Introduction to Economic Growth- I

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Lecture-2

Placing this course in the context of other courses in Economics

So, I am trying to answer this question as to where exactly are we going to place this particular course. As we said, let us quickly go over. So, this will be a quick recap for all of us about what we just mentioned are the four pillars of economics as a subject. The first is microeconomics. Remember the first year in college as a student of economics, the first thing that we are required to do is a course in microeconomics. And what is microeconomics all about? To put it in very, very simple terms, as the term micro suggests, what does micro suggest as a term? Micro means small.

So, here small is in terms of the unit. In the sense that when we consider an entire economy, the smallest unit of an economy is who? It is us as individuals, and we as individuals sometimes we are consumers, and sometimes we are producers or sellers. So, we wear different hats at different times, but at the end of the day we are individuals. So, this is what microeconomics is broadly all about.

This is about how individuals take decisions in an economy. Few instances, so this should ring a bell, that is we have all studied about consumer behavior. Remember, we had to solve those optimization problems of maximizing utility subject to a budget constraint, and that would help us solve the optimal bundles or optimal demand from a consumer. Similarly, we have also done chapters on behavior of firms, because firms are also considered as individuals or very small unit in an economy. And from here, we were introduced to the concept of different kinds of market structures.

Perfect competition, monopoly, monopsony, monopolistic competition. So, all those things are a part of microeconomics. And in this context, some of you might have also done a course in game theory, which is about strategic interaction between individuals. So, broadly, these are the topics that come under microeconomics. The second pillar, and possibly the second course that you have taken in college or you have taken in college already besides microeconomics, is macroeconomics.

Again what does macroeconomics signify? As the term macro implies, macro the general meaning of the term macro is big. At the macro level, when we say big, not in the sense of magnitude here, but big here means at the level of aggregation. So, in other words how to make sense of an economy at the aggregate level. So, in microeconomics, if we were asking questions about how individuals take decisions, in macroeconomics, we look at, you know, factors or we look, we have come across terms like GDP or inflation, and you might have done the IS-LM model, etc, and the fiscal multiplier, etc, etc, these all concern about how an economy functions at the aggregate level. So, broadly those were the things that we cover in macroeconomics.

Econometrics is another very important pillar of modern economics and what it helps us to do is that it helps us to analyze various types of data. You see it is one thing to study these economic observations and to study the different kinds of theoretical models that perhaps explain what we are observing around us. But at the same time we should also know that what is the data telling us, is the data supporting theory, is the data negating theory, what kind of information are we getting from data and in today's age which is the age for data, right? Data is the next oil as they say it is very very important to analyze data. And again of course, there are various ways in which econometrics is done, there is classical econometrics, there is Bayesian econometrics, but at the core well what everyone is trying to do, they are trying to analyze data. And what kind of data, I am also giving a very quick introduction here, because later in this particular course we will be looking at some data.

So, the first thing is that when we look at data, we try to recognize that what kind of data am I looking at? What does that mean? That is data can be in a cross-sectional format. What is a cross-sectional format? Cross-sectional means that at any given point in time, let us say we choose the year 2023. Now, in the year 2023, perhaps we are looking at what has been the per capita income across roughly I think there are about 200 countries in the world, right? So, if we are looking at this kind of data, then this is known as cross-sectional data. There is another kind of data format, which is known as time series data. As the term suggests, this is data over time.

So, what kind of data that might be? So, let us say that we are trying to answer the question, what has been the economic performance of India in terms of per capita GDP since independence? So, see in this case, instead of considering all the 200 countries of the world, for one particular year. Here, we are considering only one particular country, which is India, and we are looking at its performance over the last almost 7 decades since independence. So, this is known as time series data. Panel data is a combination of both cross-sectional data and time series data. Of course, it becomes more complex to handle this kind of data because it involves both the dimension of time and the dimension of different agents or countries.

We call it N by T, but at the same time, it also conveys a lot of information. So, imagine we are now discussing the per capita income level of all these 200 countries around the world over the last 50 years. So, we are going to look at the per capita GDP of each of the 200 countries for the last 50 years. So, as we mentioned, our data becomes more complex because we are handling a large amount of it. But at the same time, it is also quite insightful.

So, the kind of econometric techniques we are going to adopt to analyze data depends on the format of our data; that is why I mentioned all three different classes. So, for instance, there are some courses that some of you might have taken, such as time series analysis, where we are taught how to analyze data that is specifically in time series format. There is also econometrics based on panel data because the techniques that we adopt for panel data are going to be different from the techniques that we adopt for, let us say, cross-sectional data or time series data. So, that is why it is important to first understand and recognize the format of the data before we can proceed with any kind of analysis, right? Okay, and the last pillar, last but certainly not least, is mathematical economics. Okay? Where we employ mathematical concepts and techniques to solve economics problems.

One instance that you might want to recall is the constraint optimization problem. Remember the chapter on consumer behavior where we maximized utility subject to the budget constraint? Sometimes, maximizing profit may be subject to the production function, or we may be minimizing costs. So, these are all optimization problems—sometimes constrained, sometimes unconstrained. These are just some examples, and we employ various mathematical techniques in trying to solve whatever questions we are asking ourselves. So, broadly speaking, these are the four very important pillars on which economics, as a subject, stands.

Now, again, coming back to our particular question: where are we going to place the course on economic growth within this specific orbit that we have drawn for ourselves? Well, this course falls within the broad area of macroeconomics. What kind of techniques are we going to use here? So, we are mostly going to employ the concepts that we have learned in basic macroeconomics, and we will, of course, utilize some optimization techniques, among other things. So, broadly speaking, if one is wondering what kind of course this will be on economic growth, one can say that it falls within the subfield of macroeconomics. So, we are going to use macroeconomic concepts here, whether we take modern-day economic growth courses or advanced-level economic growth courses. There we will find a generous contribution from microeconomics as well, because most of the macroeconomic theory we use has a microeconomic foundation.

So, in that sense, this also has contributions from microeconomics. As we said, we are curious beings, right? So, we are not always satisfied with the various theoretical models that attempt to explain what is happening in reality. The next step is always to look around us and analyze whatever data we have, and in data analysis, econometrics is a great help.

So, if we would like to generalize, then yes, economic growth as a course falls within the broad area of macroeconomics, but it also employs different tools that we learn not only in macroeconomics but also in microeconomics. Furthermore, if we go one step further, we can analyze data.

Then, we will employ various econometric techniques. So, you see how it is an amalgamation of not just macroeconomics, but also macroeconomics combined with mathematical techniques, microeconomic concepts, and econometrics. Now, as we mentioned, this particular week we are also going to devote time to some very fundamental concepts because unless these basic concepts are clear, we will not make much progress in this course. As we go over these concepts, we will also try to relate them to what we have already studied thus far, perhaps in other macroeconomics courses, and identify the questions that have been answered in other areas of macroeconomics versus the questions we are going to ask ourselves here. So, I feel that the very first fundamental concept that must be absolutely crystal clear, especially for this course, is the fundamental distinction between the short-run and long-run aspects of an economy.

Now, how do we distinguish between the short-run and long-run aspects of an economy? So, are we talking about an economy, right? Or about a country? A country has both aspects. So, before we proceed to see how economics treats these two things differently, let us first try to understand them in a very simplistic way. Now, these are some of the analogies I came up with; these are analogies I developed while teaching a class, but you are free to come up with your own examples as well. Now think of it this way: a person can be me, it can be you, or it can be someone we know. As human beings, we all have our general health status or health profile.

So, let us talk about someone who might be 80 years old now. So, he has lived a good part of his life, and looking at his life, we can say that he is more or less a fit person, right? Now, when we see people, we do think like this or comment like this. The sentence is already grammatically correct. Now, it does not mean that this person never fell ill or sick at any point in his life. What it means is that for over, you know, the eight decades that this person has lived so far, except for minor things here and there, by and large, this person has been quite healthy.

Whereas there have been times of temporary illness or perhaps a small surgery here and there, when we look at the overall health profile of a person, we can say that this person is quite fit. The sentence is already grammatically correct. Because this is exactly the distinction between the long-run aspect of an economy and the short-run aspect of an economy. So, just like the human being we were talking about here, we are referring to the same person. We are talking about the same economy, but there is a long-run aspect to it.

This is similar to the long-term health status of a person compared to a short-term aspect of the economy. For example, someone may fall ill for about five days. So, that is quite possible; otherwise, this person is, by and large, quite healthy. Similarly, an economy might be functioning very well. But there are times when, perhaps suddenly, for a year or a couple of years, there may have been a recession, and the economy was not performing very well.

So, a couple more analogies like this. One of these days, we have semester systems everywhere, and when we receive our grade sheets, we generally see two columns there. One is known as the CPI or an equivalent of it. What it means is the cumulative grade point average. So, maybe you have completed courses over eight semesters.

So, there is a CPI that captures the overall performance for all eight semesters, right? Versus that, there is a semester-specific performance metric, something like SPI, which we generally refer to here regarding a student, right? Now, both the CPI and this SPI belong to the same student, but they convey very different information. What is the SPI conveying to us? It tells us how this particular student has performed in a specific semester. Maybe the SPI is around 9. So, the student got a few A's and maybe a B-plus somewhere, right? Whereas, if we look at the CPI or the overall cumulative grade point of the same student, we see a different number. The sentence is already grammatically correct.

However, if you would like a slight variation, you could say: "What would that imply?" That would imply how the average performance of the student has been over these 8 semesters. So, you see how they are conveying two different pieces of information for the same student. Similarly, the point we are trying to make here is that we are referring to the same economy. We are not talking about two different entities here; rather, for the same economy, there can be a CPI version, which is like the long-run average, versus an SPI version, which is more short-term in nature. Okay? I hope this makes sense and that you are already thinking of examples.

As I said, I do not know how you will react to these analogies, but these are things that generally come to mind when I teach. The other analogy I can think of is the distinction we make between the climate and the weather of a particular place. So, it might be sunny today, it might be windy tomorrow, but by and large, let us say that I am in Kanpur right now. So, here we would say that by and large, it is a hot place. Now, that does not mean that we never get rain or that it is never cold.

No. In the short run, we do get rain, and it does get very cold, by the way, but the broad pattern is that it is generally very hot, right? So, these are the differences. I hope I have been able to convey the distinction between the long run and the short run for the same entity, as they represent two different perspectives on the same thing. Similarly, in regard to an economy, we now return to our point after exploring these analogies, and I hope you can add more examples for your own understanding. So, returning to the economy, here

are two screenshots that I am sharing with you, which contain headlines that we sometimes encounter in the newspaper. On one panel, which is why I have highlighted it here, the keyword is "recession," where we see that the headline discusses the UK recovering faster than expected after slipping into a technical recession.

According to the IMF, while in the other panel, we see that the keyword is growth. This is from the Economic Times, and the headline is "Driving Growth and the Impact of Infrastructure Development on Economic Prosperity in the Indian Context." So, this is the point we were trying to make: that when we read newspapers—perhaps on a daily basis—or magazines, or visit any website, we are trying to understand how an economy is doing. There are two perspectives on an economy, and it should be very clear to us which perspective we are discussing. Accordingly, the questions we ask, and more importantly, the answers we receive will depend on which perspective we are considering.

Again, going back to the analogies I provided, why is this important? Because, by and large, I would say that the weather pattern, or let us say the example we gave, is that the student is a fairly good student, let us say. The sentence is already grammatically correct. However, if you are looking for an alternative phrasing, you could say, "Why are we saying this?" That may mean that the CPI is around 9. Now, that does not mean that this student never did poorly in any course. There may be times or courses where the student did not perform as well.

But overall, the student might have performed at an average level very well. Similarly, we see that there are two terms here. One is of recession, and the other is of growth. Both of these terms apply to the same economy. Of course, the examples here, the headlines that I have provided, belong to two different countries, but that is just for the sake of illustrating or mentioning the headlines.

Nevertheless, these represent two different perspectives on an economy. One is more short-run in nature, and regarding the term "recession," which we will examine, we will elaborate a bit more on that. This is more short-term in nature, the term recession. The term "growth" or "economic growth" that we discuss is more long-run in nature. You can think of long-run growth as the aggregate performance or average performance of a student, while this recession is more like the short-term performance or a very semester-specific performance of a student.

Again, why are we going over this? Because, as we said, we come across headlines like this very often, we should be able to distinguish between the two, as the causes can be very, very different. So, in order to find answers, we should first be able to distinguish between the two concepts, and only then can we proceed toward answers. I hope it is clear up to this point. So, first, we will talk a little bit about the short-run perspective of an economy. Now, regarding the short-run perspective of an economy, we refer to it by different terms.

Sometimes, we refer to it as cycles; other times, we call it to be more specific. These are business cycles, and at times, we also refer to them as fluctuations in the economy. So, these are different terms that are used interchangeably at different times, but they all denote or imply the same thing. Well, what is the short run of an economy, or how does an economy perform in the short run? In the short run, there are fluctuations in economic activities. What does the term "fluctuation" mean? What does fluctuation mean? Up and down.

Sometimes it is up, sometimes it is down, much like the Sensex. If you follow investments and the stock market, you know that the Sensex is very high on some days and dips on others.

This is the meaning of fluctuation: going up and down. Now, the term that is more familiar and is also associated with these fluctuations is known as recession. Recession is a dip, and of course, it also has a technical definition. The general understanding is that when we talk about dips—specifically, significant declines in the economic activities of countries—it is referred to as a recession. The opposite of that is economic booms, which occur when countries do very well. For example, there may have been a sudden discovery of a medicine, or perhaps this new AI that people are calling a new technology.

That is gradually taking over and increasing our productivity. So, maybe this suddenly enhances a country's income. So, again, as we just mentioned, just like the Sensex goes up, it also goes down. Similarly, the economic performance of any country or economy can sometimes be very strong. There are reasons for this, and at other times, it may not perform well, which are moments of real concern.

And these are, you know, the times of recessions, as we generally refer to them when there is a slowdown. Also, I would like to remind you that there is a very technical definition of recession. Every time there is a slowdown or a dip, it is not necessarily a recession, but we are not going into such great detail here. The feature of these cycles or fluctuations is that they are unpredictable in nature. So, again, recall the sense of x going up or down; I mean, maybe to some extent we can guess—at best, we can guess—but we can never predict with 100 percent certainty whether it is going to go up today or down today.

So, similarly, the fluctuations that we experience in economic performance are unpredictable. People can guess that there may be a slowdown and that things might get worse from here or better from here. But again, they cannot be predicted with 100 percent certainty; that is a characteristic of cycles. And neither is it seasonal; as you know, we cannot say that every year around this time. Let us say, you know, here in India, every year around Diwali time, we generally purchase a lot of things.

Consumer expenditure typically goes up. In Western countries, consumer expenditure generally increases significantly during Christmas time because it is their festive season.

So, these are known as seasonal trends because every year, we know that around the same time, consumer expenditure is expected to increase. But the characteristic of cycles of fluctuations is that we can never predict them in advance. We cannot say that every year around the time of October or November.

The economy is either going to do very well or it is going to dip. So, this is another feature that is not seasonal in nature. Naturally, the question arises: what causes all these fluctuations? The sentence is already grammatically correct. This is, again, a very profound question. There is an entire area within macroeconomics that deals with these kinds of questions. But just to give a very short and quick answer to that question, fluctuations are caused by what we call "shocks" in an economy.

What type of shocks? Let us say, you know, there is a housing market meltdown or there is a financial market meltdown, okay? Or there is an oil crisis, as we talked about the oil shocks in the 1970s. So, shocks are sudden impacts and sudden events. Again, they are shocked because no one could predict that it was going to happen. So, when these kinds of things happen in an economy, even with the COVID-19 pandemic, in some sense, it is a shock because no one knew this was going to happen. Once it happened, we had no idea how long it was going to continue or what the impact would be, but it did have an impact on the economy, right? So, these are the reasons that these are temporary shocks, which cause economic activities to fluctuate. That is just to provide a very quick and short answer to a very profound question.