 2.5.4 Rate Structure

Taxes can be classified according to the way the rate varies with income. Taxes, which take an increasing proportion of an income as the income rises, are called progressive. Those taxes that continue to take the same proportion of an income are called proportional. And those, which take a decreasing proportion of income, are called regressive. This tax classification is presented in **Table 2.2** and **Diagram 2.4**.

**Table 2.2:**  
**Tax Liability**

| Income      | Regressive |      | Proportional |    | Progressive |    |
|-------------|------------|------|--------------|----|-------------|----|
| \$10,000    | \$100      | 1%   | \$100        | 1% | \$100       | 1% |
| \$100,000   | \$500      | 0.5% | \$1,000      | 1% | \$3,000     | 3% |
| \$1,000,000 | \$1000     | 0.1% | \$10,000     | 1% | \$50,000    | 5% |

**Diagram 2.4:**  
**Tax Liability Diagrammatically**



We can see that for the progressive tax rate, the proportion taken in tax (the average tax rate) is rising as income rises, shown by the upward sloping of the curve

in **Diagram 2.4**. For the proportional tax rate, the proportion taken in tax is always the same throughout different income levels, shown by the horizontal curve. For the regressive tax rate, the proportion taken in tax is falling as income rises, shown by downward sloping of the curve. To make reference easier, the definitions for individual taxes are presented in **Table 2.3**.

## **2.6 The Effects of Taxation**

Individuals may understand tax, primarily, as the way government generates revenue. In most descriptions of the aims of taxation, they start by saying that taxation is required to finance government spending (Allan, 1972). There are, fortunately, a number of other functions, and therefore purposes, performed by taxation besides as one sources of financing public goods and services. The effects of taxation make ways for some of the objectives of the government to be envisaged. The five most important effects, and therefore objectives of taxation, are explained and discussed by sections below.

### **2.6.1 Economic Efficiency and Excess Burden of Taxation**

Economic efficiency is one of the most important concepts in economics. But do taxes affect economic efficiency in negative ways? As James and Nobes (1992) commented,

**Table 2.3:  
General Definitions of Types of Taxes**

| <b>Types of Taxes</b> | <b>Definitions</b>   |
|-----------------------|--|
| Capital Gains Tax     | Tax on 'income' due to increases in the value of assets.   |
| Capital Transfer Tax  | A tax on the inter-personal movement of wealth.  |
| Corporation Tax       | Tax on corporation.  |
| Custom Duties         | Taxes levied on imports.   |
| Earmarked Taxes       | Taxes, which are used to pay for specific public expenditures.   |
| Estate Duty           | A tax on property left on death.   |
| Excise Duties         | Taxes levied on goods produced for home consumption.   |
| Export Tax            | Tax levied on Exports.   |
| Income Tax            | A tax on income on individuals.  |
| Independent Taxation  | An arrangement, whereby husbands and wives are taxed independently on their own incomes.   |
| Inflation Tax         | Inflation tax describes the fall in the value of government debt, including money, caused by inflation. In this way wealth is transferred from the holders of that debt to the government. |
| Inheritance Tax       | A tax on the passing of wealth on death.   |
| Stamp Duties          | The imposition of duties on capital market instruments, instruments of transfer of property, instruments creating interests in property and others.  |
| Payroll Tax           | A tax on the income from labor.  |
| Value Added Tax       | A tax levied on the value a business has added to its outputs. In other words, it is the value of the business's outputs less the value of its inputs.                                     |
| Withholding Tax       | Interest rate paid to non resident companies (foreign) is subject to withholding tax.  |
| Unitary Tax           | A tax based on the proportion of a business's worldwide income and not just the income arising where the business is being taxed.  |

**Source:** Taken from James & Nobes (1992)

“How might a particular proposal affect the efficiency of the economy? Would it create or increase distortions in the price mechanism, which would affect the behavior of consumers and producers? A tax imposed on some goods but not on others might push consumers towards the untaxed sector, which might or might not be desirable. Moreover, a tax may offset an existing distortion, and the traditional example of this is a tax designed to discourage pollution”.

To judge how tax might interfere with the efficient functioning of an economy, it is necessary to look have a clear idea of efficiency and how ‘an optimal allocation of resources’ may be defined. To examine the issue of resource allocation the concept of Pareto Efficiency is of particular importance. A particular allocation of resources is said to be Pareto-efficient if no arrangement of resources could make one person better off without making someone else worse off. Thus, if it is still possible to change the methods of production, or the type of goods produced, so one person can be made better off without others being made worse off, then the existing allocation of resources is sub-optimal and the efficiency of the economy can be increased by making the change<sup>6</sup>. Furthermore, the private sector may achieve a Pareto-optimal output through the market mechanism if two conditions prevail: the presence of perfect competition and the absence of economic effect external to the market (externalities).

It is already understood that taxes transfer spending power from the taxpayer to the government. In addition to this, taxes may distort consumers’ choice between goods, or producers’ choices between factors, and so impose an additional burden on

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<sup>6</sup> In practice, of course, because most economic changes make some people better off and some worse off, the concept of efficiency may be modified so that the requirement is that the gainers gain more than the losers lose. That is, efficiency would be enhanced if, as a result of a change, the gainers were able to compensate the losers by the amount of their loss, and still better off. This is called Pareto-improvement.

the taxpaying commodity (James & Nobes, 1992). This can be made clear by distinguishing them between the income effects of a tax and the substitution effects.

The income effects arise because, when a tax is imposed or increased, the taxpayer's spending power is reduced. Income effects do not themselves result in economic inefficiency. They simply represent the transfer of resources from the taxpayer to the government.

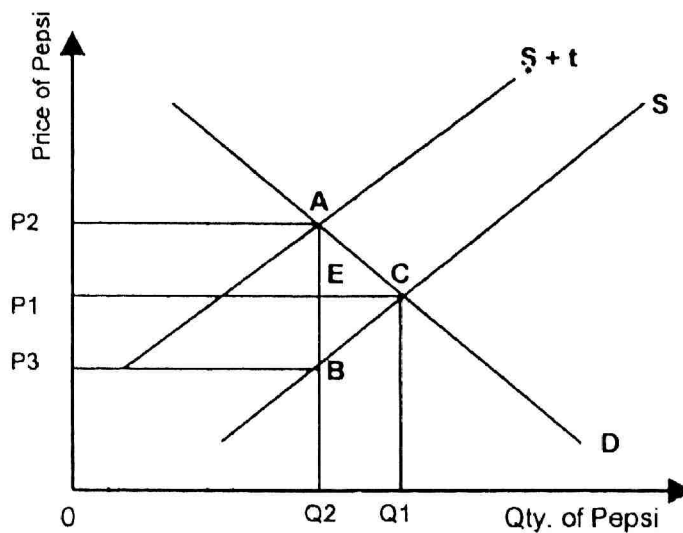
Substitution effects, on the other hand, arise when a tax affects relative prices and so leads individuals to substitute one form of consumption or activity for another. For example, suppose a tax were placed on Pepsi, but not on Coca Cola. Consumers might then substitute Coca Cola for Pepsi even when, in the absence of the tax, they would have preferred Pepsi. Thus, substitution effects of taxes can lead to economic inefficiency because they interfere with consumer choice. Interference with consumer choice first resulted in what economists called the excess burden of taxation<sup>7</sup>. To better understand this concept, let's suppose that the conditions of supply and demand for Pepsi are shown in **Diagram 2.5** below.

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<sup>7</sup> It is important to note here that the excess burden of taxation is different from tax burden.



**Diagram 2.5:  
Excess Burden of Taxation**



If there are no externalities and the market is working perfectly, the supply curve  $S$  will reflect the social cost of producing Pepsi. The  $D$  curve indicates the benefits received by individuals from consuming Pepsi. Thus, with our assumptions, output moves towards an equilibrium level of  $Q1$  at equilibrium price of  $P1$ . In other words, the ideal output level is at  $Q1$  and any other level of output must be inferior, that is, if more Pepsi were produced, the cost of the extra units would exceed the benefit; and if less were produced, the lost units would reduce consumer benefit by more than they reduced producer cost. These are the simple working of economic concepts of the consumers' and producers' surpluses.

Now suppose that a tax of value  $t$  is imposed on every unit of Pepsi produced. Assuming that in this case, it is the supplier rather than the consumer who is responsible for paying the tax to the authorities. The tax imposition increases cost of production of Pepsi by an amount of  $t$ , and so the supply curve shifts upwards to  $S + t$ , which raise the price from  $P1$  to  $P2$ . However, the supplier gets to keep only amount

$P_3$  per unit, which is the market price  $P_2$  minus the tax  $t$ . Following the rise in the market price of Pepsi from  $P_1$  to  $P_2$ , the equilibrium level output falls from  $Q_1$  to  $Q_2$ .

The amount of tax paid by the taxpayers and received by the government is  $t$  times the number of units sold, shown by the area  $P_3P_2AB$  in **Diagram 2.5**. As a result of the price rise the consumers are worse off by an amount  $P_1P_2AC$ . Yet the government received only  $P_1P_2AE$  of this, leaving a net loss of consumer surplus of  $AEC$ . Similarly there is a net loss of producer surplus of  $ECB$  or what is also called as the dead weight loss. Thus, the area  $ABC$  therefore shows the excess burden of taxation. Looking at it differently, this loss of economic welfare is to notice that the tax has resulted in a drop in production. This means that the tax has obstructed opportunities for profitable trade, and the area  $ABC$  again shows the loss. **Diagram 2.5** also shows the distribution of costs of tax between producers and consumers, where the former bear  $P_3P_1EB$  amount of  $t$  and the latter bear  $P_1P_2AE$  amount of  $t$ . This is what is termed as the incidence of taxation in economics. The level of distribution of costs depends on the elasticities of both the demand and the supply curve of the commodity, and in this case, Pepsi.

But the most important question here is, which taxes impose a lower excess burden of taxes, direct or indirect taxes? Hicks (1939) and Joseph (1939) held that income taxes impose a lower excess burden than taxes on specific goods, as income do not distort consumers' choices between goods. This consideration is very important for our policy recommendations in **Chapter 6**. However, because these involve rather long explanations, the detail explanations are furnished in **Appendix 2**.

In the end, we shall use the conventional models described in **Appendix 2** as the basis for the proposition that a specific indirect tax has a greater excess burden than the income tax.

## 2.6.2 Taxation and Economic Growth

It is typically understood that tax affects the economy ‘primarily’ via aggregate demand. It does this through an indirect route, influencing income (disposable income) and therefore consumption, and eventually implicates aggregate demand. This relationship is best understood by using the Keynesian model of aggregate demand. Based on the theory of Keynesian, aggregate demand is made up of four component parts,

$$AD = C + I + G + XM$$

Where,

|      |   |                         |
|------|---|-------------------------|
| $AD$ | = | Aggregate demand        |
| $C$  | = | Consumption expenditure |
| $I$  | = | Planned investment      |
| $G$  | = | Government spending     |
| $XM$ | = | Net exports             |

Earlier, we have looked at how government spending and taxation affect aggregate output, price and unemployment via the increase in the  $IS$  curve. Now we will look at how taxes are ‘connected’ and hence implicative to economic growth. Based on the standard model of consumption function, we have,

$$C = a + mpc \times Y_D$$

Where,

|       |   |                                    |
|-------|---|------------------------------------|
| $C$   | = | Consumption                        |
| $a$   | = | Autonomous consumption expenditure |
| $mpc$ | = | Marginal propensity to consume     |
| $Y_D$ | = | Disposable income                  |

By using tax, to certain extent, provide governments an alternative of achieving the nations objectives – which can be economic growth (measured primarily by GDP or GNP), stable price (i.e. reasonable inflation rate) and ‘reasonable’ unemployment rate – besides adopting the relatively more ‘technical’ monetary policy. Specifically, taxes lower the amount of income that consumers have available for spending and affect aggregate demand by influencing consumer expenditure; that is, when taxes are implemented to disposable income, disposable income  $Y_D$  does not equal aggregate output; it equals aggregate output  $Y$  minus taxes  $T$ :  $Y_D = Y - T$ . The consumption function  $C = a + mpc \times Y_D$  can therefore be written as:

$$C = a + [mpc \times (Y - T)] = a + (mpc \times Y) - (mpc \times T)$$

Using the new consumption function, and say  $mpc = 0.5$ , and tax increase to BND \$100, consumer expenditure will decline by BND \$50. This occurs because consumers view BND \$100 of taxes as equivalent to a BND \$100 reduction in income and reduce their expenditure by the marginal propensity to consume times this amount.

Government expenditure, which is the other instrument of fiscal policy, in contrast to taxation, its implication to aggregate income, and therefore aggregate price, is rather direct. Similar results could be expected by using either of these tools

of fiscal policy, though the degree of 'responsiveness' of aggregate demand against both instruments may differ slightly or significantly.

However, it is necessitate that one must exhibit cautions in dealing with fiscal policy because of the possibility of crowding out. As we have seen, crowding out (either complete or partial) may, to a certain degree, reduce the effectiveness of fiscal policy. The increase in tax rate on income, reduces the amount of money left for individuals to save and shrinks their consumption level. This 'spontaneous' response by the public and of course expected, shifts the *IS* curve downwards, reducing output and the rate of interest. However, when interest rates fall, the costs of borrowing will fall and this will encourage investment and exports, pulling the *IS* curve upwards, thereby increasing aggregate output. This can be looked at as a possible case of crowding out, which will be a good thing!<sup>8</sup>

A more interesting case – what we have been stressing all this time – is when taxes are raised for the purpose of government spending. An increase in tax collected, say by BND \$50 million (assuming other things being equal), will reduce the aggregate output through consumer expenditure by  $mpc \times T$  because there is now  $T$  less income available for spending, unlike government spending which injects the whole value of BND \$50 million into the aggregate demand. Assuming there is no crowding out takes place, this will be an ideal policy to be followed.

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<sup>8</sup> If the reason for the increase in tax rate were primarily to raise revenue, the 'first' round effect would be a fall in aggregate output, because of falling consumption. This would result in the rise in unemployment rate, though aggregate price would also be reduced. The 'second' round effect would be the fall in interest rates. This stimulates investment and exports and, as opposed to the first round effect, raising the aggregate output. It may be possible (in logical sense) that in the end, increase in tax may not change aggregate demand after all, despite the fact that more revenues are coming in! This must be a good thing.

Thus tax is seen as an important fiscal measure that enables the government to influence the current economic condition and 'theoretically', at least, will achieve its objectives of economic growth and therefore employment. In reality however, there are many factors influencing the credibility of taxes as an important mechanism through which important government objectives could be achieved. The social, political and of course, other undetermined economic factors may attribute to tax ineffectiveness.

One might think that it is direct taxes that are more appropriate of tax choices to transfer private resources to the government, but it is argued that indirect taxes that are directly related to consumption spending rather than to receipt of income. Thus, according to Bhaduri (1985), indirect taxes will reduce consumption more than direct taxes and is likely to encourage higher private sector savings than direct tax yielding the same value. An income tax reduces the return from saving, whereas an indirect tax affects the return when they are spent on consumption. This however, is out of the scope of the study and shall be left for others to argue.

### **2.6.3 Taxation and Income Redistribution**

In a country with large inequality gap, tax can be used as means to 'transfer' resources from the rich to the poor segment of the population. In a free market economy, most resources are owned by the wealthy and thus taking almost all 'possible' income with them and leaving the poor doomed to be poor. If the government does not intervene, poverty would prevail, if not worsened. From the

economic point of view, concentration of income and wealth for the smaller rich segment of the population is doubt to be beneficial because this can reduce the total demand on goods and services (Tahir & Mat Zin, 1990) This argument is based on the reason that, if most of the nation's wealth were concentrated in the smaller group, there would be lower spread of consumption. That is, as a result of fewer individuals capable of purchasing goods and services, the 'variability' of their spending pattern will be lost, reducing demand for goods and services, especially those that are not in demand by rich individuals. Taxation can therefore be used as a means to transfer some portions of the resources of the wealthy group and transfer them to the poor so as to achieve a more reasonable inequality gap and also increasing demand for goods and services.

#### **2.6.4 Taxation for Protection and Prevention**

There are a number of commodities that can be considered as 'bads'. Cigarette is the classic example of these 'bads'. If the policy of the government is to promote health for the population, the government might as well use taxes to discourage cigarette consumption. In addition to this, tax can act as a method to discourage production of goods that posed negative externalities to the society. If firms do not take into account these externalities, there would be producing these goods without considering the cost to the community, and this, in economic sense, is not socially optimal – especially nowadays, that economics are more connected to the environment, and one may call it green economics. One of the ways to discourage firms to produce that 'non-optimal' level of production is by using taxation. Since

taxation increases the cost of production, firms, theoretically, will reduce production by the amount they are taxed. In other words, tax imposition forces firms to produce goods at the socially optimal level, that is the level at which social costs of the production of goods are taken into account by firms.

Tax can also be used as a trading block for imported commodities, that is, tariff on trade. Developing countries typically need to have some sort of trading blocks to protect their domestic industries and giving these industries, especially the infant ones, a chance to grow and prosper. Besides strict rules and regulations and also long pain staking procedures to be followed by foreign exporters, which hampered trade flow, tax can also act as a very important method to blocking trade of certain targeted commodities. Theoretically, the costs of imports will increase and these discourage foreign exporters as well as domestic importers to make trade, and thus there will be fewer imports. Nowadays however, many countries believe that trading blocks hampered the movement of goods and also physical capital, and therefore trade. A clear example of this is the case of ASEAN Free Trade Area (AFTA). In the agreement, the AFTA member countries within the CEPT scheme will be subjected to tariff between 0 to 5 percent of all traded goods within its members by the year 2005 – with some minor adjustments. In this case, the government cannot really use taxes – as it has been using them all this time – to protect domestic infant industries. They have to use other means to achieve this.



## 2.7 Instruments to Measure Tax Performance.

There are a number of important instruments to measure "tax performance, namely; tax reliance ratio, tax effort ratio, direct-indirect tax ratio, tax burden, and the buoyancy and income elasticity of tax revenue. Their meanings and simple formulas to compute them are presented in Table 2.4.

**Table 2.4:  
Measuring Tax Performance**

| Instruments                        | Formula                           | Objectives   |
|------------------------------------|-----------------------------------|--|
| Tax Reliance Ratio                 | $TOT \times 100 / TT$             | To see how dependent are we to individual tax.   |
| Tax Effort Ratio                   | $TOT \times 100 / GDP$            | To measure our effort of taxation which is in relation to GDP.   |
| Direct-Indirect Tax Ratio          | $DRT \times 100 / TT$             | To look at the importance between direct and indirect taxes. This somewhat similar to tax reliance ratio.                    |
| Tax Burden                         | $TT \times 100 / GDP$             | To measure the burden of taxation. Again this is somewhat similar to tax effort ratio, but we are looking at it differently. |
| Buoyancy Elasticity Of Tax Revenue | $\% \Delta TOT / \% \Delta GDP^a$ | The measure the elasticity of tax revenue, with ignorance of the discretionary changes in tax rate or bases.                 |
| Income Elasticity Of Tax revenue   | $\% \Delta TOT / \% \Delta GDP^b$ | The measure the elasticity of tax revenue, with consideration of the discretionary changes in tax rate or bases.             |

**Notes:**

*TOT = Type of Taxes*

*TT = Total Taxes*

*GDP = Gross Domestic Product at Market Price*

*DRT = Direct Taxes*

*<sup>a</sup>GDP plus discretionary changes*

*<sup>b</sup>GDP minus discretionary changes*

Tax reliance ratio looks at how reliance is an economy to different types of taxes and is computed as a percentage of total tax revenue. In other words, it shows the degree of revenue importance of different types of taxes within the total tax

revenue. A large value of tax reliance ratio for one type of tax depicts heavy reliance on this type of tax and therefore, reflecting its importance as one of the sources of tax revenue (and the reverse holds true). Thus, this should give the policy makers – The Department of Economic Planning and Development (DEPD) under the Ministry of Finance in the case of NBD – to look at how reliance or how dependent, if you will, is a country to a particular type of tax. The knowledge of such reliance on particular type of taxes should assist policy makers to pin point the area of taxation where reliance ratios are low and may hint them to change the rates of these taxes to improve the ratios. However, such strategy must be in line with the objectives of the government, which – as we have seen earlier – can be many. It is, therefore, not wise to reform tax structure on the basis of tax reliance ratio alone because economics – as we have already understood – do have other tax performance measurements. Therefore, before such action is taken, policy makers must incorporate and take into consideration these important tax performance indicators. A comparison study with other countries' tax reliance ratio would also be interesting to look at, and then see how NBD's tax reliance ratio flared with other countries'.

Tax effort ratio measures an economy's effort on collecting revenue from particular tax and is computed as a percentage of GDP. A large value of tax effort ratio portrays a significant effort made by the economy on tax revenue and the reverse holds. How 'large' is the value is a matter of judgment. In a general case, when the tax effort ratio for one type of tax to the others is significantly larger, we can say that it has a relatively high tax effort ratio. A more interesting scenario, however, would be comparing these effort ratios against other countries' and see how the country's

effort flared with them. This means that this analysis can involve two comparison studies, and these can be, comparing tax effort ratios within the country's tax structure and comparing them with other countries. The benefit to have these ratios computed for a country lies on the ground that efforts being made on a particular type of tax are known. If a country is experiencing low efforts ratios on some of its taxes, it is understandable that the policy makers would be eager to increase efforts, through increasing rates or bases of these taxes. Again, as in tax reliance ratio, other performance measurements need to be considered before such action is taken. On the whole, the higher the tax effort ratio – one may say – the better the tax system/structure is.

Direct-indirect tax ratio – conceptually similar to tax reliance ratio – simply shows the relationship between direct and indirect taxes. The larger the direct indirect tax ratio means the greater 'reliance' on the direct taxes and the reverse holds. It is computed as direct and indirect taxes as percentages of total tax revenue. A comparison study against other countries' direct indirect tax ratios can provide us the knowledge of how important is direct tax relative to indirect tax compared to NBD. Such comparison shall be of important use in the course to achieve an 'ideal' ratio between direct and indirect taxes, or at least, to look for the general ratio prevailing in other countries. Thus, it is important for policy makers to have this ratio computed and then compared this ratio with other countries.

Tax burden can be viewed as an economy's burden of taxation. It is calculated as total tax revenue as a percentage of GDP. This is similar to tax effort ratio, but here

we are not looking at individual type of taxation. The value of tax burden, in this case, can be viewed as the burden of taxation to the population. The larger the value of the tax burden, we can expect 'larger' burden of taxation in the economy and therefore, the population and vice versa.

The buoyancy elasticity of tax revenue can be defined as the responsiveness of tax revenue to the change in GDP, disregarding the discretionary changes on tax rates and bases. The formula is shown in **Table 2.4** above. On the other hand, the income elasticity of tax revenue can be defined as the responsiveness of tax revenue to the change in GDP, taking into account the discretionary changes on tax rates and bases. According to Obben and Manan (1996),

A high degree of revenue productivity is a desirable characteristic of any tax system. This would be reflected in the magnitudes of either income elasticity or buoyancy, or both, being greater than 1.0. High income elasticity is preferable, since increases in national income will allow government to collect more revenue without having to change the tax rates. And though a decrease in national income would mean less tax revenue, other things being equal, the private sector would retain proportionately more of its income as disposable income because of the reduced marginal rate of taxation. However, if income elasticity is low, additional revenue may only be generated through discretionary changes if tax buoyancy is higher than tax elasticity. But if elasticity is higher than buoyancy, discretionary changes will have deleterious effect on the growth of aggregate tax revenue or reduce the revenue productivity of the tax system.

In a more complex scenario, Lye T.K. (1970) listed up to four reasons to why elasticity is important, and these are,

- i) A flexible tax system serves as an automatic stabilizer in the economy. If tax income elasticity exceeds unity, as the national income increases in boom years, the tax yield would increase and automatically lead to increase in budget surplus or a decrease in budget deficits. This process will restrain a rise in demand and check inflationary pressures. Conversely, when income and employment fall during a depression, the tax yield decreases. This will

automatically lead to a drop in budget surplus and a rise in budget deficit. Such an automatic decline in tax revenue acts to curve deflationary pressures. Therefore, variations in tax yield with a given year tax system will tend to act as a cushion to variations in disposal income after taxes and thereby lessen fluctuations in demand and income.

- ii) Taxes can contribute increasingly to mobilize public savings in developing countries. With an elastic tax system, as income rises, yield from taxes will expand more than proportionately and thus helps to plough back an increasing share of growing national income (i.e. GDP) into further development effort. On the other hand, an inelastic tax system reflects failure to tap adequately the more dynamic sector of the economy. Furthermore, the inelasticity of the revenue system also leads to other problems. In the quest for more and more revenue, government in developing countries have adopted ad hoc tax measures that have piled tax upon tax and made tax system exceedingly complex. Such ad hoc measures pay little attention to the consequent discouragement of production and investment. The growing complexity of the revenue system also adds to the patterns of administering them. Complex revenue systems are frequently beyond the capacity of existing staff to administer efficiently, so that wide tax evasion and an inequitable enforcement of the tax result.
- iii) If a nation possess an inelastic tax system, rising public expenditure would either be financed by continuous credit creation with all the attendant dangers of inflation and balance of payment arises, or by annual upward revisions of the existing tax rates. The latter will have very bad psychological effect on incentives to save, work and invest and will be administratively difficult and politically unpopular.
- iv) If elasticity could be measured with respect to different taxes, we could get an idea of the extent to which the yield of those taxes may be expected to change with given or expected changes in income. As such, the measures of elasticity would help in a consideration of tax potential in a country. In the fulfillment of which the public sector will play an increasingly important role. In order to facilitate this, a highly elastic income tax structure is a "sine que non".

One important thing to note here is that, buoyancy elasticity and income elasticity of tax revenue can be the equal. This is because, some types of taxes do not have any discretionary changes within the observed period. Therefore, there will be no differences between the value of the buoyancy elasticity and the income elasticity of tax revenue.

## **2.8 Concluding Remarks**

In this chapter, we have looked at a number of theories on tax and concepts as well as tax performance indicators, which of course, are very important for our purposes. With all these in hands, we shall be able to do our objectives of analyzing the tax structure and tax performance in NBD and in the end suggest the possible policy recommendations to improve the existing tax system and structure so as to get the best out of taxation.