Economic Environment and Business Strategy
Prof. Sukumar Vellakkal
Department of Economic Sciences
Indian Institute of Technology Kanpur
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GDP Concepts

Hello everyone, welcome to this session on key national income concepts. Today, we'll start by understanding the difference between GDP and GNP, followed by a brief discussion on gross domestic product to see how income is calculated at the state level. Next, we'll explore the concepts of GDP at market price and GDP at factor cost and understand net GDP by examining how depreciation affects the value of output, using some practical examples. We will also explain how income reaches households through personal income and personal disposable income, culminating in per capita income, which represents the average income per person in a country. With examples and simple calculations throughout, this lecture aims to make these macroeconomic terms easy to understand. Let's begin by distinguishing between GDP and GNP.

We have already defined GDP. GDP refers to the market value of all goods and services produced within a country's borders during a specific period. GNP, or Gross National Product, is also referred to as Gross National Income. This concept is much broader than GDP.

For example, to start, India's GDP measures the production within India. However, India's gross national product, or GNP, measures the income earned by all Indian residents, including all Indian citizens. The difference is mainly due to net income from abroad. The key point is the net income from overseas. The main concept is what we do, since we already learned in the previous session that the total product equals total income, which equals total expenditure.

Therefore, gross national product can also be referred to as gross national income or gross national expenditure. Now, let's turn to measuring GNP. GNP is calculated by adding net income from abroad to GDP. Conversely, net income from abroad refers to the income earned by Indians abroad minus the income earned by foreigners in India. In our country, 'within our country' refers to India, which is how we define the net income from abroad.

Suppose India earns $100 billion abroad, and foreigners earn $90 billion here, so the net income from abroad is $10 billion. You can see that this $10 billion represents the net income from abroad. When calculating GNP, GDP is added to net income from abroad.

Using the expenditure method, how do we calculate GDP? By measuring it as C plus I plus G plus exports minus imports, plus net income from abroad. Therefore, using the expenditure method, we can calculate GDP and net income from abroad as follows: GDP plus net income from abroad.

However, GDP calculated using the expenditure method is already understood as C plus I plus G plus (exports minus imports). I'm presenting some data on India's GDP and GNP over a specific period, spanning from the 1950s to 2023. As shown, for most of this time, India's GNP is less than its GDP, except during certain periods. Specifically, during the 1970s and the early 1980s, India's GNP exceeded its GDP, indicating that at that time, India's net income from abroad was positive.

Now, let's move on to another concept you may have encountered a few times: GDP and SDP. GDP, which we have already defined, is the total monetary value of all final goods and services produced within a country during a specific period, usually a year. The scope of GDP is at the national level, and in the Indian case, it is published by the Ministry of Statistics and Program Implementation. The purpose is to indicate the overall economic performance of the entire Indian economy, measuring the rate of growth of the Indian economy. To achieve this, we use GDP.

And when it comes to SDP, which we refer to as gross state domestic product, we calculate it at the state level. This represents the total value of all goods and services produced within a specific state in India during a given period. The scope is at the sub-national level and is usually collected and published by the respective agencies at the state level, typically directed by the Ministry of Economics and Statistics of each state, and coordinated by MOSPI. The primary purpose is to measure the economic performance of individual states. Now, let's move on to another concept called GDP at market price and GDP at factor cost.

Let's start with the first one. What does GDP at market prices mean? Before that, let me explain that, generally, what we usually report is GDP at market prices. It represents the total value of all goods and services produced within a country over a specific period, measured at current market prices. It includes the effects of taxes on products, such as excise and sales taxes, and excludes subsidies. This is the GDP at market prices.

In simple terms, GDP at market price includes GDP at factor cost, which encompasses payments to all factors of production, including wages, rent, interest, and profit. It then adds indirect taxes, which are typically imposed at the production stage as excise duty and at the point of sale as sales tax. Additionally, this includes any product subsidies received by firms or individuals.

For production purposes, if they have received any subsidies that have been excluded from the GDP calculation, this means that GDP at market prices equals GDP at factor

cost. GDP at factor cost is the one I mentioned here, the first line, plus net indirect tax. It is essential to note that net indirect tax refers to the amount of indirect tax minus any subsidies. The next concept is GDP at factor cost, which means the total income earned by all factors of production.

It is derived by subtracting net indirect tax, which involves removing indirect tax from GDP at market prices. Typically, what we obtain is the GDP at market prices. To find the income received by the factors of production, we need to subtract the net indirect tax from the GDP at market price. Here, we have already defined GDP net indirect tax as the excess of duty, VAT, and GST over subsidies. To summarize, you can see that GDP at factor cost equals GDP at market price minus net indirect tax.

For instance, suppose the GDP at market price is 110 million. The indirect tax is 10 million, and subsidies are zero. To calculate GDP at factor cost, you subtract the net indirect tax from the GDP at market price: 110 million minus 10 million, which equals 100 million. Therefore, the GDP at factor cost is 100 million. Now, let's examine how national income is measured in India.

In India, the most common measure of national income is GDP at factor cost, mainly because it reflects the actual income received by the factors of production. If indirect taxes, such as sales taxes or other levies, are increased, the gross domestic product at market prices appears inflated. When using GDP at market prices as the primary indicator of economic growth, an increase in GDP may simply result from higher taxes rather than actual growth. To address this, we often use GDP at factor cost, which measures the reward for the income earned by all four factors of production. If you visit the Central Statistics Office website, you will see that it reports GDP figures both at factor cost and market prices.

In its 2015 revision, the CSO replaced the GDP at factor cost with the GVA at basic prices and the GDP at market prices, now referred to as GDP, which is the most highlighted measure. As I mentioned, this version is almost like GDP at factor costs. Let's examine the difference between GVA at basic prices and GVA at market prices. GVA at basic prices means GVA at factor cost plus net production taxes. And what is GVA at market price? It means GDP at market price, which is GVA at basic price plus net product taxes.

In this case, I have highlighted the difference between production taxes and product taxes. Production taxes are primarily related to the act of production rather than the quantity produced. Examples include land revenue and stamp duty. Product taxes are mainly based on a per-unit or per-product basis. The example is excise duty, which is a tax at the point of production, including GST, import duty, and export duty.

As I mentioned, the current practice is to report GDP at basic prices. To derive GDP at market price, we need to add net product taxes to GVA at basic price. As I have already stated, net product taxes are equal to product taxes minus subsidies, and they are also commonly referred to as net indirect taxes. Now, let's explore another related concept: net GDP equals GDP at factor cost minus depreciation. Depreciation refers to the wear and tear of fixed capital that must be accounted for when calculating GDP.

Net GDP (NDP) at factor cost: Let's consider an example. Suppose the GDP at factor cost is $100, and depreciation is $10. Then, the NDP is $90. Generally, when reviewing GDP figures in India, it is evident that roughly 10 percent is attributed to depreciation. So, on average, about 10 percent of the GDP at factor cost is depreciation, making the NDP usually around 90 percent of the total. Depreciation is also referred to as the consumption of fixed capital, representing the value of capital used up, including wear and tear, that affects output.

Examples include delivery trucks rusting, smartphones or computers becoming outdated, and old machines in factories requiring frequent repairs. The farming example, a 10-lakh tractor with a 10-year lifespan, depreciates 1 lakh each year, and its value decreases with use and age. That means you can see that the lifetime of a tractor is, for example, 10 lakh; then you can see that the depreciation every year is 1 lakh, so we need to account for that each year when a farmer is producing goods and services with the tractor he is using; every year, 1 lakh is a depreciation of this tractor that we need to deduct from the GDP at factor cost to get the NDP at factor cost. So, why does it matter? Why do we need to calculate net GDP? Because it reflects the actual productive capacity of an economy, accounting for the loss of capital assets and showing sustainable output, which helps in assessing long-term growth and investment needs. Building on the discussion of GDP, GNP, and NDP, let us now move to a slightly more detailed level by examining national income and personal disposable income.

One of the main concepts here is personal income. Personal income refers to the portion of national income received by households; it is the income that households and non-corporate businesses have left after paying all their obligations to the government. This is the amount available for individuals to spend or save, which is income minus taxes. Therefore, personal income equals national income minus undistributed profits. Here, national income refers not to GDP but to GNP. So, should it be GNP or GNI? Additionally, we need to account for depreciation.

This national income is the gross national product, also known as net GNP. That is the value we need to achieve in terms of national income, which we mean. So, that means the net GNI or net GNP minus undistributed profits, minus corporate tax, minus net interest paid by households, plus transfer payments to families. Undistributed profits refer to the portion of a firm's profit that is not distributed to households; this is referred to as

undistributed profits. Corporate tax refers to the tax paid by firms to the government, mostly on their profits.

We can also refer to it as a profit tax, which firms pay to the government, but households do not receive. Net interest paid by households refers to the interest they pay on loans minus the interest they earn from savings accounts and other deposits. The final element here is transfer payments. Transfer payments are typically unilateral payments from the government to households for no specific service or benefit. For example, receiving a pension is a unilateral payment.

Pensions, scholarships, and welfare benefits received by households without providing any service in return to the government are referred to as transfer payments. Therefore, we need to subtract all these items from the net national income to determine personal income. Moving to the final concept: personal disposable income. Personal disposable income refers to the income that a household controls and can use for consumption or saving. For example, if you earn $50,000 or $100,000 from your job or other sources, you must pay a portion of it in income tax to the government. After deducting income tax, the remaining amount is your personal disposable income.

What we hear mainly means that it is one element; personal disposable income refers to personal income minus personal taxes. Personal tax, primarily income tax, is referred to as a direct tax. Additionally, we also need to subtract non-tax payments to the government, such as fines or fees. So, you also need to subtract those. When you deduct these two components from personal income, what remains is personal disposable income, which is the amount households can spend.

That means either consume or save. Now, let's also explore another related concept: distinguishing between national disposable income and national private income. Regarding national disposable income, it is already defined as the maximum amount of goods and services available to the domestic economy for use, including current transfers from the rest of the world, such as gifts, aid, and remittances. This represents the total income available to the entire nation, whether for the public sector (government) or the private sector, for spending and saving. This refers to the national disposable income we previously defined. Conversely, private income specifically refers to the income that accrues to the private sector, primarily to households and private enterprises.

Private income here refers to factory income from net domestic product (NDP) accruing to the private sector, plus interest on the national debt, plus net income from abroad, and current transfers from the government, as well as other net transfers from the rest of the world. I have listed the main differences in a table, showing what it includes and excludes. You can see that national disposable income represents the entire economy and includes NNP plus all current transfers. It is mainly used to measure a nation's ability to

spend. Private income, earned only by the private sector, includes both earned and unearned income, which helps understand what households or the private sector are receiving.

In the previous slide, I used the term "national disposable income," but in the last slide, I mentioned "personal disposable income." This personal disposable income mainly pertains to the household sector and represents what is available for them to spend after paying direct taxes to the government. However, in the next slide, I am referring to "national disposable income," not personal disposable income. I wanted to clarify these two concepts. Let's begin with a quick exercise: calculating the gross national product at market prices and the gross national product at factor cost using the following indicators. In this table, I provided the NDP at factor cost along with depreciation.

This is the NDP at factor cost and depreciation. Net indirect taxes, you know, mean indirect taxes minus subsidies. And net income from abroad, which you also know, is what Indians earn from abroad minus what foreigners earn from our country, so that is the net income from abroad. All these four data points are provided to you from this. How is GNP calculated at market prices? So let us make the concept very clear: you need to systematically understand what each idea means. Then, based on this table, you need to identify which relevant information and data are necessary for your calculation.

From this calculation, to determine GNP at market prices, GNP at market prices equals GDP at market prices plus net income from abroad. You already know that GDP at market price is GDP at factor cost plus net indirect taxes. What is provided here is only NDP at factor cost. To find GDP at factor cost, you need to add depreciation to the net domestic product at factor cost. The figure you get after this is the GDP at factor cost.

Then, to calculate GNP at market price, remember this formula: add GDP at factor cost, net indirect taxes, and net income from abroad, and you'll get the value of one hundred eighty-four thousand five hundred ninety, which is the GNP at market price. Let's now move on to what GNP at factor cost means. GNP at factor cost refers to GNP at market price minus net indirect taxes. We already have the GNP at market price here, so it's already calculated. Therefore, subtract the net indirect taxes from it, and what you'll get is this value.

Finally, you will get it right. This value is accurate. We now have another related concept called per capita income. Per capita income is typically calculated by dividing the total income by the total population, allowing you to determine the per capita measure for all the variables we have computed. Per capita GDP refers to GDP divided by the population size; likewise, per capita GNP and per capita income at market prices are calculated. Per capita income at factor cost can also be calculated; for that, you need the numerator.

You need to apply the matching concept; for example, to calculate per capita income at market price, divide GNP at market price by the population size. In this lecture, we discussed various concepts related to the measurement of GDP. We started with the distinction between GDP and GNP, then covered gross domestic product, and then moved on to disposable income, including personal disposable income. Finally, we examined national disposable income and private income.

Additionally, we briefly discussed the per capita income. Thank you for watching this video. See you in the next session. Thank you.