CHAPTER

1

OUTPUT OF AN ECONOMY

1.1 CONCEPT OF OUTPUT

What would we understand if we were told that today the largest economy in the world is the US? Surely, we would wonder on what parameter—whether in terms of land area or population or output!

In every economy 'goods' are being produced, that is, raw materials are being converted into finished goods, agricultural crops, forestry, livestock, steel, cement, cars, cycles, bread etc. Similarly, 'services' are also being rendered like banking, insurance, shipping etc. All of these have a monetary value in the local currency like the USD in the US and the INR in India.

Thus, output per se implies aggregation of monetary value of all the goods and services produced in an economy in a given time period which may be a quarter (3 months), half-a-year (6 months) or a year (12 months).

In other words, 'output' includes all goods and services exchanged for money. For example, a fisherman catching fishes, may use some of it for self-consumption and the remaining may be used for selling in the market; thus, the monetary value of all the fishes would be considered under the concept of output.

It sounds simple so far, but delving a little deeper output may as well comprise of intermediate goods like steel and cement, which in turn are inputs for other goods referred to as 'final goods'. These final goods cannot be put to further use, except for use like cars, buildings etc.

If we were to include both the intermediate and final goods in our definition of output, then that would effectively mean counting the same thing twice and in the process inflate the output of an economy. For example, production of wheat and its milling as flour results in the making of bread; thus for output purposes, only the monetary value of bread would be considered and not that of wheat and flour. Therefore, we can conclusively derive that the output should have only final goods in order to avoid double counting.

But, what about a sale of second hand goods like say a second hand car? Should they be reflected in the output of an economy? The answer is no, as they have already been included once when manufactured and therefore does not amount to a fresh production. Thus, output of an economy is the monetary value of the final goods and services in a given time period.

The production of goods and rendering of services are referred to as economic activities; but who are the producers of goods and services in an economy? They could either be individuals, small and petty businesses, private companies like the Tatas, Birlas, Reliance Industries etc., or even government like the public sector companies ONGC, SAIL etc., or even foreign companies like Nokia, Sony, Samsung etc.

If we were to take the monetary value of all the final goods and services produced within the geographic boundary of a country, irrespective of who the producer of the goods and services are, then it is called 'domestic output' of the economy.

Thus, in the Indian context, domestic output consists of the monetary value of all final goods and services produced/rendered by individuals, private sector, public sector and foreign companies.

Having looked into who are the producers in an economy, let us look now at how the goods are produced. In order to produce goods, at first we need some place/infrastructure where the goods can be produced. Thus we would need to have a some land (or building); money as seed capital, in order to buy machines and raw material, invest in marketing, arrange for transportation etc.; labour for production and then a person whom we call the entrepreneur as the producer of goods. These are known as 'factors of production' in an economy.

Thus, in a 'production life cycle', each factor of production will have an associated cost—be it the seed capital for investment, rent for the place/infrastructure, or for that matter the labour wages and salaries; as an entrepreneur, the profit that an entrepreneur gains at the end of the day, is principally for the risk that he/she takes for production.

It is important to note that profit is a cost for any economic activity; but then what is cost is also income for factors of production. For example, rent is an income for land, interest is the income for capital, wages and salaries are the income for workers and supervisors and profit per se is the income for the risks taken by the entrepreneur. Let us illustrate this example further with numbers. Following are the details of a manufacturing company:

Land (rent)	:	₹10,000
Labour (Wages & Salaries)	:	₹1,000
Capital (Interest)	:	₹750
Entrepreneur (Profit)	:	₹500
Total	:	**₹12,250**

In this example, the total cost (all costs included) to an entrepreneur is ₹12,250; what is the output! It is the same amount as ₹12,250; and what is the income of all the factors of production! It is again the same as ₹12,250. This basically means that output/cost is income for factors of production. Thus, output and the income are two sides of the same coin. Whether we say output or income, it implies the same thing.

At times, output is also referred as the product of an economy, (quantity multiplied by factor cost) thus domestic product and domestic income of an economy are the same.

So far, we has discussed about the domestic output/product/income, but what about the income of Indians staying abroad? For a more comprehensive analysis of the output, it is necessary to look beyond the geographic boundaries that would include the income of all the Indian nationals irrespective of the country they currently reside.

But if we include the income of Indian nationals outside the country, it will also be logical to deduct the income of foreign nationals residing in our country. This is also referred to as Net Factor Income From Abroad (NFIAD). Thus,

Domestic Product + Income of Indians Abroad – Income of Foreigners in India = National Product

or

Domestic Product (+/–) NFIAD = National Product

Net factor income from abroad can be positive or negative depending up on which is more—income of Indian nationals abroad or income of foreign nationals in India, that is, national product is less than the domestic product, if the income of Indian nationals abroad is less than the income of foreigners in India and vice versa.

An increased foreign currency denominated debt of a country or selling domestic assets to foreign entities would tend to reduce the national product leaving domestic product unchanged.

1.2 CONCEPT OF DEPRECIATION

The output of an economy also consists of production of machines/machineries which are consumed every year, referred to as 'depreciation' and much of the output of such machines could be replacement in nature and not signifying additions to machine or capital stock in the economy.

Let us assume that cars are being produced in an economy and there is also depreciation of cars , that is, the cars would eventually have to be replaced after their shell-life. For example, a car is priced at ₹3,00,000 and has a life of, say 10 years. Then, depreciation (or consumption) of car is ₹30,000 a year. Thus, if the output of an economy ignores consumption (or depreciation) of its machine stocks, it is referred as a 'gross' concept and if it is accounted for it is known as 'net' concept.

Accordingly, there is Gross National Product (GNP) and Gross Domestic Product (GDP).

Hence,

GNP – Depreciation = Net National Product (NNP)

GDP – Depreciation = Net Domestic Product (NDP)

Thus, there are four concepts in the output of an economy—GNP, GDP, NNP and NDP. Let us now try to understand which method is technically the best measure of growth. Clearly, it is the NNP as it first covers all the nationals of a country and

is also a net increase after depreciation. It is also called as "National Income" of an economy.

But NNP/GNP are gradually losing significance since countries have high external debts that are serviced through internal resources which tends to increase outflows and reduce GNP of a country, leaving GDP unaffected. Similarly, the sale of assets to foreign entities will also have a similar impact. Further remittances have become significant in economies like India affecting GNP not seen as a correct way to judge output of an economy.

1.3 GDP—AS A MEASURE OF GROWTH

India, US and most other economies have switched over to GDP for measuring growth of their respective economies. Let us recall the concept of 'monetary value of goods and services' as output which has been discussed in the beginning of the chapter.

But this monetary value can be viewed from two perspectives— factor cost (It is also the income for the factors of production) and market price for example the price of a car as illustrated earlier. To further elucidate, the market price is the price paid for a goods or services in the market. Let us discuss the differences between the factor cost and market prices?

We all know that the government levies taxes (and also gives subsidies) on different goods and services before they reach the market. In India, excise duty is payable on manufacturing of goods and similarly, service tax is payable on services provided (we will discuss these later in the Chapter on government finances).

Now,

Factor Cost + Indirect Taxes – Subsidies = Market Price

or

Factor Cost + Net Taxes (as subsidies can never be equal or more than taxes in an economy) = Market Price.

Now the question, that in the monetary value whether factor cost or market price should be taken?

The output measured at market prices can be increased by increasing taxes in an economy. This does not necessarily imply that more goods and services have been produced in the economy. Output of an economy is worked out both at market prices as well as factor cost, but for growth purposes, output at factor cost is considered. This means that increased value in production of goods and services in an economy is captured at factor cost and not at market prices.

The difference between the output at market price and at factor cost is tax burden on an economy, which is useful for cross-country comparisons.

Can output at market price and factor cost be the same? The answer is yes, in cases of exceptional circumstances where the taxes are equal to subsidies or in utopian circumstances where taxes and subsidies both are zero. This concept is more of an academic relevance rather than of practical utility.

The moment we start talking about the monetary value either at market prices or factor cost, the concept of inflation becomes important. In simpler terms, inflation is increasing prices and during inflationary times it tends to inflate the value in nominal terms. Suppose inflation is at 10 per cent, it implies that the price is going up by 10 per cent, that is to say that the factor cost is also increasing, which would increase the output, even though there is no physical increase in the production of goods and services. It is because of this reason that the output measured at factor cost would have to be adjusted to actually reflect the increased production of goods and services in an economy. The adjustment is a statistical exercise which is done by using the GDP deflator that gives the output at factor cost in terms of 'constant prices'.

The output at constant prices refers to the output obtained after being adjusted for inflation. To further explain, suppose we do not adjust for inflation and the output growth for an year is 9 per cent so is inflation. It means that the output has not increased, but their prices have increased. Without adjusting for inflation, the increase in output has little or no significance and actually could be misleading.

This adjustment for inflation is also known as 'real' or otherwise it is 'nominal' and is generic in nature. Real growth is adjusted for inflation while nominal growth ignores adjustment for inflation. Growth by definition has to be 'real'.

Similarly, there is 'nominal' and 'real' interest rate, income, wages, but there is no concept of nominal and real growth as growth by definition has to be adjusted for inflation. This is implied in the meaning of the word growth itself.

The use of the word 'growth' in the Indian context implies increase in GDP at factor cost at constant prices.

In India, the entire computation is the responsibility of the Central Statistical Organisation (CSO), Government of India. The estimates of growth are provided by the organisation on quarterly basis at the end March, June, September and December every year and the annual growth estimates are provided during April–March, every year which is also referred to as the financial year (calendar year is January–December). All the government and corporate accounting in India is with reference to the financial year.

What we have covered so far is a simple exposure to 'National Income Aggregates', also referred as 'National Income Accounting' for students who do not have exposure to economics.

This is the output method of computation of National Income Accounting. There are other methods like the income and expenditure method relevant for the students who want to pursue a career in economics. For further study on these topics, reference can be made to NCERT text book of Class X and XII .