❑ TAX RATIO AND BUOYANCY AND ELASTICITY OF TAXATION

Tax Ratio. The concept of tax ratio is very important as it gives an idea about the many aspects of economy. From the knowledge of tax ratio, one can quickly guess the economic strength of the country. The ratio of tax revenues to GNP is called the tax ratio. Thus, it is the percentage of GNP, which comes to public exchequer as tax revenue. Since the tax ratio is related to the economic conditions of society, it is high in the developed countries and low in poor countries. The main determinants of tax ratio are the per capita income, living standard of the people, industrial and agriculture development. Most of these factors are at low level in the developing countries, thus, their tax ratios are low. Therefore, it is important to note that economic development is both the cause and effect of high tax ratio.

Buoyancy and Elasticity of Taxation. Buoyancy of taxation is related to the expansion of tax-base. Tax-base refers to that legally defined object on which tax is imposed. Thus, for an imcome tax, income is the base of the tax, because the amount of tax payable is calculated with reference to the tax payer's income on which the rate of tax is applied. Similarly, the amount of gift, legally defined is the base of a gift tax and the amount of expenditure so defined is the base of expenditure tax.

The yield from a tax may grow in a number of ways. It may grow with an upward revision of the tax rate. If the increase in the tax yield results from growth of the tax base rather than from increase in the tax coverage or from the increase of tax rates, the particular tax is said to be buoyant. Thus, if the yield from excise duties, levied on production of a specific number of goods, increases over time when no new items are in the tax net and the rates of tax are not changed, then the excise duties are buoyant. Here buoyancy is the result of increase in production of excisable goods. Similarly, if the amount of yield from gift tax over a period of its bound to have stagnated even though tax rates have remained unchanged and the income has increased, it is not a buoyant because it is found almost in every country that the tax yield increases alongwith increase in the tax base. Thus, we can put a question whether Indian tax system is buoyant just in the way we can ask if our expenditure tax is buoyant.

Buoyancy of taxtion is given by the ratio

$$= \frac{\textbf{Relative increase in tax revenue}}{\textbf{Relative increase in tax base}}$$

If for instance, the yield from income tax increases from Rs. 50 crore to Rs. 100 crore during a particular year in which income increases from Rs. 200 crore to Rs. 220 crore, then the value of buoyancy of income tax will be

$$\left\{\frac{\text{Rs. 100 crore} - \text{Rs. 50 crore}}{\text{Rs. 50 crore}}\right\} \times 100 = 1.0$$

$$\left\{\frac{\text{Rs. 220 crore} - \text{Rs. 200 crore}}{\text{Rs. 220 crore}}\right\} \times 100 = 1.0$$

Thus, the income tax in this case is highly buoyant with buoyancy value at 1.0. It shows that the yield may increase when coverage of the tax is enlarged or when the rate of tax use raised. Therefore, elasticity of taxation is the ratio of percentage change in the yield to percentage change in the coverage or rates of taxation. Thus, if the coverage and rates of a particular tax during a

period are found to have increased doubly while the tax yield increased by 70 percent the co-efficient of tax elasticity in this case will be 0.70 percent. Symbolically, the co-efficient of income elasticity of taxation can be expressed as below :

$$ET = \frac{\frac{\Delta T}{T}}{\frac{\Delta Y}{Y}}$$

Where ET = elasticity of taxation, ΔT = change in tax, T = tax yield, ΔY = change in national income and X = national income.

Determination of Tax Ratio in Developing Countries

Several attampts have been made to explain the differences in tax ratios between different countries. These attempts try to discover if there exist any systematic relationship between measurable economic characteristics including the level of development and tax ratios.

One of the earlier systematical statistical study was made by *Williamson*. He considered only one variable, (per capita income,) as a determinant of tax ratio. He found that there was a significant positive relationship between the revenue (tax and non-tax) ratio and per capita income. Moreover, he took a sample of 33 developed and developing coutries. In another study, Plasschaert used per capita income and import/GNP ratio to explain the differences in revenue ratio of 20 developing countries. Import ratio turned out to be significant.

Harley H. Hinrichs has sketched a pattern of tax structure change from traditional to industrialised societies. Accordingly, non-tax sources and/or traditional direct taxes, namely, land revenue, provide most of the revenue in traditional societies. As the society begins to break away from old ways, taxes on international trade assume importance as the supplier of revenue, as this occurs, traditional direct taxes decline in importance. The growth of internal indirect taxes like excises and sales taxes is related to the development of demestic production, internal trade and monetization of the economy. Modern direct taxes like personal income tax and corporate profit tax are levied when the economy reaches maturity.

Hinrichs has also analysed the question of the flexibility of tax structure at a given stage in development. In other words, to what extent economies at the same level of development would have different tax structures. He found that tax structure flexibility is a luxury which only advanced countries can afford. Since a wealth of tax bases exists, they are in a position to select and adopt a tax structure according to their cultural and political styles. A less developed country is not so fortunate. Thus, the tax structure is determined primarily by the available tax bases.

R. Musgrave has also provided a theory of tax structure change. According to him, tax structure development is shaped by economic as well as social and political factors. Economic factors influence in two ways. In the first place, nature of tax base changes with changes in the structure of the economy which goes with development. Secondly, ecconomic objectives of tax policy vary with the stages of economic development.

The above cited studies mentioned a close interaction between changes in political setting and in tax structure. Furthermore, the social philosophy of the time sets standards of the equity which, in turn, bear on the choice of appropriate tax instruments. "The rise of egalitarian philosophy, in particular, has been the driving force behind the rise of progressive taxation."

Jorgen R. Lotz and Elliott R. Morss made another step to measure the tax ratio. In their own words,

"The question often arises whether there is a scope for an increase in the level of taxation in a country as part of a stabilization programme, for the mobilization of resources to finance development programme, or for other purposes. A relevant consideration in answering this question is how the tax effort of the country compares with that of other countries in similar circumstances."

The authors are of the opinion that tax effort can not be measured in terms of the ratio of tax revenue to national income alone since economic conditions, the character and level of government expenditure, administrative capacity, and a variety of other matters should also be taken into consideration. They have, however, considered only three measures of taxable capacity, namely, aggregate GNP, per capita GNP, and the size of the foreign trade sector. Other factors that are believed to affect taxable capacity but which could not be considered explicitly are the size distribution of income, the industrial origin of output, and the composition of government expenditures. The main results of their statistical calculations are discussed as under :

(1) Among high income countries, an insignificant relationship was indicated between per capita GNP and the tax ratio. No improvement in statistical results occurred by adding the index of openness. "The tax ratio of a high-income country is more an index of political. "The tax tatio of a high-income country is more an index of political preference for the appropriate size of the government role than an index of taxable capacity."

(2) "For low income countries, both per capita GNP and the degree of openness were found to be significantly related to the tax ratio, although these two factors did not account for a large part of the variance among ratios." Statistical results show that Brazil, for instance, collects more revenue then would be expected for a country with its per capita GNP and foreign trade ratio while Afghanistan's tax revenue is much lower than the amount that would be predicted on the basis of per capita income.

The **UNCTED** has attempted an extension of the Lotz-Morss analysis. It covered the 1950-66 period and time-series data were pooled for 36 developing countries. The share of agriculture in GNP and the rate of inflation were the two new explanatory variables that were considered. But it was felt that there was no a priori reason to include the inflation factor. So only the agricultural share and openness were considered and it was found that they explained 32 per cent of the variance. There an other studies which have taken into account the influences of intangible factors, such as, sociological factors, forms of government and geographic regions.

In its two studies, IMF found that tax performance of developing countries for the period 1953-55 to 1969-71. Lotz and Morss study considered per capita GNP and the degree of openness of the economy, but left out the composition of GNP. IMF studies under reference proceed on the hypothesis that all the three, that is, the average level of income, degree of openness of the economy and composition of GNP would each have a significant bearing on the taxable capacity of a country. These factors can be embodied in different measures in a regression equation. The 1971 study examined as many as five equations. The 1971 study indicated that the tax ratio may be said to be determined by four broad groups of factors. Two factors lying on the demand side government services are :

(1) the need for services arising out of "objective" conditions, and (2) the preference of the people and the leaders as between public and private services. On the supply side of raising of funds are : (*i*) the ability of the people to pay taxes ; and (*ii*) the ability of the government to collect taxes.

The study concluded under (*i*) the ability of the people to pay taxes depends on the types of services provided by the government, (*ii*) government's ability to collect taxes is influenced by objectives, structural factors, and (*iii*) also by volitional factors such as efficiency in administration and the nature of political leadership.