9 National Income

Introduction

National Income is a basic concept of macro economics. In the concept of national income an attempt is made to measure economic activity of the whole economy. The national income of a country is a balancesheet of the performance of its economy. National Income familiarises us with the economic health of the Economy. If the national income of an economy increase it is generally a symbol of well being and if the national income of an economy is low and increases slowly it can be said that it is a symbol of unhealthiness of an economy. In short, national income is used as a criterion of the economical prosperity of a country. Generally, the market value of final products and services produced by using national wealth with capital and labour during a year in a country is called national income. There are important concepts like-GNP, NNP, GDP and NDP of national income. These are also used to compare two countries economy. However, what actually is the national income ? How is it created ? How can it be measured ? Which are various methods of its measurement ? Certain problems arise while measuring the national income. Whether the monetary income should be found out or the real income should be found out ? Let us familiar with all these concepts.

9.1 Meaning of National Income

9.1.1 General Meaning : The monetary value of the total production in agriculture, industries and service sector in a country during a year is the national income of that country. When we say that the national income of India is ₹ 128 lakh crores, it means that the goods and services of ₹ 128 lakh crores have been produced during one year in agriculture, industries and service sector.

9.1.2 Alfred Marshall (Production Based Definition) : The net production of physical (tangible) and non physical (service) things by using natural wealth (land) with capital and labour in a country during the year is the national income of the country. Prof. Marshall lays stress on net production of goods and servies in the definition and therefore this definition is production oriented.

9.1.3 Irving Fisher (Consumption Based Definition) : The proportion of direct consumption of goods and services by the people of a country during a year is called the national income. Fisher has laid stress on consumption of physical and non-physical goods and services in this definition, therefore definition is consumption oriented.

9.1.4 A.C. Pigou (Money Based Definition) : National income is a flow of those things (goods) and services whose payments have been done through money or which can be easily presented by money. In other words, the total income of society along with foreign income which can be easily measured with the help of money is the national income. In this definition, Pigou lays stress on money, therefore this definition is money oriented.

Inferences based on various definition :

(1) National income is a measurement of income obtained in a definite period of one year.

(2) In national income, the final products and services are considered.

(3) National income is a monetary value of final products and services.

(4) National income is calculated after deducting depreciation.

(5) Goods and services should be produced or consumed.

9.2 National Income and National Product

Generally national income and national product are considered one and similar. However, they actually are different.

9.2.1 National Income : The sum of total income obtained from the contribution of four factors of production in national production is the national income. National income = Rent + Wages + Interest + Profit.

9.2.2 National Product : The sum of total production value of final products and services obtained by various factors of production in various sector. (Agriculture, Industries, Services) in a year is the national product. National product is goods and services produced by various firm in a country during a year. In short, National Product = Total Production of Agriculture + Industries + Services sector.

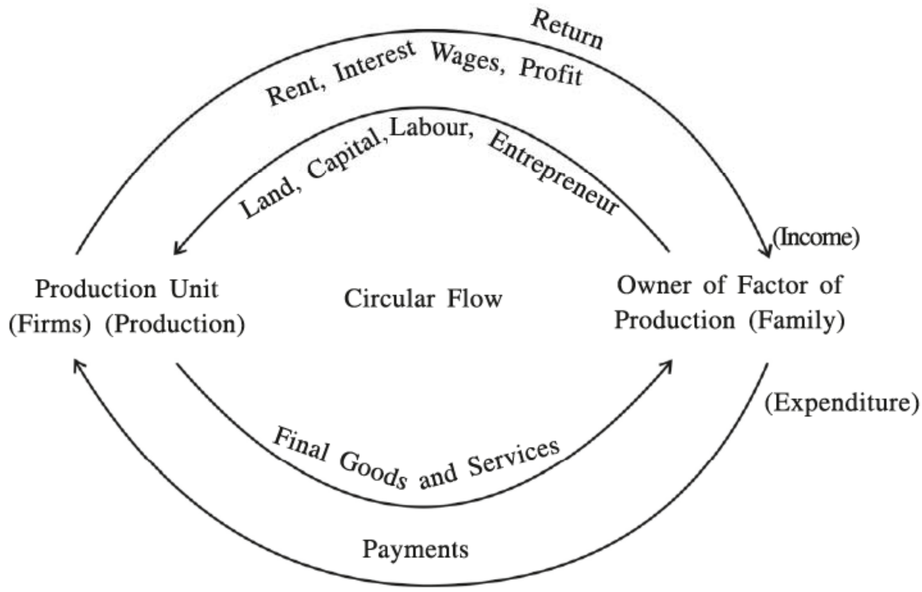
If a state does not have intervention (no taxes etc.) and no foreign trade (no import-export), the national income and national product remain similar. Due to taxes national product is higher than national income because price is higher than production expenditure due to taxes. Besides, due to subsidies given by the government, the national product is lower than national income.

9.3 Circular Flow of National Income

In terms of theoritical explanation, there are two types of economy : (1) Closed economy and (2) Open economy. The closed economy is the one in which there is no role of foreign trade. Such economy has no economic transactions with other countries. No goods, services and factors of production are exported and no goods, services and factor of production are imported in such country. Closed economy is self-dependent or self reliant whereas in the open economy the foreign trade play an important role. Some works are done by government and economy has import-export relations with other countries. Here, we will discuss circular flow of national income only in terms of closed economy.

To understand the circular flow of production-income-expenditure, we will divide economy into two major sectors (fields). The business firms and owner of factors of production, purchase necessary factors of production, capital and labour from families production process and uses them for production.

Thus, the factors of production reach to firms through families for using the factors firm pays rent, interest, wages and profit (Income) to the owner of factor of production or the families. Thus the flow of money firstly goes to families from the firms.



9.1 Circular Flow of National Income in a Closed Economy

A firm produces goods and services with the help of these factors and puts them in market for selling them. The families purchase goods and services from market. Thus the flow of goods and services comes to families from firms. Families pay money to firms for purchasing goods and services (Expenditure) and therefore the flow of money comes back to firms from families and a firm purchases factor with the help of this money and starts the production again and again pays to families and from families to firms is called circular flow of production-income-expenditure of the national income. This circular flow of national income keeps the economy constantly vibrant. National income can be measured by three ways : (1) Production (2) Income (3) Expenditure.

The flow from families to firm and from firms to families whereas the goods flow from firm to families and payment flow from families to firms. However it must be remembered that it is a closed economy.

In fact there is open economy in which the government has a role to play. Economy shows savings and it has the existence of import and export. The circular flow can be explained on the basis of market in such economy, too.

9.4 Important Concepts of National Income

9.4.1 Gross Domestic Product - GDP : There are many concepts of national income among which the concept of gross domestic product is an important concept. The market value of goods and services produced by citizens of a country and foreign citizen within a country's limit is called gross domestic product.

Important Facts :

(1) In gross domestic product, the final products or goods produced within the country's limit/ boundary by natives and foreign citizens or by nature (Crude Oil) are considered.

(2) The concept of gross domestic product is related to the boundary of a country in which the production by citizens of a country in a foreign country or the incomes generated by citizens of a country from foreign countries are not considered.

(3) For economical comparison of countries and to show the progress of an economy the diagrams of GDP are used in practise.

9.4.2 Net Domestic Product (NDP) : During the process of production, depriciation occurs due to use of capital and factor of production like machines, buildings, equipment etc. After sometimes, these factors of production become useless and they need to be replaced. Sometimes capital factors are changed with change in technology. Thus, during the process of production when the depreciation of factor is deducted from gross domestic product, we get net domestic product which is called NDP in short.

After deducting depreciation of factor of production from the domestic or foreign factor during a year is called net domestic product in short, GDP − Depreciation = NDP.

9.4.3 Gross National Product (GNP) : The production done by citizens of a country and foreign citizens within the boundaries of the country is the gross domestic product, while the sum of the value of the citizens of the country produce in a year is GNP. Whereas, the production done by citizens of a country within the country on in foreign country is not important here, but the production should be done by the citizen of our country. The monetary value of goods and services produced by citizens of the country in a year is called the Gross National Product (GNP) of the country.

Important Facts :

(1) In GNP, the value of production of current year is considered. The production value of previous year is not considered.

(2) In GDP, the income of citizens living in foreign countries is added and the income of foreign citizens living in the country is deducted.

GNP = GDP + Net income obtained from foreign countries. (total income from foreign countries − total payment to foreign countries).

(3) Mostly the diagrams of GNP are used in practice.

9.4.4 Net National Product (NNP) : During the process of production, the depreciation of factors of production, machines, building and equipment occur and their values decrease which is called capital depreciation. To find out the net national product the amount of depreciation is deducted from gross national product and the remaining is called the net national product.

After deduct depreciation from the monetary value of goods and services produced by citizens of country is called net national product.

Important Facts :

(1) The value of production of current year after deducting depreciation from the GNP is NNP.

(2) GNP − Depreciation = NNP

9.4.5 Per Capita Income : National Income is a criterion of economic growth, similarly the per capita income is a criterion of national development. Generally we get per capita income of a year by dividing the total national income of countary by the population of that countary. Per capita income is the average income per an individual. The per capita income can be presented by the following formula :

$$\text{Per capita Income} = \frac{\text{Gross National Income}}{\text{Total Population}}$$

Suppose the national Income of a country is ₹ 60,000 crores in a year and the population of that country in that year is 2 crores then the per capita income is,

$$\text{Per capita Income} = ₹\ \frac{60,000\ \text{crores}}{2\ \text{crores}}$$

$$= ₹\ 30,000$$

It means that the citizen of a country obtain the average income of ₹ 30,000 during a year. If the per capita income is calculated with the measurement of national income at the price of current year, it is called current price per capita income and if it is calculated by national income at the price of the base year (fixeed price) it is called Fixed Price Per capita Income. It can be said that the higher the per capita income, the higher is the proportion of goods and services obtained by citizens. In another words, standard of living of the citizens is higher.

Important Facts :

(1) Per capita income decreases if the growth rate of population is higher than the growth rate of national income

(2) The per capita income is an average measurement.

(3) Per capita income does not change with change in the distribution of national income.

(4) Per capita income is not a true criterion in the inequality of income in a country increases.

(5) The true criterion of country's progress is not the national income but the per capita income.

(6) UNO also uses diagrams of per capita income along with the diagrams of national income while comparing the progress of two countries.

(7) The comparison of two countries can be done by their per capita income.

(8) Per capita income enables the assumption of standard of living of country's citizens.

9.5 Measurement of National Income

The measurement of national income means calculation done on the basis of various concepts of national income. There are three concepts of national income and there are three methods to calculate national income on the basis of these three concepts.

(1) Production Method (2) Income Method (3) Expenditure Method.

9.5.1 Production Method : This method of calculating national income has been developed from the definition given by prof. Marshall. The sum of monetary value of finished goods or services produced in agriculture, industries and service sector. The sum of monetary value of goods and services is the national income. Find out production in agriculture, industry and service sector then it is multiplied by market value and find out money value. This money value is a national income.

Important Facts : National Income is calculated by keeping in mind the following things.

(1) Classification of Economy in Different Sectors : The economy is classified into various sector like agriculture, industries, services, mines, construction, manufacturing, trade-commerce, transportation, communication, banking, education etc.

(2) Selection of Goods or Services : Value of produced goods in various parts of economy. only finished goods, intermediate goods or services are not being calculated.

(3) Service of House-Wife : The service of the household work of a house wife is not sold in market and therefore its monetary value can not be measured. Thus it is not considered as national income.

(4) **Self-Consumption :** Goods produced for self-consumption are not sold in market so its monetary value can not be measured and therefore it is not considered as a national income. As an exception the food-grain for self-consumption of farmars in India is considered as national income.

(5) **Defence (Police) :** There are no markets of defence and police services. However, they are not considered in calculation of national income.

(6) **Imputed Rent :** When a house is given to some one on rent, the probable rent obtained is called imputed rent (here we assume if house given to some one on rent) and its value is considered in national income.

(7) **Double Counting :** Double counting should be removed from national income accounting. When the value of one commodity is calculated for more than one time in national income it brings up over valued the national income. While calculating national product in terms of production the double counting should be avoided For example, in national income, the monetary values of both iron and the machines made out of iron during a year are counted it is called double counting, because the value of iron is included in the value of machines. Thus if we calculate the value of iron and the machines then value of iron being calculated for two times. There is two remedies to avoid double counting.

(A) **To Count the Value of Finished Goods Only :** In this method, instead of counting the value of goods having half-made interim use, if the monetary value of the machine which is the finished goods and the value of iron involved in it is considered, the problem of double counting can be solved.

(B) **Value Added Method :** In production process, when a production of goods goes from one stage to another stage, its monetary value increases. If this increased value is drawn out and added in national product, the double counting does not occur. Let us see the following example.

Stages of Production	Sales Income (₹)	Factor Cost (₹)	Increasing Value (₹)
Cotton	100	00	100
Yarn	200	100	100
Cloth	280	200	80
Total	**580**	**300**	**280**

If in a factory, cotton of ₹ 100 is brought and yarn of ₹ 200 is made out of it and cloth of ₹ 280 is made out of the year, the monetary value of ₹ 100 + ₹ 200 + ₹ 280 = ₹ 580 is counted in national product which is considered as double counting. The cotton is included in both, yarn and cloth, and therefore the value of cotton is considered and counted for 3 times. This is double counting, but if the value of cotton of ₹ 100 + yarn of ₹ 100 + cloth of ₹ 80 is counted or value addition of = 280 is considered the double counting does not occur. The above stated example shows that factor cost is zero because here it is assumed that the production of cotton is of the previous year which has been considered in the national product of the previous year.

(8) **Indirect Tax and Subsidy :** Due to inclusion of Indirect taxes in the market value of goods, the indirect taxes are deducted to find out national product and the subsidy given by government is added.

(9) **Resale :** When a good was produced in the past its value was counted in the national product. When it is resold its value is not counted, but if it is counted, it will be the double counting. If a house purchased in year 2000 and it is resold today this resale is not considered in national products.

(10) **To Deduct Depreciation :** During the process of production the depreciation related to capital factor is deducted from the national product.

(11) Export value is added.

(12) The value of smuggled or illegal goods is not considered in calculation.

9.5.2 Income Method : This method of measuring national income has been developed from the definition given by prof. Pigou. When the income obtained by citizens of country and the state is added the national income can be found out in the method of income. For measuring national income, the rent, interest, wage and profitable income obtained from the four factors of production land, capital, labour, entreprenour are summed up in this addition, the income obtained from foreign countries is added and the payments done by way of rent interest wage, profit for foreign factor used in the country is deducted.

Important Factor : The following things are considered while counting national income in terms of income method.

(1) **To Count the Income of Factor :** The following are the types of income obtained by the factor of production.

(A) Income of Rent : The rent of land/building is considered as income. Those who live in their own house may get the income of rent which is called imputed rent. The income obtained by way of rights like the copy right of a book or patent is also considered as the income.

(B) Income of Interest : The interest obtained by people on their capital during a year is considered but the interest obtained from the government is not considered because a state generates income through taxes and pays it as interest, which means that the money is transfered only.

(C) Income of Wage : The wage or salary given to labourers for their work during a year is considered as an income.

(D) Income of Profit : The income obtained in the form of profit or divident by investor/share holders is also considered as an income. It includes reserved profit and taxes payed on it.

(2) **Income which are not Considered :** In the method of income for calculating national income. The income generated by way of gift, reward, prize, tip, theft, unemployment allowance, government assistance to elders, lottery, etc are not considered in the national income.

(3) The subsidy given by the government is deducted.

(4) Net Foreign Income is added (Export-Import).

(5) Income generated as commission or brokerage on sale of consummable goods.

(6) Those incomes which show flow of production of goods or servicies in economy which increase the monetary value of goods in economy are considered.

(7) The income of the second hand goods is not considered for e. g. the income obtained by selling old mobile phones is not considered.

9.5.3 Expenditure Method : This method has been developed from the definition given by Prof. Fisher. The national income is measured by summing up the total monetary expenditure incured on goods and services by individuals, families, firms and government during a year. This method shows the assumption of income = expenditure. In this mehtod of expenditure the expenditure incured in purchasing finished goods or services during a financial year is included. Total expenditure during a financial year is equal to the GDP.

Important Fact : The following things are considered while counting National Income in terms of Expenditure method.

(1) Four Factors of Monetary Expenditure :

(A) Consumption Expenditure : It is the expenditure incurred on consumable goods by citizens, families and firms. It includes expenditure on durable goods like TV, scooter car etc. Perishable goods like food grains, fruits, vegetables, services like education, medical treatment, transportation and communication.

(B) Investment Expenditure : It is the expenditure incurred on building of a factory, plant machinary and necessary goods equipments for the profession.

(C) Government Expenditure : It includes expenditure such as consumption expenditure, investment expenditure, administrative expenditure etc. by central government, state government and local bodies.

(D) Net Export Expenditure : The Expenditure on import of foreign goods by citizens of country is the expenditure of the country and our export is expenditure incurred on goods by foreign citizens. Therefore, the difference between these two is the net export which is included in the national income. In short. **Total National Income = Consumption Expenditure + Investment Expenditure + Government Expenditure + Net Export Expenditure.**

(2) Expenditure not Considered in National Income : In terms of expenditure certain expenditure are not considered in calculating the national income which include expenditure on the purchase of second-hand goods, transfer expenditure (Transfer payment), pension, unemployment allownces, financial assistance to widows etc. The expenditure on purchase of old shares, expenditure on use of goods of interim use are not considered in national income. Some expenditure are incurred without the production of goods services, which involves only the transfer of money expenditure, like subsidies are not considered in national income.

(3) Difficulty in Calculating National Income : The official data of people expenditure can not be obtained and therefore it becomes difficult to calculate national income by this method. For example, a business person named Arav gives ₹ 30,000 as salary to Milap, the accountant and considers ₹ 30,000 as the expenditure incurred. Now Milap gives ₹ 3000 to Khushbu who is his domestic helper. This becomes Milap's expenditure. Hence the question arises, 'what is the actual expenditure ?' ₹ 30,000 or ₹ 30,000 + ₹ 3000 = ₹ 33,000 ? Thus, the problem of double counting arises even in the expenditure method of calculating national income.

For calculating national income, a country can adopt any method from the above stated methods. If the obtained data are true what ever be the method of calculation of national income, the measurement of national income will be the same. However, every method has one or two other limitation and therefore it is said that these methods are mutually complemantary to each other. For example, national income is calculated in form of production its truthfulness can be tested in terms of expenditure for developing country like India the method of production is suitable where as for countries like America and Russia, the method of income and expenditure are suitable.

9.6 Problems in Measuring National Income

Since 1954, the Central Statistical Organization (CSO) calculates the national income. Currently, national income at constant price is calculated considering 1999-2000 as the base year. Certain problems arise while measuring national income which are as follows :

(1) Problems of Double Accounting

(2) Problems of Self-Consumption

(3) Problems of Depreciation

(4) Tax Avoidance and Tax Evasions.

(5) Illegal income

(6) Problems of Net Foreign Income

(7) Problems in Accounting : In measuring the national income the following problems arise in accounting of production, income, expenditure.

(A) Illiteracy

(B) Small scale production-sale

(C) Barter System

(D) People involved in more than one occupation

Inspite of the above stated problems the CSO tries to obtain true national income by counting the income carefully.

9.7 Monetary Income and Real Income

National Income is measured by the criterion of money but if the criterion of money is unstable or in other words, if there is fluctuation in price. (Price increase-decrease) the national income increases inspite of stable production and fluctuation in national income or fluctuation in production. Here the question arises that when national income increases with increase in production, the criterian can be considered true. To understand it, The monetary national income and Real national income must be understand.

9.7.1 Monetary National Income : If national income is measured at current price, it is called monetary national income. The national income obtained by multiplying the production of all goods with the market price of respective goods is called monetary national income. But this monetary national income is not real income. If production in current year is equal to the production in the previous year but the prices have doubled in the current year, the national income of current year will be double than that of the previous year (Production × Price) which does not show true sitation, because the production is the same as that in the previous year, only the prices have doubled. There has been no improvement in standard of living of people, so the true real national income is the only way to know true national income.

9.7.2 Real National Income : If national Income is measured at base-year price or fixed price it is called real national income. The national income obtained by multiplying the production of all goods with the fixed price of respective goods during the year is called the real national income. Real national income shows the true situation of a country. In fact, production and market price (current price) both increase and therefore some increase in national income occurs due to increase in production and some increase occures due to increase in price. But we are interested in the rise in national income, which occurs due to increase in production, because if national income increases due to increase in production the consumption and standard of living of people can be higher.

Exercise

1. Choose correct option for the following from the options provided :

(1) Who gave the definition of national income by production method ?

(A) Marshall (B) Fisher (C) Pigou (D) Samuelson

(2) Which among the following can be considerd in GNP ?

(A) Operation in hospital (B) Household work of housewife

(C) A teacher teaching his/her own child (C) Sing a song in the bathroom

(3) Which among the following is not included in closed economy ?

(A) Families (B) Firms (C) Industries (D) Foreign Trade

(4) Which expenditure of government are not considered in national income ?

(A) Production (B) Transfer Payment (C) Wages of laboureres (D) Defence expenditure

(5) How many factors constitute monetary expenditure ?

(A) 4 (B) 2 (C) 1 (D) 10

(6) Which one of the following is not a method to measure national income ?

(A) Production method (B) Income method (C) Sales method (D) Expenditure method

(7) What should be deducted from GDP to get NDP ?

(A) Depreciation (B) Net factor income from abroad

(C) Indirect tax (D) Subcidy

2. Answer the following questions in one sentence :

(1) What is national income ?

(2) What is called closed economy ?

(3) Give formula of Per Capita Income.

(4) Give the meaning of Net Domestic Product.

(5) What are transfer payments ?

(6) Whether the purchase of old building can be considered in national income or not ? Why ?

(7) Why the service of a house wife is not included in National Income ?

(8) What is imputed rent ?

(9) Name the institution which measures national income in India.

(10) At which price monetary national income is measured ?

(11) 'Per capita income is not the income of every citizen of the country.' How ?

3. Answer the following questions in short :

(1) Give definition of national income as given by Marshall or Fisher.

(2) According to Prof. Pigou, what is called national income ?

(3) Which expenditures are not included in the expenditure method of National Income ?

(4) Show the Difference between :

(a) GDP and NDP (b) GNP and NNP

(c) GDP and GNP (d) Closed economy and open economy

4. Answer the following questions in brief points :

(1) Explain in brief the problems arising in measuring National Income.

(2) Explain the concept of monetary income and real income.

(3) Give the meaning of Per Capita Income and show its importance.

(4) Write short notes on :

(a) Gross Domestic Product

(b) Net Domestic Product

(c) Gross National Product

(d) Net National Product

5. Answer the following questions in detail :

(1) Explain with diagram the circular flow of national income in a closed economy.

(2) Explain the output method for measuring national income.

(3) Define double counting and discuss remedies to remove double counting.

(4) Explain the income method for measuring national income.

(5) Describe the expenditure method for measuring national income.

Glossary

Production : The goods produced in a stipulated time with available factor is called Production.

National Income : The summation of total income (rent, wage, interest, profit) of four factors of production which they earn by production.

National Product : The summation of total production value of finished goods and services produced during a year is called National Product.

Closed Economy : It is an economy in which government and foreign trade have no role to play. Such economy has not economical transactions with other countries it is an economy without import-export.

Open Economy : It is an economy in which government and foreign trade have a role to play. Government performs many functions. The country conducts import and export all current economics are Open Economy.

Gross Domestic Product (GDP) : The market value of finished goods and services produced by citizens of a country or Foreign citizens within the boundry of the country during a year is called Gross Domestic Product.

Net Domestic Product (NDP)	:	The Monetary value obtained after deducting depreciation from the market value of final goods and services produced by citizen of a country or foreign citizens with in the boundary of the country during a year is called Net Domestic Product.
Gross National Product (GNP)	:	The Monetary value of goods and service produced by citizens of a country during a year is called Gross National Product.
Net National Product (NNP)	:	The remaining monetary value after deducting depericiation from the monetary value of goods and services produced by citizens of country is called Net National Product.
Per Capita Income	:	The average income per individual is the Percapita Income. The income obtained by dividing the total national income bye total population of a country is called Per Capita Income.
Double Counting	:	When value of goods and services is calculated for more than one time while measuring national income, it is called double counting.
Imputed Rent	:	The estimate of probable rent of a building (house) to be given to other is called imputed rent.
Monetary Income	:	The national income which is measured at market price is called monetary national income.
Real Income	:	The national income which is mearused at base-year or fixed price is called Real Income.
Depreciation	:	It is a gradual and permanent reduction in price of capital factor due to consumption. The depreciation occurs to machinary and capital factor during production process.
Tax Avoidance	:	When a tax payer uses loopholes of law, to avoid the paymets of tax it is called tax avoidance. Tax Avoidance is legal.
Tax Evasion	:	When a tax payer does not fulfil the responsibility of paying tax it is called tax evasion. Tax evasion is illegal.

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