

**Petroleum Economics and Management**  
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**Module - 02**  
**Basics of Microeconomics**  
**Lecture - 05**  
**Introduction**

Hi, everyone. I am Dr. Anwasha Aditya, instructor for the course Petroleum Economics and Management. The course discusses the very recent issues in world oil market from the point of view of sustainability economics and politics. The purpose of the course is to create leaders and game changers in the petroleum industry. So, the course will be beneficial for those who want to enter the oil industry, but it is not limited to that.

Those who are having a background on say geology and geophysics or chemical engineering, naval, mining, metallurgy, they can also be benefited from this course. Therefore, students from various disciplines like economics, engineering and science discipline as well as industry professionals will find the course very helpful. even those who want to prepare for UPSC exam or those who want to join the consulting or the analytics sector, they will also be benefited from the course.

Therefore, there is no prerequisite in the course, but as you can see the name suggest that petroleum economics and management, so, that means, it is a specialized branch of economics. Therefore, for successful completion of the course and understanding the petroleum issues one needs to have some basic understanding of concept of economics.

Therefore, in the lecture plan we have included some lectures which will give some broad overview of very basics of economics to the extent which will be required for completing the course and understanding the petroleum economics related topics. So, with this we start our today's lecture.

So, in second module we are going to give a brief overview of Basics of microeconomics to the extent which is required for the petroleum economics and management course.

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**Concepts Covered**

- ❖ What is Economics?
- ❖ Why do we study Economics
- ❖ Concept of Market, different types of market
- ❖ The world of Economics
  - Microeconomics versus Macroeconomics

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So, the introductory lecture in module two will deal with what is economics. So, we need to know what is economics all about, what do we study economics, what is the subject matter and purview of economics. And, we also need to know some concepts which are very important in economics because we have to gradually get accustomed with the terms used in economics.

So, with this we will discuss the very important concept of market because when I am discussing about for example, the petroleum prices we need to know how price is formed in a market. So, we should have a clear cut idea of market and how the prices are decided in a market, how the quantity transacted is decided in a market. So, that is the purpose of studying the economics part.

It will be extremely essential for those who do not have any background of economics so far because otherwise they will not be able to proceed in this course. And, those who have already some exposure to economics, so, this few lectures in module two these will be just a brush up for them when we are discussing the concepts of economics and some microeconomics concepts.

So, in today's class after discussing what is market will also categorize and classify markets into different forms and we discuss the different branches of economics; that means, micro versus macroeconomics.

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So, what is economics? what do we want in our life? All of us generally most of us to be more specific want good job or some stable source of income. We want good housing we want vacations in exotic locations we want to buy the newly launched model of automobile.

So, we want best of everything in our life, but is there anyone you can find out who has got everything in life? No, we may not be getting and even if you one gets all the things in physical term that person may be lacking time to enjoy these materialistic things, right.

So, we cannot have everything in life we want. Just like one individual cannot have everything in life he or she wants, an economy or a society also cannot have everything it needs for all the citizens of that country. Whether it is a poor country or it is a rich country, all the societies are constrained. So, we start from some individual point of view and then we will discuss from the economics point of view.

So, we have our unlimited ones. We want best of everything and in more amount, most of us. There may be exceptions, but in general. So, we want most of a large amounts of everything and in good quality also. So, our wants are unlimited. So, what is the purpose in life? So, one purpose of life apart from the spiritual purpose, academic purpose also is to achieve our maintain or satisfy our wants.

So, how do we satisfy our want? Like you are taking the example of buying house or buying car or going for trips – so, how do you satisfy that we can satisfy that by consuming the goods and services. So, how do we consume goods and services? We have to buy the goods and services; by services what do we mean? See, we do not only consume the commodities of the products, we consume lot of service.

When you are earning a degree by getting admission in some educational institute, so that is a service ok medical service or health service you are going for some health checkup. So, that is also a service. So, we are consuming both goods as well as services. So, how can we buy the goods and services? We buy the goods and services by our income. We have to work for earning our income because the endowment income is very less or for some it can be more, but income is the main.

Income that one earns from using their labor is the wage income and that is the main source of earning for a household or for an individual, ok. So, our income which gives us purchasing power that is limited for the rich people it can be high, but it is not unconstrained. However rich a person may be there will be some upper limit on the income at a given point of time.

So, our income is limited, but our wants are unlimited you see there is a mismatch. How do we satisfy our unlimited ones? By buying the goods and services with the wage income we earn or the family endowment income that one can have, but these incomes are limited, but our wants are unlimited, but at the same time you see we cannot buy and anything we want even if we have the money.

We just saw in lockdown. We just had gone through some phases of lockdown during the COVID time period why we saw that even with income we could not buy many goods and mainly the services. For example, the movie theaters were closed, the shopping malls were closed, transportation also was very restricted for only the important services, ok.

So, even if one had the purchasing ability to consume the services like saloon services going to movie theater shopping mall he or she was not able to do during the lockdown. Why? Because those goods were not provided at that time; that means, a precondition for us to be able to consume the goods and services is not only provided by income, but also

those goods and services must be produced. So, how a good or service is produced? By combining the resources.

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**Scarcity and Social Choice**

- ❑ Society faces scarcity of resources.
- ❑ Categories of resources:
  - ✓ Land (natural resources)
  - ✓ Labor
  - ✓ Capital
    - (a) Human capital
    - (b) Physical Capital
  - ✓ Entrepreneur

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So, what are the resources? The neoclassical economists classify resources into main four categories that is land. So, by land we not only means the territory, it is also the natural resources. Like for example, forestry, mineral or fishing products. So, overall it is the natural resources, but it is termed as land.

Second is labor. So, the neoclassical economics we do not distinguish between skilled or unskilled labor. So, we are just considering labor force as a whole. Third is capital. Now, capital can be physical capital or human capital and fourth is very important. So, that is entrepreneur. So, who is entrepreneur? So, entrepreneur is someone who will take the initiative to combine this above three factors of production land, labor, capital to produce the final good and then provide it to the final consumer.

So, these are the four categories of resources now each and every economy in the world. However, rich it may be is constrained by the resources one economic can be having one resource in abundance, but it can be constrained by other resources. Say for example, we already discussed that the middle east countries like Saudi Arabia is heavily endowed with petroleum products, but Saudi Arabia is constrained by other type of resources like human capital, physical capital, right.

So, there is no country in the world that we can find out which has unlimited amount of all the resources and we have already discussed about the scarcity of the energy resources. So, our resources are in scarcity, but our wants are unlimited. So, there is a mismatch. So, the society as a whole or the economy as a whole also wants to achieve high rate of growth also wants to have good standard of living, overall economic development.

So, not only economic growth, but also good governance, better health, education, rule of law, political stability. So, we want best of everything for the economy as a whole also, but we are constrained by the availability of resources.

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**Social choices**

1. What to produce?
2. How to produce?
3. For whom to produce?

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So, with this we discuss the three main issues which are faced by any economy. Whether it is a primitive society or it is a modern society, it does not matter. All the societies or the economies are subject to the following three issues. First is what to produce? Now, this is given by the demand of the consumers.

Now, with international trade opening up the opportunity of selling your products in rest of the world so, demand is not only the domestic demand, but also what is demanded in the rest of the world ok. So, the first questions answer is given by the demand side. So, what to produce? So, if a good is not demanded then that cannot be produced, then it will be useless – so, what to produce.

Second is how to produce? What does it mean? So, how to produce the goods and services, how to combine these resources? Now, there can be different ways of producing a good or service. Say in the physical classes we have lectures in physical mode where the techniques are different.

So, there is in the same classroom the teachers and students are sitting and we use the equipments are also different, if we compare the physical classroom and the online mode. So, in online mode we are dependent on the electronic devices on the internet electricity; in the physical classroom, what we need? In physical classroom, we need the blackboard or the whiteboard, chalk, duster or marker pen, some table, chair.

So, you see the same service that one lecture can be delivered in physical mode or in online mode using different technologies. So, the same good or service can be provided in many alternate ways. For example, say in the developing countries of Africa or say in Asia like say Nepal, Bhutan, Bangladesh even in India. So, most of the products are very labor intensive.

So, for example, a table is produced using the raw material is wood. Now, some carpenter may be using some primitive machine tool to convert the wood into a table. Whereas, in the developed countries they follow a more automated technique of production let us say Japan or Australia, US, even in the European Union countries. So, they use more capital intensive technical production.

So, they maybe converting the wood into table by using more better machineries and there maybe few workers who will just operate the machineries. So, the same product can be produced using different technologies. So, the answer to the second question is given by the state of technological advancement of the society. So, what are the possible technologies which are available in the society?

Now, that the country or the economy decides what to produce and how to produce the third issue is for whom to produce ok, so, that means, it is the problem of allocation. So, after production whether are we going to sell the resource the final product in the market or whether it will be provided by the government; that means, publicly provided.

Like for example, in the rationing system or in the public distribution system in India, we provide a food grains and other essential elements to people below the poverty line or

people having less than some stipulated level of income, those are provided at a lower cost.

So, the third problem is regarding allocation – how to allocate the goods and services once they are produced, will it be allocated via market? That means, via market means those who are able to buy they will be those were able to pay can buy and via the government means, the government can provide the goods and services free of cost or even at a subsidized rate. So, this is a very critical problem of allocation.

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**What is Economics?**

**Economics deals with scarcity and choices and finds the best way to achieve these targets with the help of limited resources.**

It is sometimes referred to as the "*Science of Scarcity*".

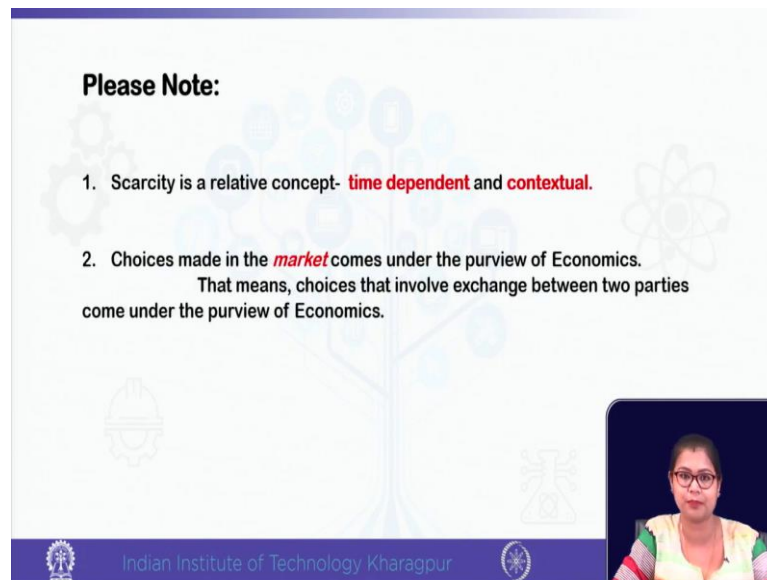
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The slide features a central graphic of a tree where the branches are represented by various icons such as a gear, a lightbulb, a bar chart, and a person. The background is a light blue gradient. In the bottom right corner, there is a small video inset showing a woman with glasses and a colorful top speaking. The footer contains the IIT Kharagpur logo and name.

Now, with these three major issues, now we can define economics. So, economics deals with scarcity and choices the way we have defined and it tries to find out the best way to achieve the target with the help of limited resources. So, in some sense we can also refer economics as the science of scarcity. So, basically in a nutshell economics finds out the optimal ways of allocating the resources which are in scarcity.



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**Please Note:**

1. Scarcity is a relative concept- **time dependent** and **contextual**.
2. Choices made in the **market** comes under the purview of Economics.  
That means, choices that involve exchange between two parties come under the purview of Economics.

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Now, before proceeding further we should have some clear concept regarding some of the terms we are using. So, when I am referring to scarcity we should remember that scarcity is not an absolute concept, it is a relative concept and also it depends on context. So, scarcity can vary from country to place to place as well as over time.

So, if something is in scarcity does it mean that it will remain in scarcity forever or it may not be in scarcity at all the places at a particular point of time? Like we have already discussed the Middle East countries of huge amount of endowment of petroleum products, but in India we have huge scarcity of domestic endowment of petroleum. So, scarcity of petroleum is not same across the world, it is varying. Similarly, it is also varying over time.

Earlier see drinking water was almost free, but nowadays either we have to buy a purified drinking water or we have to use some techniques or machineries to purify our water. So, that means, the drinking water is no longer free in such a way. And, also as far as air is concerned in the very polluted cities of the world we are nowadays using air purifiers which was just unbelievable say few decades ago where fresh air was free. So, scarcity is not an absolute concept. We should keep in mind.

And, when we are defining that economics deals with scarcity and choices, so, which type of choices? Are all the choices even our personal choices that is also subject matter of economics? No, we should remember that economics deals with the choices which are

made in the market; that means what? That means, that involve the transaction between two parties where there is no explicit transaction between the two parties. So, that is not a subject matter of economics which our personal decisions.

But, obviously, if someone is enrolling for a degree in some academic institute that is also a choice which is made in the market because someone is engaging his or her a very important time, money, energy to get the degree with the hope that one will be established in life by doing that, ok. So, the choices which are, because you are comparing across different degrees and educational institute to enroll yourself in some particular program.

So, that is a choice which is made in the market, but after taking admission into the institute who will become your best friend that is a personal choice, that is not under a market. At least there is no explicit transaction going on in that personal choice, there can be implicit transaction. Like a student can bank a class and the friend can give a proxy, but that is implicit there is no market for that, ok. So, the choices which are under market those are coming under the purview of economics.

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**Concept of Market**

- ❑ Markets may not be confined to a particular geographical location or online platform.
- ❑ For a market to function we need two parties- buyer & seller - but they may not meet each other.

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The slide features a light blue background with faint icons of a gear, a tree, and a flower. A small video inset in the bottom right corner shows a woman with glasses speaking. The footer contains the IIT Kharagpur logo and name.

So, in this now the next important concept we need to have very clear concept is the concept of market. What do we mean by market? Often we hear about a particular place in every cities, localities, township, villages we have market. So, do we mean that

particular market? A particular place to be market? Suppose, we have a technology market in the IIT, Kharagpur campus.

So, when I am saying market I am I referring to that particular technology market? No, when I am referring to market in economics that market is not necessarily confined to any particular geographical location or for that matter not any online site because nowadays we do lot of online purchases. So, is it a particular e-commerce site? No, when we mention market, we do not refer to any particular geographical location or any particular e-commerce site as a market.

So, market is basically it is a mechanism. So, how do we define market or what are the characteristics of a market? For a market to function, we will meet two parties – the consumers and the producers, but they may not be meeting each other physically, ok. So, market by market we are not referring to a particular geographical location or online portal, it is a mechanism where there are two parties who are not meeting each other. So, that is what we mean as a market.

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**Free versus regulated market**

- Transaction is not influenced by some other party
- Regulated: when determined by government/some other agent

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Now, markets can be of various types. There may not be any regulation or government intervention or any third party regulation. So, that is called a free market or markets can often be regulated where the government or any third party can come in and set up the price of a particular product, such a market is called a regulated market. As we proceed we will be discussing more in detail about these issues.

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The slide is titled "Perfectly vs Imperfectly competitive Market". It contains two main bullet points. The first is "Perfectly competitive market", which includes a sub-point "Atomistic- all economic agents 'individually' carry out very insignificant proportions of total transactions. They are too small to influence market price." The second bullet point is "Imperfectly competitive market", which includes the sub-point "Firms have market power." In the bottom right corner, there is a small video inset showing a woman with glasses speaking. The slide footer includes the Indian Institute of Technology Kharagpur logo and name.

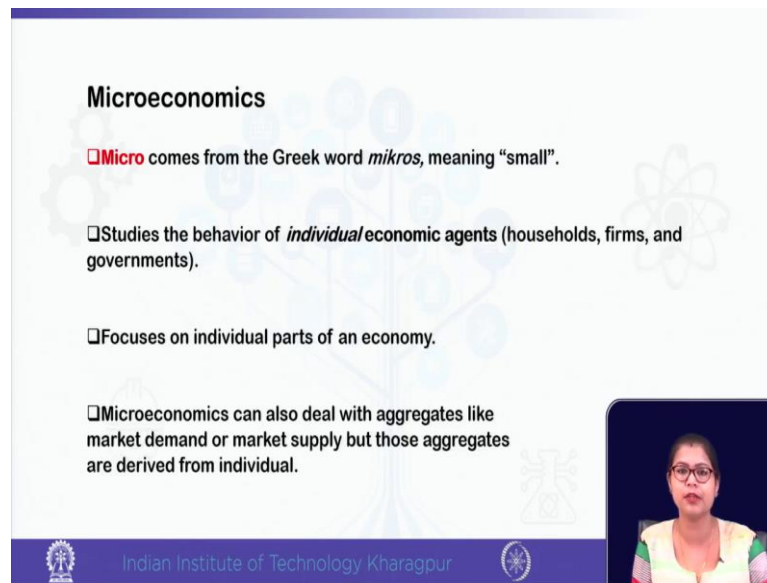
Another broad classification of market is perfectly versus imperfectly competitive market. What do you mean by perfectly competitive market? In perfectly competitive market there are a large number of buyers and sellers. And, the buyers and sellers are very small or atomistic, so that they do not have any ability to influence the market price the buyers and sellers take the market price as given.

Say for example, the individual vegetable vendors or fruit vendors even if a particular fruit vendor does not sell his or our fruit on a particular day, the price will not be affected. So, this is called a perfectly competitive market. So, the economic agents are very small compared to the entire market size. So, they do not have any market power or the ability to influence the price.

And, what is imperfectly competitive market? Where the firms have market power. So, the firms can influence the market price. If you remember, we already discussed that OPEC is the Organization of Petroleum Exporting Countries, they have a leadership position in the world oil market.

Therefore, the world oil market is not a perfectly competitive because the world oil supply is dominated by few countries. So, later we will study the market structure of the world petroleum industry in very detail which comes under as an example of imperfectly competitive market.

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**Microeconomics**

- ❑ **Micro** comes from the Greek word *mikros*, meaning “small”.
- ❑ Studies the behavior of *individual* economic agents (households, firms, and governments).
- ❑ Focuses on individual parts of an economy.
- ❑ Microeconomics can also deal with aggregates like market demand or market supply but those aggregates are derived from individual.

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In today’s class I am just giving a very basic overview of the main concepts of economics, the terms will be using in the forthcoming lecture we need to know those terms. Now, economics which deals with the scarcity of resources and allocation of the resources in efficient way is divided into main two branches, microeconomics versus macroeconomics.

So, what is the difference? Micro means small. So, micro the word micro comes from the Greek word *micros* meaning small. So, microeconomics studies the behavior of individual economic agent. It can be the household, it can be a particular firm, a particular labor, a particular government also. So, in microeconomics the focus is on the individual parts of the economy.

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**Macroeconomics**

- ❑ **Macro** comes from the Greek word *makros*, meaning "large"
- ❑ Deals with aggregate
- ❑ Studies the behavior of the overall economy.

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This is in contrast to microeconomics. In microeconomics, we deal with the individual; micro means small. So, microeconomics deals with the individual. So, we study the behavior of the individual economic agent as a whole. For example, you often hear about the microeconomic indicators like interest rate, exchange rate. So, these are the microeconomic variables.

So, microeconomics deals with the economy as a whole. Now, there is a convergence also because a very recent development to study the microeconomics is also have a micro foundation. So, we start with the individual economic agent and then we go to the aggregate. So, that is called a micro foundation of microeconomics.

Now, I am not going into that very detail because our purpose is just to successfully complete the issues to be discussed in petroleum economics and management course. So, that is why we are just giving a very brief introduction on the important concepts of basics of economics and more specifically some microeconomics concept.

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**Conclusion**

- ❖ Subject matter of Economics
- ❖ Concept of Market
- ❖ Branches of Economics

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So, in the first lecture of module two we gave overview of what is economics. So, what we found is that economics is a science of scarcity. It is a special branch of social science which deals with allocation of resources that are in scarcity in the most efficient way. Now, which type of choices are discussed in economics?


The choices which are made in the market. So, we define the concept of market which is not a particular geographical location or some online portal. So, by market we refer to a mechanism where there are two parties who interact not may not be they are meeting physically, but they interact and the price and quantity transacted is set up.

Now, there may be interventions by a third party in the market. So, that is called a regulated market or sometimes the market can be left to the buyers and sellers. So, that is called a free market. And, the other classification of market is perfectly versus imperfectly competitive market.

In perfectly competitive market, the individual economic agents do not have any ability to influence the market price and in imperfectly competitive market the economic agents have a greater market power and they can influence the market price. For example, Saudi Arabia by changing its oil supply can influence the world price of oil. As we proceed we will study in detail the market structure of global oil industry which is imperfectly competitive.

And then finally, we distinguish between microeconomics and macroeconomics. So, microeconomics deals with the individual economic agents and macroeconomics deals with the aggregate or the economy as a whole.

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**References**

1. Microeconomics by Jeffrey Perloff, Pearson Education; Seventh edition, 2019.
2. Microeconomics by Ellen Miller and G. S. Maddala, McGraw-Hill Education, 2004.
3. Microeconomics by Robert Pindyck, and Daniel Rubinfeld, Pearson, 8<sup>th</sup> Edition, 2017.

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So, for the basic of economics and especially the microeconomics part one can follow any standard microeconomics book, apart from the PPTs or the resources will be providing. So, any standard microeconomics books will do and I have mentioned three books, but one can follow any other microeconomics book as well.

Thank you. With this lecture, we finished the introduction of our Module two. In the subsequent lectures, we will be discussing in more detail about the required concepts of microeconomics.

See you in the next class.