DISTRIBUTIONAL EFFECTS OF THE TAXES

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In this chapter, we examine the distributional effects of the various taxes on taxpayers. Depending on the rate structure of various taxes and the shifting mechanism, taxes affect the horizontal and vertical equities. Progressive income taxation is considered to be superior to other taxes as to its effect on income distribution, because indirect taxes are regressive in nature. But, the existence of preferential tax treatment of capital gains, tax preferences and incentives and many types of loopholes the effective tax rate of income tax becomes a regressive one, as the size of the income increases. In addition to that, consumption taxes are applied at proportionate rate, but it's effective rate is also regressive. The other taxes such as payroll or social security taxes, wealth and property taxes are regressive taxes. Thus, the overall effect of the tax system adversely affects the distributional goal of the society.

However, in order to correct the regressivity of the taxation system, some measures have been taken in Western countries. For this reason, in this chapter we both study the effects of various taxes on taxpayers and corrective measures that reduces the regressivity of the taxes. Therefore, individual income tax, corporate income tax, consumption taxes, social security taxes, wealth and property taxes are examined with respect to their distortive effects on income distribution. But, the effects of tax shifting will be studied in different chapter.

A. INDIVIDUAL INCOME TAXATION

Many tpyes of income tax provisions and tax preferences adversely affect the both vertical and horizontal equities. Tax preferences not only lead to erosion of the aggregate taxable income base, but also exert serious distributional inequities in relation with the ability to pay. Tax base erosion can be defined as the difference between the aggregate personal income and the aggregate taxable income. It is estimated that taxable income is about the % 60 of the aggregate personal income in the USA[(1)]. The untaxed (underground) economic activities generates a total of aggregate personal income which is two times higher than the aggregate taxable income in Turkey. Thus, the high level of tax erosion corresponds to a considerably less progressive tax rate structure than the statutory (legal) tax rate.

(1) Herber, Bernard: **The Modern Public Finance**, Irwin Inc., Illionis, 5th ed. 1986, p. 176.

Thus, the low level of effective tax rate causes serious vertical and horizontal inequity problems in the distribution of income tax liabilities in favor of or against to many taxpayers, in different income classes. For instance, about more than 70 percent of income tax is paid by the earned income (wage and salary incomes), even though the business income (profit, rent and dividend incomes) exceeds the former. Because, rent incomes are subject to 25 percent of tax rate regardless of the income level; dividents and income from governmental securities are tax exempted; and the base of profit income is reduced significantly by the tax preferences. For instance, for the incomes exceeding TL 512 million, if the income is earned one, then the tax rate is 50 percent; if it is unearned income such as rental income, then the tax rate is 25 percent; if it is income earned from the treasury bills or government bonds, then the rate is zero. On the other hand, many tax loopholes, tax expenditures, preferences, expense accounts and the tax payment system which postpones about one and half year from the time that the business income is earned favors for unearned income taxpayers. As the result of many tax favors, the average income tax revenue is only the 15 percent of the national income in 1980's.

The taxpayers in the higher income scales benefit mainly from the above mentioned tax favors; while the taxpayers in the lower income scales benefit from transfer payment, social security exclusions, special allowances, and exemptions for aged and disabled persons. On the other hand, the middle taxpayers receive the imputed rent or the deductability of mortgage interest and property tax payments. Thus, tax burden of the individual income tax is unevenly distributed among the taxpayers.

Efficiency in burden distribution : The new tax reform studies on the effect of tax preferences point out that, many tax favors and preference provisions not only distort the allocational efficiencies, but they also lead to serious distributional distortions and inequities. Therefore, many economists dealing with tax reforms suggest that, in order to attain a given level of tax revenues, all the loopholes, tax preferences, expense accounts and the progressive income tax rates should be reduced substantially. For instance, a tax plan proposed by Pechman and others indicates that, to attain a desired level of tax revenues, progressivity should be decreased from the range of 14 to 70 percent to some 7 to 35 percent and income from all sources should be taxed comprehensively(2). This suggestions highly affected the tax reforms movements in the 1980's.

(2) Frank Fernbach, Josehp Pechman, and Martin Gainsburg, "What is Wrong with our Tax System?, Challenge, July-August 1966, p. 17.

Flat rate movement : Others proposed a different tax reform program which calls for imposition of a single low proportional or flat tax rate, rather than a lower range progressive tax rate structure, on the broadened tax base basis.

The numerous special tax provisions due to tax expenditures or tax reliefs result in heavy loss in government revenues. The firms thus enjoying tax savings from tax expenditures also benefit from public expenditures. Therefore, **benefits from the public expenditures** and tax reliefs as the result of special tax provisions should be deducted from the tax liability, in order to calculate the net tax burden. For instance, some firms such as producing or selling automotive products benefit more from the governmental expenditures on highway construction. Because, highway construction expenditures highly increases the demand for automotive products. Therefore, special tax provisions and the benefits from the governmental expenditures may reduce the net tax burden of some firms to zero level.

Inflation tax : The high level of inflation adversely affects the vertical and horizontal equities when the personal exemptions, zero bracket amounts and the tax slice (bracket) limits are generaly stated in monetary terms. If the necessary adjustments to the increasing inflation rates are not made, many taxpayers are drawn to a higher income slice and paying taxes at increasing marginal tax rates. Thus, the real tax burden of the taxpayers increases as the inflation rate increases. The increase in the net burden due to this fiscal drag mechanism is referred to inflation tax. The burden of inflation tax is heavier in the low income scales compared to higher income scales. Because, the gap between the starting and ending point of income slices is so wide in the higher income slices. For this reason, taxpayer will not be drawn to an higher income slices and will not experience inflation tax. As far as special allowances are concerned, low income families experience high level of inflation tax. For instance, subistince level of income is set too low in Turkey. In addition to that, the annual special allowances that can be deducted from the taxable income is only TL 1.800.000. For this reason, the gap between the poverty line and special allowances increases too much, resulting in high level of inflation tax each year.

B. CORPORATE INCOME TAX

All the special tax provisions for busines income under the individual income taxation, also apply to corporation income tax, and thus contribute a lot to tax base erosion. Tax expenditures, tax preferences, accelerated cost recovery depreciations and other tax benefits cause serious distributional inequities in relation to vertical and horizontal equities. As the result of many special tax provisions in the form of tax incentives reduced the statuary (legal) tax rate from 50 percent to 15 percent effective corporate income tax rate in Turkey, in 1980's.

a) Tax Incentives

The followings are the main tax incentives applied to corporate income tax base during the 1980's in Turkey.

Investment Allowance : The corporations are allowed to deduct a certain percentage of their investment expenditures from the tax base, which is financed through corporate profits. The rate of the investment allowances varies according to the character of the investment and the areas in which investments are made. The rate structure of the investment allowances is as follows, for the qualified investments approved by the State Planning Organisation (SPO).

- The general rate is 30 percent of the qualified investments made in developed regions.

- 40 percent for the agricultural and general development investments.

- 60 percent for the qualified investments made in the second priority regions.

- 100 percent for the investments made for scientific an search and development; investments made in the first priority development regions such as construction and repair of the ships, tourism, education, health communication, electronics, energy sectors; and investments made to develop water resource products.

Export Exemption : Exports of those firms, exceeding $ 250.000 annually can benefit from 20 percent exemption from the corporate taxable income. Both exporters and the firms manufacturing exported goods are eligible for benefiting from this provision. However, exporters of the industrial products which is manufactured by other firms are allowed to deduct 16 percent of foreign earnings from the taxable income. In addition to that, exporters of the products, vegetables and fruits are also allowed to deduct 16 percentage of foreign earnings.

The 10 percent of countervailing tax is not applied to export exemption. In addition to that, if the manufacturer or the exporter company's net export profits are less than 20 percent of the export revenues, then the firm will not pay corporate income tax.

Tourism exemption : Those firms holding "Tourism Establishment Certificate" or "Travel Agency Licence" may deduct the 20 percent of the foreign currency earnings derived from tourism business from taxable income. In addition to that, the firms dealing with tourism business and earning a profit less than 20 percent of the revenues, obtained from such activities, will not be subject to corporation income tax.

Revaluation (financing) Fund : The diffeence between the new and the old values of depreciable assets is collected in revaluation fund to finance new investment. Revaluation fund is not taxed, as long as it is used as financial fund for the investment, Thus, it is added to share capital and the new shares may be distributed to shareholders accordingly. But if the revaluation fund is not added to share capital then it will be treated as accumulated depreciation allowances. When the revalued assets are sold, the revaluation fund will be treated as profit and will be taxed.

Revaluation fund is calculated on the basis of wholesale price indexes. In addition to indexation, 10 percent deduction is being made to adjust to the changes in the rate of inflation. In order to benefit from financing funds, the conditions are set as follws :

- Those quaiified investments benefiting fom investment allowances, may also benefit from the financial fund.

- Investment fund shouldn't exceed the 25 % of the taxable income base.

- Funds should be deposited on government bonds and can be drawn from an account opened at Central Bank.

- Drawings shouldn't exceed the investment amount made in the same year.

- The financing fund transferred from the previous year's net profit should be included to the net profit of the present accounting period. Thus, previous year's corporation income tax liability is postponed one year through establishing such a financial fund.

Freight exemption : Firms are encouraged to benefit from the freight exemption of 16 % of the revenues derived from transportation activities, between Turkey and the foreign countries. To be eligible for freight exemption, such revenues should be brought into Turkey in terms of foreign currency.

Tax postponement : Corporation income tax liability corresponding the research and development expenditures is postponed three years. Accordingly, 20 percent of corporation income tax liability that corresponds to research and development expenditures, may be paid in 9 installments within three years, following the assessment period.

Grants and Aids : Corporations may benefit from the grants and aids that they alloted to research and development activities. Accordingly, research and development expenditures may be deducted from the taxable income.

Capital Gains Exemption : The corporate income obtained from the sales of government bonds, Treasury bills and income share certificates before their maturity is excepted from corporation income tax. The same provision also applies to sales of other marketable securities issued by the Administration of Mean Housing Fund, before their maturity. But, the loss resulting from the sales of government bonds, Treasury bills and income share certificates is not allowed to be deducted from the corporate income. As a matter of fact that, it is not likely to make losses from the sale of above mentioned securities.

Non-taxation of income from exchange rate differences :

The income earned by foreign corporations and individuals from the alienation of shares and participations shares is not subject to corporation income tax. Thus, income derived from the foreign exchange rate differences between the import and export dates of the foreign capital is wholly excluded from the corporation income tax base, in order to encourage foreign capital investments.

Faster Cost Recovery Depreciation : Taxpayers may depreciate the assets (except the building and the land) at the rate of 25 percent a year. In addition to that, taxpayers are also allowed to write off 50 percent of the value of the capital assets in the first year. However, capital assets owned before 1983 and the immovable property are subject to traditional depreciation rules. Thus, taxpayers are enabled to deal with high level of inflation by using this faster cost recovery depreciation provisions. In addition to cost recovery system, the accelerated depreciation rules are also maintained.

Withholding : There are different withholding tax rates for various profits and income, set by the Council of Minister's Decrees. Different withholding rates are shown below :

O rates for :

- Interest of Treasury bills and government bonds,
- Business profits obtained from exhibitions and fairs
- Income from revenue sharing certificates
- All interest paid for all typess of credites and bonds
- Dividents of all kinds of shares and of mutual funds
- Profits from participation shares to joint ventures or limited companies
- Dividents paid to directors and board members
- Income from the sale of coupon of shares before their maturity
- Income in cash and in kinds received from the alienation of profit shares.

5 % for the icome from immovable property derived by nonresident corporations by virtue of the activities in the coverage of the financial leasing law.

10 percent for :

- Interest on deposit account in foreign currency
- Interest from deposit accounts on a name
- Interest from secret deposit accounts

- Interest from other deposit accounts

- Interest from other profit shares

- Profit shares of participation account in foreign currency paid by private financial institutions

- Bond interest on a name

- Bond interest on a bearer

- Other bonds interest

- All other income from movable properties

15 percent for income earned from independent personal economic activities.

25 percent for

- salaries and wages,

- income received from the transfer or alienation of patents, royalties, trade marks and others.

Special Funds :

There are three special funds which are calculated as a percentage of Corporation income tax. These are "Defense Industry Support Fund" of 5 percent of corporation income tax; "The Fund of the Encouragement of Social Charity and Solidarity" of 1 per cent of corporation income tax; and "The Fund of the Improvement and Enlargement of the Vocational and Technical Training" of 1 percent. However, Defense Industry Support Fund is also imposed on the amount of corporation tax, which is witheld at source, except wages and salaries and income from rental of residential properties.

b) Incidence of c.i.t.

The incidence of corporate income tax (cit) in the short and long run highly affects the state of income distribution and hence the vertical and horizontal equity. For instance, if the tax is unshifted and remains on the stockholders, the effect of the tax would be progressive. Because, the capital that bears the tax burden increases, as the income increases. On the other hand, if the tax is totally shifted to backward to labor and forward to consumers, then the distributional effect is regressive. Because, the both rations of labor income to individual income and the consumption amount to the individual income decreases as the income tax base increases.

Although economist agree on the incidence of corporate income tax in the long run, but there are many conflicting arguments on the incidence of corporate income tax in the short run.

Empirical Studies : There have been many empricial studies made on the incidence of corporate income tax so far, as they are summarized below.

The Lerner-Hendrikson study concludes from its evidence that, complete short run shifting of the corporate income tax didn't place during the period of 1927-1952(3).

The Adelman study focused on the factor shares, concluded that, substantial shifting of the corporate income tax had not occured. Because, the ratio of pretax profits to total income originating in the corporate sector remained constant for the periods 1922-1929 and 1945-1955(4).

According to many economists both studies failed to seperate the nontax variables from the corporate income tax as forces which determine corporation's profit making behavior.

Another study by **Harberger** concludes that, corporate income taxburden borned by capital in general, both corporate and incorporate, with no shifting backward and forward taking place(5). But, his conclusions have been rejected by the economist, because his study rests on the unrealistic assumption of perfect competition.

A comprehensive study has been done by Krzyzaniak and Musgrave and they considered the effect of corporate income tax on the rate of return, using multiple regression analysis and profit behavior model. They tested for the period of 1935-59 with the war and postwar period of 1943-47. Then, they con-

(3) E.M. Lerner and E.S. Hendrikson : "Federal Taxes on Corporate income and the Rate of Return on Investment in Manufacturing, 1927-1952", **National Tax Journal**, Sep. 1956, p. 193-202.
(4) M.A. Adelman; "The Corporate Income Tax in the Long Run", **Journal of Political Economy**, April 1957, p. 151-157.
(5) Arnold Harberger : "The incidence of the corporate income tax", **Journal of Political Economy**, June 1962, p. 215-40.

cluded that, corporate income tax is shifted by 134 % to forward in the short run. That is to say, for every $ 1 increment in corporate tax liability per unit of capital, pretax corporate profits would increase by 1.34 dollars. **The Krzyaniak-Musgrave (K-M) Model** also considers the effects of inflation and the government expenditures, thereby concludes that a high degree of short run shifting forward to consumers existed(6).

However, many economists have challenged the conclusions reached by KM model. They claimed that, KM model fails to reflect aggregate and cylical changes in the national economy during the above priods. Hence, they concluded that it may be the prosperity rather than successful tax shifting efforts, that causes higher corporate profits to occur when corporate income tax rates are high.

The Cragg-Harberger-Mieszkowski (CHM) study introduced some other variables, related to employment and war time economic activities in order to adjust for the inadequancies of the (KM) model. And, they concluded that, capital bears approximately 100 percent of the corporation income tax burden(7).

However, **Dusansky** by using rate of return approach and cyclical variables, estimated that corporate income tax is shifted forward at 100 percent in the short run(8).

Another study made by **Gordon,**(9) successfully integrates the rate of return and factor share approaches. Later, **Hall** related the changes in the productivity of capital to corporate rates of return(10). **Kilpatrick** also established a positive relationship between industry concentration and forward shifting(11).

Despite the absence of a definitive conclusion from the above mentioned studies, it is generally accepted that, the corporation income tax may be easily shifted forward to production factors and to consumers in the short run. Thus,

(6) M. Krzyzaniak and R.A. Musgrave: **The Shifting of the Corporate Income Tax**, Baltimore, Johns Hopkins Press, 1963.

(7) J.G. Cragg, A.C. Harberger, and P. Mieszkowski : "Empricial Evidence on the Incidence of the Corporation Income Tax", **Journal of Political Economy**, December, 1967, p. 811-21.

(8) R. Dusansky, "The Short Run Shifting of the Corporation income Tax in The USA", **Oxford Economic Papers**, Nov. 1972, p. 357-71.

(9) C.H. Hall : "Direct Shifting of the Corporate Income Tax in Manufacturing", **American Economic Review,** May 1964, p. 258-71.

(10) R.J. Gordon : "The Incidence of the Corporation Income Tax in US Manufacturing, 1955-62" **American Economic Review,** Sept. 1967, p. 731-58.

(11) R.W. Kilpatrick: "The Short Run Forward Shifting of the Corporate Income Tax", **Yale Economic Essays,** Fall 1963, p. 355-420.

the important part of the corporation tax burden is shifted to consumers in the form of higher selling prices. Of course, corporate income tax burden may easily be shifted to labor, when the workers are ununionized or weakly unionized.

C. CONSUMPTION TAXES

The rate structure of consumption taxes are generally proportionate in statutory terms, but they are regressive as to income levels of taxpayers. Because, consumption tends to be a declining proportion of increasing income. Therefore, high income taxpayers pay less taxes relatively to low income taxpayers, since the average propensity to consume declines as the income increases. Thus, with a broadbased consumption tax, the effective consumption tax burden of the low income taxpayer exceeds the tax burden of the high income taxpayer. For instance, suppose that income level of a low income taxpayer (L) is \$ 5.000 and the income level of high income taxpayer (H) is \$ 50.000 a year. Assume that, average propensity to consume is 90 % for L and 60 % for H. Under a 15 % value added tax rate, the effective tax rate is

$$\frac{5.000\ (90/100)\ .\ 15/100}{5.000} = 13.5\ \%\ \text{for L and}$$

$$\frac{5.000\ (60/100)\ .\ 15/100}{50.000} = 9\ \%\ \text{for H}$$

Thus, the regressive character of consumption taxes leads to serious distributional inequities as for as ability to pay principle is concerned. In order to correct the regressivity, some necessity goods such as expenditures on food, prescription medicine and educational services are exempted from consumption taxation, in many developed countries. For instance, value added tax is applied at zero rate these goods and services in England. On the other hand, to offset the regressivity of consumption taxes, a sales tax credit against income tax liability is being applied in the USA. If the tax credit exceeds the income tax liability of low income taxpayer, then the difference is refunded.

Tax Refund System in Turkey : In order to offset the regressivity of consumption taxes, a tax refund system is being implemented in Turkey. As a matter of fact that, the main purpose of the refund system is to operate a self inforcing mechanism to increase both income tax collections and tax revenues from the value added taxation. Accordingly, taxpayers are motivated with obtaining more invoices and receipts in order to be benefit more from the tax refund system. Thus, taxpayers are asked to enclose the original copies of the invoices and the receipts amounting to their monthly income, salary or wages. The total expenditures corresponding to monthly income is divided into expense brackets and the following tax refund rates are applied to each bracket, as of 1992.

- For the first TL 60.000 of expense bracket % 10
- For the second TL 60.000 of expense bracket % 20
- For the third TL 80.000 of expense bracket % 12
- For the expenses exceeding TL 280.000 Turkish liras % 5

For instance, a low income taxpayer with a wage of TL 2 millions receives a tax return of TL 117.600 while a high income taxpayer with the business income of 10 million Turkish liras a month receives 517.000 Turkish liras as a tax refund. Thus, the system doesn't serve for the correction of the regressivity of the consumption tax. Because, the average rate of tax return is 5.88 % for low income taxpayer, while it is 5.17 % for the high income taxpayer. Therefore, the tax refund system doesn't solve the regressivity problem of value added taxation. On the contrary, it increases the inequities between the taxpayers.

This system also doesn't serve for auto controlling devise for income and value added taxes. As a matter of fact that, many taxpayers are motivated to submit the invoices and receipts that doesn't represent their purchases. Thus, the systems reduces the morality of many taxpayers. On the other hand, governments tax revenues are reduces, at the expense of distortions in income distribution.

Some economist supported a revisionist viewpoint which substitutes **lifetime or permanent income** for annual present income, to offset the regressivity of the consumption taxes.

They argue that, a longrun income perspective will provide an average propensity to consume, which will be higher than the present one, and it will not diminish significantly. Because, some taxpayers who are temporarily at low income levels, after having been higher income levels, may not change their previous higher consumption behavior. On the other hand, as the taxpayers are getting older, they tend to use up all their income or the wealth during their later years.

Thus, **revisionists** propose a less consumption tax regressivity, since the average propensity to consume is higher on the basis of permenant income hypothesis. But, this proposal doesn't fit to ability to pay pirinciyl, since it disregards present income level. Besides that, when a taxpayers income rises above the subsistince level during his lifetime, the relative importance of necessity to luxury consumption is likely to decline. Therefore, the constant level of income is not likely to occur.

D. SOCIAL SECURITY TAXES

As a general rule, social security taxes are applied at proportionate rate on the income of employees. The existence of a taxable wage base ceiling result in regressive tax structure. Because, beyond the ceiling level of income, wage and salary incomes are taxed at zero rate. Therefore, the proportionate rate which is applied to ceiling, become a regressive rate if the total wage and salary income is considered. Although, regressive structure of social security taxes causes distributional distortions, but it is justified with respect to benefit principle of taxation. Because, social security services are efficiently financed through the benefit taxes. But, some social security benefits represents public goods characteristics, thus benefit principle partially applies to the financing of social security services. And, this is why the government involves in providing social security services.

Employers also contribute to the social security funds as the employees do. But, an important part of the social security contributions of employers areshifted backward to the wage and salary earners. Thus, this shifting mechanism increases the degree of the regressivity of the tax.

To offset the regressivity of the social security taxes, a low income exemption may be applied and wage base ceiling would be entirely removed. As we have explained above, the ceiling requirement is applied in order to render the benefit principle. Accordingly, social security taxes exempts a maximum level from the tax base, as opposing to the individial income tax, which exempts income below a certain level from the base of the tax. Therefore, the most efficient measure may involve financing of social security benefits through progressive income tax revenues. In this case, social security taxes are removed and the regressivity problem would be solved automatically.

In order to cope with the regressivity problem, a refundable earned income credit for low income taxpayers is being applied in the USA. Social security services are financed through consumption and direct tax revenues in Finland and Sweeden. Thus, wage and salary earners are not paying their shares in the social security financing, since social security benefits are considered merit goods in these countries.

The unemployment taxes or the unemployment insurance programs are not closely related to benefit and ability to pay principles. Because, the tax is only paid by employer, but not by the employees. But, unemployment taxes can be easily shifted backward to the employee in the form of reduced wage and salaries, and forward in the form of increased prices of the products. As the result of the shifting mechanism, unemployment taxes result in serious distributional inequities among the taxpayers. In addition to that, the shifted unemployment taxes will also increase the regressivity of the consumption taxes.

E. PROPERTY TAXES

The property tax is generally considered to be regressive, because it takes a higher proportion of income from lower income taxpayers than it does from higher income taxpayers. For this reason, the property taxes falls heavily on owner occupied and rental houses, owned by the lower and middle income taxpayers. On the other hand, the property taxes imposed on the improvements and the rental houses owned by the high income taxpayers, can be easily shifted forward in the forms of increased prices of the goods sold. The business property taxes on buildings are also shifted forward to consumers through higher product prices. Besides that, the ratio of housing consumption to income declines as the income increases. For these reasons, the regressivity of the property taxes heavily rests on the low income taxpayers.

In addition to that, ownership of wealth sometimes doesn't represent the ability to pay the tax. For instance, vacant lots or the land may not produce yield to the owner, when the tax is due. On the other hand, the retired and the elderly people may not able to pay the property taxes, which are assessed on the higher property values as a result of inflation. Furthermore, assessment techniques employed by the administrations result in deterioration of distributional equities. For instance, some administrations assess lower property values than the market value. And, tax officials often fail to adjust property values to the changing inflation rate. Thus, poverty gap is set to include the property tax that will be paid by the low income taxpayer.

To reduce the property tax regressivity, there are two measures taken such as homestead (owner occupied housing) exemption and the circuit breaker system in the USA. The former is related to the negative income taxation. Thus, poverty gap is set to include the property tax that will be paid by the low income taxpayer.

The second technique which is called **circuit breaker** property tax relief, generally cuts in when the property tax percentage of family income reaches a specified proportion, defined by the government as the point of overload. The retired people, and the taxpayers with fixed income may benefit from this relief in the USA. Accordingly, this system allows for a tax refund from the government to the homeowners, whose annual income is considered less than the property tax. Infact, the tax refund or the rebate amounts to a tax credit against to individual income tax liability.

To reduce the tax regressivity of the property taxation, retired people are paying the half the statutory tax rate. Thus, taxpayer's property tax burden is reduced by 50 percent, in order to improve the income distribution.

But, the effect of this tax relief is not so important, because the number of the retired people who own housė is very limited.

F. THE INCIDENCE OF TAX SYSTEM

When a government imposes taxes on individuals, it may **distort consumption patterns** or may interfere with consumer choices. Tax withdrawals from the private use leads to **efficiency loss in** the forms of changes in **savings and investment levels,** increase in the prices, decline in the earnings due to preference of leisure to work effort and other macroeconomic effects such as change in aggregate demand and unemployment levels. The loss of welfare as a result of tax withdrawals is called the **excess burden** of the tax. But, if the tax revenues are returned to the economy in the form of transfer expenditures, the opportunity cost of tax withdrawals will be zero or no excess burden will occur.

On the other hand, when the government finances public services through tax revenues, taxpayers receive benefits from consuming those goods. In analyzing the effects of taxation on the welfare levels of the taxpayers, the opportunity cost of tax withdrawals should be compared to the benefits received from the public expenditures. If the opportunity cost of taxes imposed on the economy exceeds the benefits of public expenditures, then gross burden of fiscal system or taxation exists. But, if the benefits of the public services exceed the opportunity cost of resource or tax withdrawals from the economy, then net burden of the fiscal system occur.

The purpose of this chapter is to study the burden distribution or the incidence of taxation and fiscal system to some certain extent in an economy.

a- Incidence of the taxes

Market adjustments to the tax impositions and increase in the tax rates leads to **transmission of tax burdens from their initial point of impact.** Thus, the taxpayer who first bears the legal obligation to pay the tax to the government can shift it to someone else. As the result of tax shifting and incidence process distribution of real income is influenced; the relative price of goods and products is changed; labor/capital ratios in productions functions and work-leisure choices are effected. Interregional and international tax incidence may lead to exporting tax burdens from the taxpayers of a country or a region to another country or a region. Macroeconomic aspects of economic growth is also affected by the dynamic tax incidence in a country.

The incidence that is the final point of tax burden always rests on consumers. The impact point of a tax is referred to Statutory incidence. While the economic incidence refers to as the point of final placement of a tax burden. Thus, a businessman who withholds tax from the income of his employees is not the one who bears the immediate impact. But the employee is the one who bears the impact of the tax.

b) Tax Shifting

When a tax imposed on individuals, they will try to avoid or pass the tax burden on to others. Thus, depending on the market structure entire burden of the tax is likely to be shifted to the individuals. For instance, value added tax is collected from the seller or the firms, but the tax burden is borned by the consumers. Because, prices include the taxes paid before. On the other hand, statutorv taxpayers may cut back the economic activity, if they are not able to shift their tax burden to the consumers.

The transmission of the tax burden from its impact point (the place of statutory incidence) to its final resting point (the place of economic incidence) is referred to as "shifting" process. Economic incidence indicates the point of final placement of the tax burden. Economic incidence leads to shifting mechanism in which tax burden ultimately rests on a different person. If the inital impact points (or statutory incidence) and the economic incidence points are the same, the tax burden rests on where it initally falls. In this case, of course tax shifting doesn't occur. On the other hand, if the initial impact point and the final resting point is different, then complete tax shifting occurs. But, tax shifting may be a partial one, if a part of the tax burden rests on the initial impact point and the other part rests on other people or the consumers. Under statutory tax incidence a businessman who withholds the tax from the wage or salary of his employee, is not the one who bears the immediate impact. But, the employee is the one who bears the impact of the tax, even though he didn't pay his tax liability to the government due to withholding.

c) Types of Economic Incidence

The economic analysis of incidence process may be viewed with reference to absolute, differential, budget incidences.

1. Absolute tax incidence : This incidence analysis examines the distributional effects of imposing a particular tax, while holding public expenditures constant. Increase in a tax revenue may lead to unemployment, and a decline in price level decrease depending on the state of economy.

2. Differential tax incidence : It examines the distributional changes as a result of substitution of one tax for another, while total tax revenues and the budget expenditures are held constant. Suppose, that, government increases the excise taxes levied on beer consumption, by replacing the income tax revenues with the same amount. This tax policy change will redistribute the income in favor of income taxpayers while increasing the tax burden of the consumers of the barley growers and the workers of beer factory will also be adversely affected. If the consumers of the beer tend to substitute wine, thereby owners of the beer factory will lose. Thus, the total change in the state of distribution is referred to as "differential incidence".

3. Budget incidence : Budget incidence of fiscal policy compares the combined effects of both tax and expenditure changes. Tax and expenditure changes in the fiscal policy effect the individuals and the consumers to a great extent. For instance, private incomes of the individuals are increased by transfer programs, but income levels are also decreased by tax increases. Provision of educational services is likely to increase the earning capacity of the low income families, more than that of the transfer programs. Preventive health care programs may increase the income levels of families as a result of decreasing expenditures on health services by the families.

d. Types of Tax Shifting

Tax shifting occurs through a change in the absolute prices of an economic goods or productive resource under partial equilibrium sence. Tax shifting may also occurs through a change in the relative prices of products and resources in the general equilibrium sense. There are four different types of tax shifting : forward shifting, backward shifting, tax capitalization and disguised tax shifting.

1. Forward shifting : If the absolute price of an economic good is increases, as the result of a new or higher tax, it is said that tax burden is shifted forward or to the consumers. The burden of corporation income tax and sales or consuption taxes can be easily shifted forward.

2. Backward shifting : If the absolute price of an economic good is decreases, as the result of a new or higher tax, it is said that the tax burden is shifted backward or to the owners of the products. For instance, if the tax on wine can't be shifted to consumers, it can be shifted to grape growers or to the workers at the wine factory.

3. Tax capitalization : Shifting takes place through a change in price of the capitalized value of the expected future earnings of the asset subject to tax.

Suppose that, annual net income of an flat is 10.000 and the rate of return is % 10. If 25 percent income tax is imposed on the earnings of the asset, then the value of the flat decreases from 100.000 to 75.000. This decrease of the asset value of the capital good has been the result of the shifting of the newly introduced income tax.

4. Disguised tax shifting : Tax shifting sometimes occurs in the form of reduced quality or size of an economic good. In this case price is not reduced as the result of tax but the quality of the goods and services are decreased.

G. MEASURING INCIDENCE OF THE TAXATION

Incidence analysis implies that, the entire tax burden is borne by individuals at the end of the shifting process. In order to study the effects of the incidence of a particular tax on the individuals, the households are grouped by categories or income classes. The incidence of taxes can be measured in terms of resulting changes in real income. Disposable income in real terms, which is after tax income divided by gross market price, should be compared with different income classes(12). Then the secondary effects which are the changes in earnings and the prices of the goods should be considered. At the end of the incidence analysis, effects of tax incidence on different income levels and on consumption patterns need to be taken into account.

The studies on incidence analysis reveals that, the distribution of the tax burden is progressive over the lower middle range of the income scale, but it is mostly proportional over the middle and the higher income scales. The distribution of transfers is highly pro-low income. The net pattern begins with a high positive rate at the lower part of income scale and turns negative before the mid-decile is reached(13). The total effect of tax structure thus depends on the progressivity of the tax and the state of distribution before the introduction of a tax system.

The tax incidence is generally measured by employing the Lorenz Curves. The horizontal axis plots the percentage of households starting from poorest to

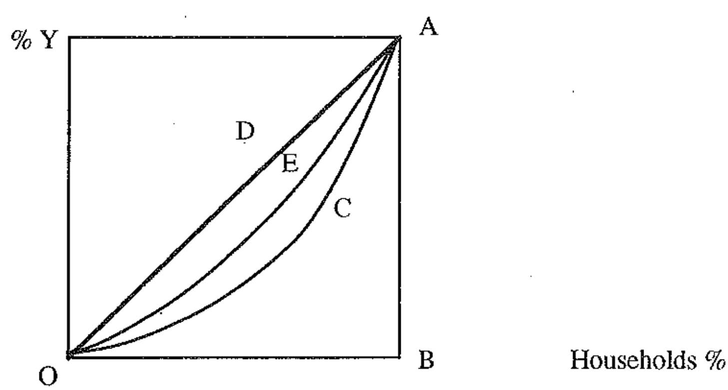

Figure 1 : Lorenz Curve

(12) Disposable real income is determined by earnings (E), income tax (T_i), prices of the goods bought (P) and the consumption tax (T_c). Thus, disposable real income (dri)= $(E-Y_i)/(P+T_c)$, shows the disposable real income of an household. (Musgrave-Musgrave, 240).

(13) Musgrave-Musgrave, 264.

richest; and the vertical axis represents the percentage of households income. A perfect equality of income distribution is shown by ODA or the 45 degree line. The percentage of families and the percentage of income is the same at any point on this line. The most extreme unequal distribution of income is shown by OBA with one man or a family controlling all national income.

A Lorenz curve such as OCA describes the state of unfair income distribution in a typical developing country. Whereas OEA curve represent the state of income distribution in a developed country. According to the Figure 1, there is a greater income inequality associated with OCA than OEA. Suppose that, the Lorenz curve OEA represents income distribution before a tax is imposed or tax rate is increased; OCA curve represents the state of income distribution after the tax incidence. The change in the state of income distribution can be measured by making use of Gini Coefficient.

Gini coefficient is the ratio of the area between the 45 degree line and the Lorenz curve; and the area to the right of 45 degree line. Thus, Gini coefficient for the Lorenz curve OCA is ODACO/ODABO and for Lorenz curve OEA is ODAEO/ODABO. According to Lorenz Curve analysis the incidence of tax is measured in terms of Gini coefficent is ODACO/ODABO. Tax incidence studies undertaken by Pechman and Okner indicates that, the before tax value of Gini coefficient was 0.4367, while the after tax value was 0.4158 in the USA tax structure(14). And they reached a general conclusion that the distribution of entire USA tax structure is proportional. But, another important study in the same subject concluded that, the tax structure is quite progressive.

Expenditure Incidence

Expenditure incidence is not studied as often as tax incidence. There are some public programs such as transfers, vouchers and food stamps whose benefits may not be difficult to allocate among individuals. But for most programs benefits can't be distributed among people easily. Studies conducted by Reynolds and Smolensky revealed that(15).

- The benefits of general public expenditures rest on both households and the income levels equally.

- The benefits of cash transfers accrue to the recipients of those transfers.

- The benefits of government debt goes to interest income.

- The benefit of agricultural expenditures rests on farm income or on farmers.

- The benefits of elementary and high school education accrue to the number of students under 18 in households groups.

- The benefits of highway services goes to owners of the automobiles.

- The benefits of public expenditures on human resource developments are received by wage and salary earners.

As a result of these assumptions one can conclude that, incidence of public expenditures represents a much higher proportion of income for the poor than for the rich. The three largest expenditure categories are general expenditures, education and cash transfers are mainly pro-poor.

(14) Aronson, Richard : **Public Finance**, Mc Graw Hill, New York, 1985, p. 515.
(15) J. Pechman and B. Okner : **Who bears the Tax Burden**, Brookings, Washington DC, 1974, p. 49.