

# **Title: Principles of Economics**

## **Measuring a Nation's Income**

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🔊 [0:00]

Okay, congratulations, we have just completed the microeconomic part of the course.

In the next few chapters we will not be looking at individual parts of the economy, we will look at the overall economy, output level, prices, productivity, the aggregate level.

And if the amount of analytical material was over your head in the last few chapters, then the good news is that in the next few chapters, the methods that we use will be completely different.

We will not be studying advanced analytical models; there won't be any numerical or logical material.

In the next few chapters we will look at definitions of aggregate output, aggregate income, price level, productivity, unemployment, and so on.

So you can take a deep breath now, we will study completely different set of topics and we will use completely different tools in the next few chapters.

Okay, so let's dove into the discussion of aggregate output or aggregate income in the economy.

So you should think that when we encounter an economy, the first thing an economist would be interested in is how large is this economy or how rich is this economy, or how much economic activity takes place in this economy and it turns out that we can use the same number to describe the amount of economic activity, the amount of production, incomes generated and the amount of expenditures in the economy.

So we can say that we can use the same measure to describe aggregate output, income and level of expenditures in the economy.

We will say that gross domestic product is a good measure of these variables and later in the lecture we will say that the gross domestic product is also the best single measure of people's well being in a particular economy.

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And here, once again, this should not be completely new material.

We've discussed the flow of resources and the flow of money within an economy before.

In chapter one and chapter two, we discussed the circular flow diagram and we said that under some reasonable assumptions if we have a simple economic system with consumers, producers, maybe government, banks, and other entities in the economy, all the flows of resources in one direction should be followed by flows of maybe other kinds of resources in the opposite direction.

So here you should think that under some simple assumptions the amount of resources used up in the economy should be equal to the amount of monetary flows, so the production level and consumption level should be the same and they should be the same as the expenditures recorded in the economy.

And we should think that expenditures by one party of the economy is also a receipt or income in another party in the economy.

So even in chapter two when we discuss the circular flow diagram, we've got the equality of flows of resources, flows of money and incomes.

And as a side note on this topic, if there are problems in the economy such as uncompensated amounts of consumption because of negative or positive externalities or if there are outflows or inflows away from this simple self-contained economic system such as if we have imports there are not followed by exports, perhaps these equalities may not be valid.

Okay, so gross domestic product is defined as the market value of all final goods and services produced within a country in a given period of time.

It's a very neat definition and I want you to think that each word or each phrase in this definition is important.

"GDP is the market value" tells us that we are evaluating the amount of output or amount of activity using market prices.

The government doesn't set prices at which economic activity should be valued.

 **[6:00]**

It's the market itself that determines the value of all activity.

We are including all goods and services produced in the economy, and we are only looking at final goods, so we are not looking at intermediate products that will be used in the production of.

In the later stages, so for the calculation of the gross domestic product (GDP), we completely ignore resource markets and intermediate good markets.



We are talking GDP includes all the production that takes place in the economy, not necessarily all the sales that take place in the economy.

So it's important to distinguish the time when a product was produced and when it was sold.

On the next slide we will say that if a product was produced in a previous year, even though it is sold in the market today, this activity will not to be recorded in this year's GDP, it will be recorded in the previous year's GDP.

You may think that this accounting procedure can be a nightmare for a government workers because, governmental workers have to record very carefully the dates of each transaction, the prices, the market values or market prices, as of particular points in time and if the government doesn't carefully record these different timings and different values overtime, we think that the GDP could contain errors.

Okay?

GDP also only includes production taking place within a country, in a given period of time.

So I've already talked about the given period of time, that it is important to distinguish production from delivery from sale points in time.

In addition, we are including all production that takes place within the geographic confines of a country, so even if a foreign company or foreign individual produces, good or service within our economy, this production is included in GDP, if our national produces output in a different country, it would not be included in our country's GDP, it would be included in the GDP of the other country.

🔊 [9:09]

Okay?

The components of GDP, so a couple of side notes on this definition of GDP, we would say that GDP does not include the production of goods that never entered the market place, so the only way to record production is if there is some record of this output being transacted in the official economy.

If two neighbors trade with each other without writing a receipt to each other, this trade will never be included in GDP.

All goods produced illegally, that don't, that are not reported in official accounting documents, do not enter GDP.

Imports are not included even if they are consumed by domestic consumers because imports are by definition produced in other countries.



Production taking place in other years, such as previous years, are not included because of the definition of GDP.

Another take on GDP is that we can say that GDP is a sum of consumptions taking place at, in different parts of the economy.

So far we've said that GDP can be interpreted as national income aggregate amount of output or aggregate amount of expenditures, this slide talks about the expenditure definition of GDP, we can say that expenditures in the economy are made by individual consumers, so individual households there are expenditures or consumption taking place at companies, and corporations then there are expenditures taking place in the public sphere, and finally expenditures by foreign consumers.

Okay?

So generally, when we write the GDP as the sum of these four components, a good idea is to interpret it as the consumption by households, consumption by companies, consumption by government and consumption by foreign consumers.

But you should think that the definition is not so clear cut.

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Investment doesn't have to take place at companies, even government and even individual households invest part of the definition of GDP is that construction of new buildings and generally real-estate transactions are included in investment rather than consumption, and we should think that all private households, corporations, and government can engage in investment.

So what is GDP?

GDP is the current market value of all the goods and services produced.

That means that we are using current prices and we may think that well between two years, even if the level of output didn't change but simply prices changed between the two years, we would record an increasing GDP.

And we may think that's a problem.

Because if the output level hasn't changed and simply price's changed from the value of GDP, we would think that the economy has grown that the amount of economic activity has grown, even though only prices in the economy have changed.

We will talk about the distinguishing real factors from nominal factors in the economy later in later chapters, but in this and next chapter we will discuss a little bit of changing price level and inflation in the economy.

So if we are worried about changing price level if we are in particular level interested



in the level of output in the economy, we should calculate real GDP rather than nominal GDP.

Real GDP still takes the same level of output that is produced each year in the economy, but multiplies it by prices by constant prices, or by prices in some base year.

So the difference between nominal and real GDP is that for nominal GDP, we are using current market prices whereas real GDP multiplies the output level by constant base year prices.

And to get a sense of how prices in the economy increased over time, we can calculate GDP deflator as the ratio of nominal to real GDP times 100, and we would say that if GDP deflator is greater than one then prices have, sorry, if GDP deflator is greater than 100, prices have increased in the economy, if this is less than 100, prices have decreased between two years.

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If we compare the Nominal and Real GDP for the Korean economy, notice that there is a, there is a base year.

In this graph, the base year is year 2000.

In that year, both the Nominal and Real GDP are the same and in all future years, Nominal GDP is above Real GDP, in all, in all previous years, Real GDP is above Nominal GDP.

That should be intuitive.

And, here, you should think that because Nominal GDP is greater in this part of the graph and always smaller in this part of the graph, that implies that in all of these years, the inflation in the economy was positive.

So, prices keep increasing in Korea over time.

The final slide on chapter 23 deals with the idea that GDP measures well-being of people in the economy.

So, you should already think that GDP or GDP per person, GDP per capita measure the amount of activity that takes place per person in the economy.

Is that a good measure of wealth or well-being?

For various reasons, we may think that there are some limitations to this definition.

One, GDP only measures new activity taking place.

It only measures the production taking place today, rather than production taking place in the past.

So, if people get some benefit, some utility from consuming goods that produced previous years, GDP will not account for that source of utility.

To the extent that, consumers get value even from goods that are, that have 0 market price, such as leisure, clean environment.

GDP will underestimate the utility of people, to the extent that there is production taking place outside of the official markets.

Again, GDP will not account for that, and even we look at the GDP per capita, that measures only the amount of income or the amount of production or the amount of expenditure on average, of an average of person.

That doesn't tell us anything about the distribution of income consumption, expenditures, across different individuals.

## 🔊 [18:19]

So if, as a society, if we care about the distribution of well-being across individuals, GDP doesn't answer that question.

So far, I mentioned a couple of things that we would want GDP to include, but GDP doesn't include them.

On the other hand, GDP might include some bad things.

Anytime, remember that, anytime there is a market transaction, if there is new production taking place, GDP increases, even if the production takes place for, for a wrong reason.

So, if military equipment, jails, or disaster recovery efforts take place, these are expenditures and production flows that are associated with bad events.

But, we include them in the GDP.

So, GDP is, GDP could increase even if there is a bad disaster in the economy.

And finally just like I said about inequality among individuals, GDP does not tell us anything about the regional and seasonal distribution of incomes and economic activity.

And GDP does not account very well for different cost of living between regions within Korea.

It doesn't tell us about different costs of living in different seasons within a year.

And it doesn't tell us anything about, about different cost of living in different countries.

So, this last issue of distinguishing different cost of living in today's time period and in other time periods will become important in the next chapter, when we, when we introduce a new measure of inflation, the consumer price index, and we will compare consumer price index to the GDP deflator introduced in chapter 23.

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