Economic Environment and Business Strategy
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Comparing GDP Measures and Economic Welfare

Welcome back. In this session, we will continue our discussion of GDP and explore two important dimensions. First, we will examine GDP as a tool for measuring economic performance in more detail. While GDP is one of the most used indicators for assessing an economy is performance, it has its own limitations. It captures the market value of all goods and services produced in a country during a given period, but it overlooks several important aspects of human well-being, such as unpaid household work and environmental damage. For income inequality, even though changes in GDP can tell us something about economic growth, we need to ask what exactly it measures and what it leaves out.

In the second part of this session, we will look at how GDP and national income are measured in India. We will discuss the key government agencies involved, the primary methods used in national income accounting in India, and some practical challenges, such as estimating output from the informal sector and addressing data revisions. Understanding these details helps us interpret GDP numbers more accurately and apply them more effectively in policy discussions. Let's begin with what GDP includes and what it does not.

One of the key concepts used in the GDP definition is the classification of goods and services. When we see goods and services, GDP includes both tangible goods and intangible services. Tangible goods refer to items such as food, clothing, and cars, while intangible services encompass items like haircuts, doctor visits, and music concerts. The second component, GDP, refers to the market value of goods and services produced. This is the second element in the definition, which states that it produces the second element.

So, GDP only includes goods and services. Currently produced during the given period. It's a flow concept, meaning it measures production within a specified time frame, typically a year or a quarter. It doesn't include items produced in earlier years. GDP is not a stock concept; it is a flow concept, which means the total value of goods and services produced in each period.

If you are considering one quarter, then whatever goods and services are produced during that quarter are relevant. If you are considering a one-year period, then the goods

and services mentioned here are produced during that specific one-year period. Therefore, if something was produced in the previous year, that is not included in GDP. For example, Tata, the company, produces and sells a new car that is included in the GDP. But what about a person who sells a used car to another, which is not included in GDP, but the services related to the resale? For example, the dealer fees, transaction charges, and spare parts are part of the economic activity this year. So that part, the services related to this resale, are part of the GDP.

You can see that, for example, through the used car dealers like Maruti True Value, what is the original selling value when the company buys that car, and what is the car's value or purchase price; for example, it was bought, for instance, for one car for five lakhs, which is the purchasing price by this company. They bought this one, and when they sell it, for example, they sell it. Seven lakhs, then you can see that five lakhs is the price of the old car. The dealer obtained it from a seller who was selling this car for five lakhs. The company then added its profit, transaction charges, and spare parts, and is selling it for seven lakhs.

Out of this, what we need to add to the GDP is these two lakhs. Here, 2 lakhs are part of the GDP, but these 5 lakhs are not. Let us now move on to another aspect of interpreting national income and output. GDP is the market value of all final goods and services produced in a country. Then, the central part of the definition we have highlighted is that GDP represents the market value.

GDP combines all final goods and services into a single monetary value. This allows us to compare different types of output, such as food, education, or transportation, on a common scale. Could we please clarify what GDP includes and excludes here? GDP includes everything, even if it is not welfare-enhancing. For example, GDP includes all goods and services legally sold in markets; even items that do not improve human welfare are counted in the GDP measurement. For example, guns, tobacco, and alcohol do not contribute much to human welfare, but if you are producing more guns and more tobacco, we see that GDP is growing.

That means the factoring is growing, and expenditure is growing. However, we must remember that some components of GDP may not contribute to, or may even directly detract from, human welfare and health. What GDP excludes are mainly goods and services that are not traded in markets, as we are calculating the market value of goods and services. Therefore, goods and services that are not traded in markets, such as those involved in underground or informal economic activities, are excluded. Similarly, the illegal production of goods and services is not part of GDP. Another essential component missing from the GDP calculation is unpaid household work.

For example, a maid's salary is included in GDP, but a housewife's work is not, so that means in your home, if you are employing a maid and the compensation paid to the maid is part of the GDP, but if you are not employing anyone, you are doing all this activity yourself; that is not part of GDP. Similarly, the salary paid to a security guard for your home is included in the GDP measurement, but if you are guarding your own house, that is not included. This clearly means that unpaid household work is not included in GDP measurement. Another component, which is all, refers to GDP, which I have already mentioned, as the market value of all goods and services produced within a country in a given period. So, in all means, comprehensive coverage; GDP includes everything produced legally and sold in markets.

Cover goods and services across sectors, including agriculture, manufacturing, and services. All of these are included in the GDP measurement. So, what does GDP exclude? I have already given a hint in the previous slide: goods and services produced and consumed at home, which do not enter the marketplace. Goods and services that do not enter the marketplace are not captured in GDP. For example, agricultural products that you obtain from a farm, farm products that you obtain from a farm, and vegetables that you get from a kitchen garden, if you are not selling them, are not part of the GDP.

And if you are producing agricultural products but not selling them at the market, they do not reach the marketplace and are hence excluded. To summarize this, let's provide some examples of what is included and what is excluded. Therefore, the items included are mainly accounted for in the GDP. For example, vegetables bought from a grocery store are included, but vegetables grown and consumed in your own garden are excluded. Therefore, lunch purchased at a restaurant is included in GDP.

But if you have a home-cooked lunch that is not part of GDP, the ingredients that you are using for your lunch, which are bought from the market, will become part of GDP. Similarly, paying for laundry service at a shop is part of GDP, but if you are ironing your own clothes at a hostel or at home, it is not. Then, that service is not part of GDP, but the consumption of electricity is. Your labour service, such as ironing your clothes at home in a hostel, is not part of GDP. So, why have we seen that there are many limitations of GDP? Because GDP includes many items, it also excludes many other components that are part of economic activity, even though they are not included in the GDP measurement.

GDP reflects total economic activity and is one of the most widely used indicators to measure the overall level of output in an economy. So, the natural question is, why is it valuable? Changes in GDP over time help us understand how the economy is growing or contracting. It captures the trends in national income and production levels. Then, how do we interpret it? When assessing whether the economy is doing well or poorly, we

naturally look at how much income people are earning and whether jobs or output are increasing. Okay, so then, finally, some more aspects are highlighted in this slide.

What does GDP ultimately tell us? GDP is a broad indicator of economic performance. It helps policymakers, businesses, and citizens track progress and compare it across time or countries. Let us examine this table, which helps us compare living standards across countries using multiple indicators. You can see those high-income countries, such as the USA, Canada, the UK, and Germany, not only have a high per capita income but also better health outcomes, greater access to services, and more extensive infrastructure. When examining India and other developing countries, it becomes apparent that they are lagging behind in most indicators, particularly in health and access to medical care.

You can see here mortality, and all, highlighting gaps in both income and social development. However, you can also see that mobile phone, like this one, are improving and showing signs of convergence these days. So, if you look at the GNI per capita here closely, what you can see is that high-income countries like the US. Canada, Germany, and Australia report GNI per capita above 40,000. In contrast, countries like India have 3,910, and China has 9,040.

It reflects significant income disparities between developed and developing countries, which is also evident in health outcomes, access to services, and access to technology. Then, another measure we saw in the previous session is that we can calculate the per capita income from GDP by dividing the GDP values by the population size. From there, we will determine the average income of a country. But then why is GDP per capita not enough? The reason is that GDP per capita is insufficient, mainly because it is often used to compare income levels across countries, but it doesn't reveal how income is distributed within a country. For example, two countries may have the same per capita income.

Perhaps consider an example of two countries with the same per capita income. But in one, most people may earn around the average income. However, in another country, a small elite may earn most of the income. So, what does it mean? It means there is income inequality. To capture this distributional aspect, we examine the inequality measures.

So, in this context, we use the Gini coefficient, which is one such measure. It indicates the degree of inequality in a society, with values closer to 1 indicating greater inequality. As you can see, the Gini coefficient ranges from 0 to 1. When the estimated Gini coefficient is 0, that means perfect equality—everyone's income is around the average—and 1 represents ideal inequality, which means the income is skewed chiefly among a few wealthy people. In contrast, most people's income is much, much lower than the average.

The higher the value, the more unequal the income distribution; however, GDP is often used to estimate economic growth rates. One of the most essential uses of GDP is to measure the rate of economic growth. The GDP growth rate indicates the pace at which total output changes from one period to the next. Therefore, a growing GDP typically indicates an increase in jobs, higher incomes, and improved living standards.

So, growth can take place. A higher GDP indicates that the economy is growing at a faster rate. The higher the economic growth rate, the faster GDP grows, so I have provided the formula for calculating the economic growth rate. Suppose you want to calculate the GDP growth for this year; then, you need to determine what last year's GDP was. And what is this year's GDP? Then, accordingly, we need to make a calculation. Suppose last year's GDP is this one, the t minus 1, and this year's GDP is this value.

Suppose we produced 100 last year and 110 this year. Then, you need to divide the current year's production by the previous year's production, which is 100. So, what you are getting is 10 percent. The GDP growth rate is 10 percent; this is what we commonly report when we say the economic growth rate is 10 percent. What we actually mean is that this economic growth rate is the GDP growth rate. Therefore, the GDP growth rate is synonymous with the economic growth rate, and this formula is typically expressed as a percentage.

In this example, the economic growth rate is 10 percent. A natural question that arises is, "What drives the growth rate of GDP over time?" A growing GDP typically means more jobs, higher incomes, and improved living standards. Growth can occur either because a country is utilizing more resources, such as a larger labor force and increased capital, or because it is using them more efficiently through technology and innovation. Two components drive the growth rate of GDP. One is the quantity of resources, which refers to the resources available to a country, including the labor force, capital, and other natural resources.

The second is the efficiency of production. If the country is technologically advanced, it can produce more GDP with fewer resources, a smaller labor force, and less capital. It can make more goods and services, and if it has better organizational skills, high productivity, and high-quality human capital, it will be more efficient. A highly skilled and educated labor force will improve the efficiency of production. Therefore, it doesn't mean that having more labor and capital will automatically enable us to produce more goods and services.

Those countries, even with a low labor force and limited capital availability, can increase their GDP if their production efficiency is high. Another distinction is between nominal GDP and real GDP. When discussing GDP growth rates, it's essential to distinguish

between nominal and real GDP. Nominal GDP measures both price and quantity changes. It tells us how much the economy is producing in terms of current market prices.

The definition I have given here measures the value of output at current market prices and reflects changes in both prices and quantities. Simply put, the definition is that nominal GDP measures the value of output in a given period using the prices prevailing in that period. The GDP is typically what we calculate every year, and it is generally at a nominal price. However, the concern here is that, compared to the previous year, this year has seen an increase in prices; consequently, the nominal GDP may rise even if output remains constant. However, in this case, we use the concept known as real GDP.

Real GDP removes the effects of inflation by keeping prices constant. It captures the actual growth in production. This distinction helps us understand whether the economy is growing because we are producing more or simply because prices have increased. So, real GDP measures output at constant prices, which means it has been adjusted for inflation, and real GDP reflects changes in the actual volume of production. Real GDP measures changes in physical output by valuing goods at prices from a base year.

It enables the comparison of economic performance over time without price distortion. The distinction matters because it helps differentiate between price level changes and real economic growth. Therefore, by comparing nominal GDP and real GDP, we can calculate the GDP deflator. We will use this variable for estimating inflation, specifically the GDP deflator.

I have calculated this accordingly. When nominal GDP is divided by real GDP, the result is multiplied by 100, yielding the GDP deflator. This is one measure of inflation. This table illustrates the distinction between nominal and real GDP at market prices. These are some reflections here.

I have some bullet points here. One is that nominal GDP rose sharply from 1900 to 2013 due to both output growth and inflation; that is, the money GDP, also known as nominal GDP. Real GDP also increased because it was calculated at the 1990 price level. It also increased, showing actual growth in production over time. This is the actual growth rate: the actual economic growth in this country. Another reflection is that the GDP deflator shows rising price levels.

When we divide nominal GDP by real GDP and then multiply by 100, we obtain the implicit GDP deflator. Assuming 1990 as 100, we can see that the price level has increased from 1.7 to 183.5 by 2013. The main takeaway here is that real GDP provides a clear picture of economic progress by adjusting for inflation.

Now, let's proceed to the final part of this session, which is national income accounting in India. Let me start with the official agencies. The Central Statistics Office mainly

operates under the MOSPI, which is responsible for compiling national income estimates. So data are published annually or even quarterly. Sector-wise quarterly GVA is also reported separately for agriculture, manufacturing, and the services sector.

Then, the base year for GDP calculation is the current base year for the GDP estimate, which is 2011-12. And do you know why we are using it? Because nominal GDP is affected by inflation, it is necessary to adjust for real GDP. To adjust for inflation, we calculate the real GDP for the base year, which represents the GDP for that specific year. The current base year is 2011-12. The base year is periodically revised to reflect changes in the economy's structure.

For estimating GDP, we use all three methods, including the production method. This method is primarily used in the agricultural sector, whereas the income method is mainly employed in the manufacturing and service sectors. The expenditure method is primarily used to calculate GDP in the construction sector. That means we don't use every method for all sectors; instead, we use techniques based on convenience, which yield a more robust process.

These methods have actually been used. To obtain the key indicators, I suggest visiting the CSO website and referring to the economic survey. In the PDF, there is a statistics section. There is an appendix section. There, you will get the key GDP indicators. However, one of the main concerns in India regarding the measurement of GDP is the estimation and data collection in the informal sector, as well as the frequent revisions.

It will affect the reliability of the GDP measurement. However, the integration of GST data and digital records has improved accuracy in recent years. In India, we calculate GDP by sector and sub-sector. You can see primary, secondary, transport, communication, trade, finance, real estate, community, and personal services, each with its own sub-sectors. For example, in agriculture, there are four sub-sectors, so GDP has been calculated using both sector-wise and sub-sector-wise classifications.

I'm just showing you a screenshot of the CSO website. Please go through this. You'll receive a wealth of information about how GDP is calculated and the methodology the CSO has been following. I am also providing some additional links that you can visit to obtain more information and details about GDP concepts and their calculations. Before I conclude this session, let us also examine how we compare GDP across countries in an international context.

Typically, we calculate GDP for comparison purposes. We convert GDP into US dollars in nominal terms, which reflects the total market value of goods and services produced by a country using current exchange rates. This approach is highly sensitive to currency fluctuations and doesn't account for cost-of-living differences. You can see here that these are the GDP estimates; when we convert these into US dollars, we can make a direct

comparison of GDP. For example, the USA has 26 trillion, but India has only 3.7 trillion US dollars. The issue here is that it reflects purchasing power because the prices of goods and services, or the cost of buying these goods and services, differ significantly in the USA, China, and India.

Some goods and services are significantly cheaper in India or China, while for the same goods and services, you may need to pay a higher price in the USA. For example, labor charges are very high in the US, but in China, or at least in India, they are not that high. To achieve this, we need to consider the purchasing power reflected in GDP. The GDP represents the market value of all goods and services. At the same time, this is the income that the economy generates, so it also reflects the standard of living. Suppose that with your income, you can buy more goods and services in your country than in another country, then your GDP needs to be adjusted for purchasing power parity.

GDP by purchasing power parity adjusts GDP to account for differences in the cost of living and inflation. It provides a better comparison of living standards and economic well-being. Consider, for example, the following: the same GDP when adjusted for purchasing power parity. Now, the Indian GDP has increased to $ 13 trillion, and the Chinese GDP has risen to $ 33 trillion, up from $ 17 trillion. It becomes the largest economy; therefore, based solely on this data, it can be said that when GDP is measured in US dollars, the US is the largest economy. However, when we use GDP at purchasing power parity, then China becomes the largest economy in the world. All this data can be obtained from the World Bank data panel, so please visit the World Bank data panel, and you'll learn what the purchasing power parity index is and how it converts GDP in US dollar nominal terms to GDP by PPP. Thank you for watching this video. See you in the next session. Thank you.