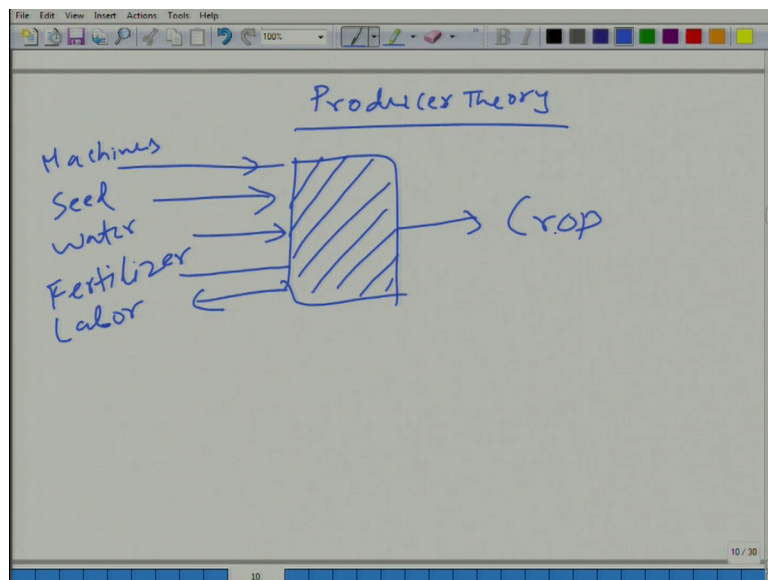


An Introduction to Microeconomics
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Lecture – 72
Towards Producer Theory

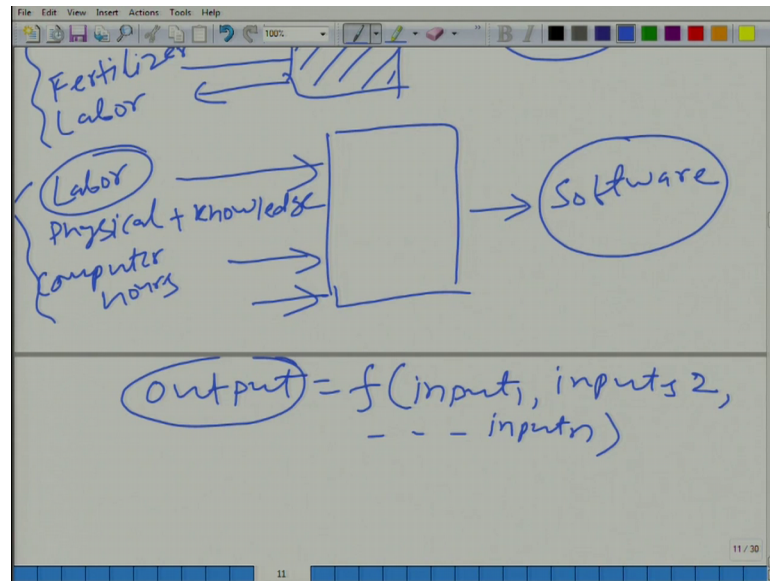
Let us begin a new chapter, we have learned about consumers. Now another important side of an economy is producers and we are going to learn about producers today, in the chapter called producers theory.

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So, just let us look at you know simple production process, what do we mean by production process? Something like transformation. Like for an example that what we have here is seed, water, may be fertilizer, labor, may be some machines, machines such as tractor, flour things like that and then they come together. Here I am not this let us call this a black box, something happens and then what we get is, crop ok.

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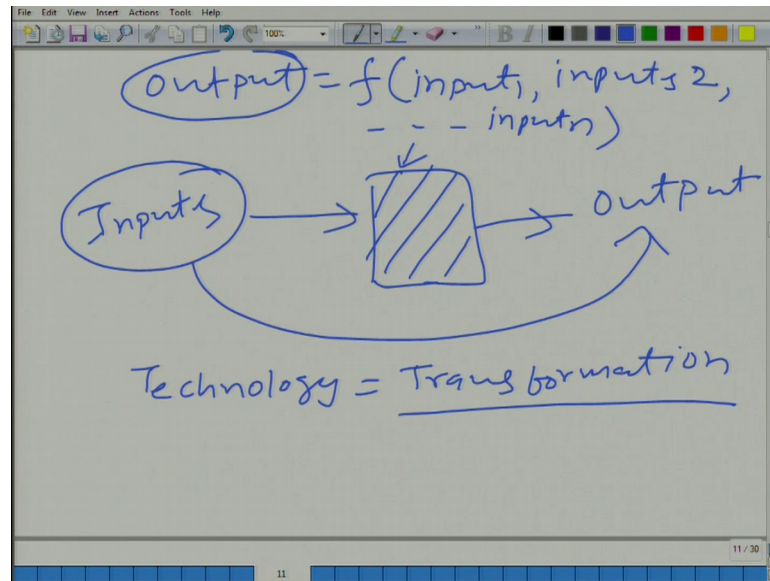


Another example just for, let us take another example, what we have, probably you will be more familiar with this, is what we have some sort of labor may be physical as well as knowledge ok. Then we have some computer hours and we are able to write or these people are able to write some code or in other words software ok.

I am taking two very different example; crop is some is a physical product, while software is not a physical product ok, its, but the process is very similar that some inputs are coming together ok, what is happening basically, that we have some output and how do we get. We have number of inputs come together somehow, because probably here a labor is bringing or an entrepreneur. We can add entrepreneur as another production factor, is bringing all these thing together.

And in and they are combining in certain particular way and what we are getting, we are getting output ok. If you pay attention to these two examples, these two examples are very different, the processes involved are quite different ok, but in economics we are going to generalize. What we are not going to talk about as per say; of course, I will give various example using crop or software or any other production process; such as that by using bauxite and electricity, water you get aluminum ok, we are going to give lot of example, but the focus will be on this black box ok.

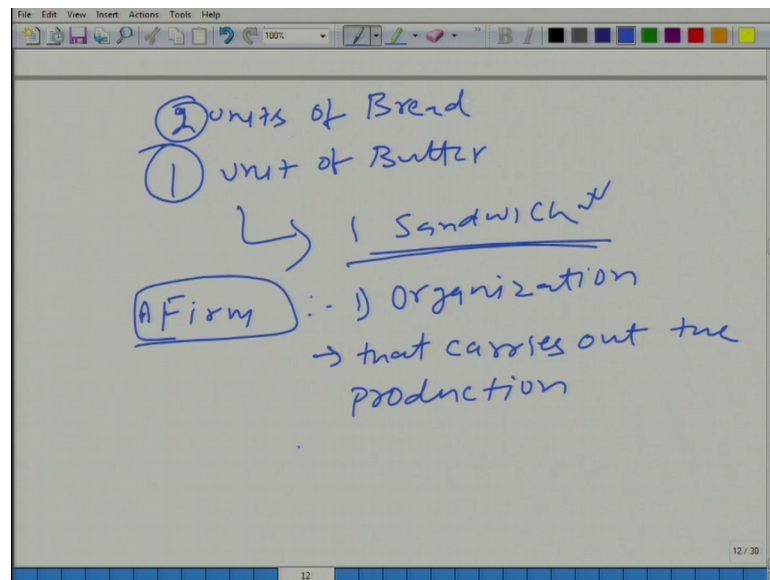
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The focus is going to be in this form that we have inputs some, something is happening here and then we are getting output ok. This, the black box. By the way you may have a different meaning of technology in your mind, but this black box in economics is called technology. This is technology basically which is transforming inputs into outputs or may be 1 output or various different outputs.

So, the technology is that black box. So, when I talk about technology, I am not talking about smelting process or agriculture or software production. I am just talking about the way that inputs can be combined and an output can be obtained. So, in a very general way, in a very abstract way we are going to talk about technology. And technology here is simply its transformation, transformation of inputs into an output or more than 1 output ok, its related to, its that is what technology is ok.

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Now, there are various ways to represent this technology and we are going to learn some of the ways to represent it; one I have already written here. If you look at it that output is a function of several inputs. So, in this case this function is the technology. Why I am calling it technology? Let us be clear about it, its not something quite its not very different, it is the same thing just the different use. What do we do? we take let us say for example, we have 1 2 units of bread and 1 unit of butter and then we get, we get a sandwich, one sandwich. This is what we get.

So, this is the production process and we can combine inputs only in a certain particular way to get some output. Its not like if we can bring anything and get anything out. These are constrained by nature, these are constrained by our available knowledge ok. So, nature is the, its technology is nothing, but nature, natures and mad main mad, I men made constraints on production ok.

So, the in that sense we are using the technology ok. So, one is of course, production function that we will use. Fine. We, I am starting with the simplest one, this is this is very very simple that is what we will use first and then we will get into the more difficult ones ok. Fine, but before we, just excuse me for a moment before we do that let us learn about firm also. What do we mean by firm, what is the firm?

Firm typically here of course, here the production process that I just talk about production of a sandwich; it can be achieved in a household also. At smaller scale crop

can be produced by one household. Software also can be written by one engineer in isolation, but if you look at the way the world is functioning what is happening, that large number of inputs are coming together ok, large number of people are also people as inputs are coming together and they are participating in the production process.

So, what is firm, what is a firm?

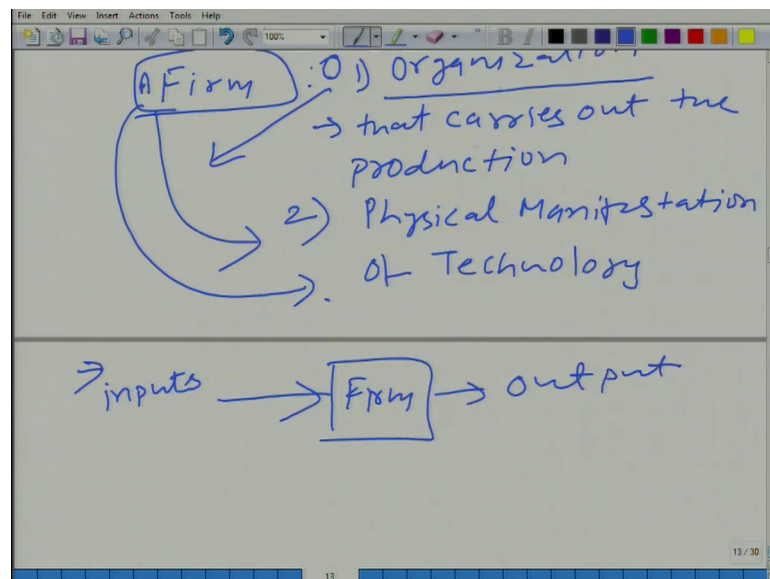
Student: Sir it is an organization.

An organization, let me just write the key word organization that effects the production.

Student: Production.

That effects the production or that carries out the, out the production; that is one way to think about a firm.

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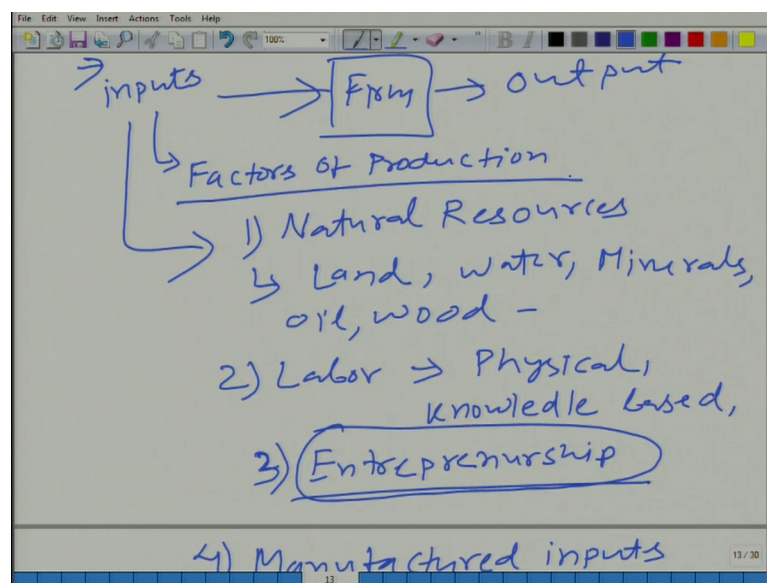


Any other way. Firm in a way is nothing, but the physical manifestation of, manifestation of technology. See here what you are looking at, how the firm is organized. This is, you are defining a firm based on its organization. Here you are defining firm based on its function. So, physical manifestation of technology. And of course, we can think of various other way. Again when you go into the organization, it can be hierarchical, it can be horizontal, it can be democratic, it can be, it depends on its function.

So, firm is organized in a different way. If that is a little more difficult topic to handle in the preliminary course ok. We will of course, if you study economics further you will learn about the firm as an organization, in a in a course called industrial organization. In this introductory course we are going to think about a firm as physical manifestation of technology, whenever we use firm its nothing, but collection of technology; that is being used to produce something to achieve certain goal. We have not talked about the goals yet, but you all know that typically the firms strive to maximize their profit.

So, that is the aim. So, that is the way we will take the firm ok. Fine. I am in that sense we will use the firm and basically you can say this black box is the firm and it is technology as we said, and we have inputs, again I am emphasizing it and here we have output.

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Now, can you name some different kind of inputs, not just the particular input the different classification of inputs that you can think of.

Student: Labor capital.

Labor capital that is a very traditional.

Student: Raw material; material raw materials.

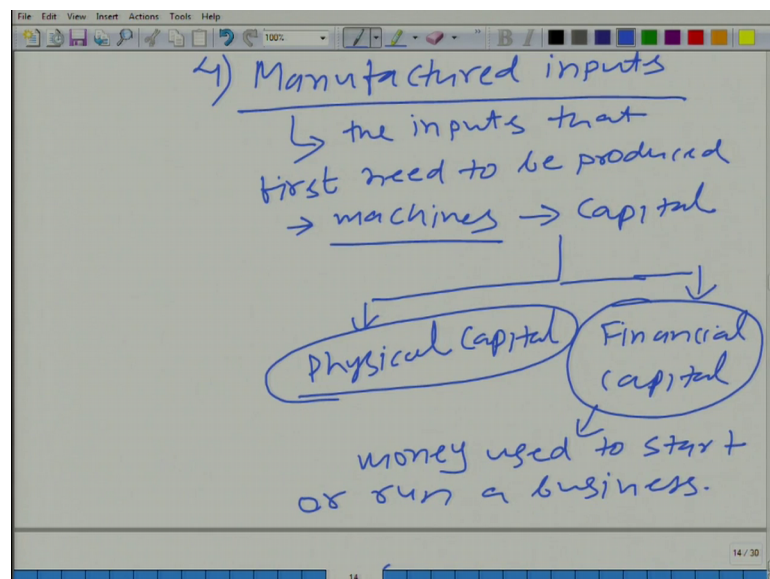
Huh. So, let us start with the raw material. So, rather than saying raw material we will say natural resources ok. Natural resources what we will have in the natural resources; land, it is not a raw material, but it is one of the natural resources that we use to produce; land, water, minerals, oil, wood. You can think of many more natural resources provided by nature typically.

The second as you mentioned is labor. Labor typically we can think the physical labor, someone is providing hard work, you know doing something that is physical labor or someone is providing knowledge; physical or knowledge based, physical let us put one more physical knowledge, and one can also bring the third kind of labor, but typically that some people keep it separate.

So, let me put here as 2 dash entrepreneurship ok. What is this? That this is entrepreneurship is basically that brings all the all the other inputs together to get certain outputs, but this is nothing, but a firm off you know some firm of labor

Student: Managers.

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Man managers are ok. So, let us put it 3. Now you talked about capital, I will put it here in the category of manufactured inputs and what are the manufactured inputs, the inputs.

Student: machines, technology.

Technology we are using in a completely different sense. Technology is not an input, at least the sense that we are using here. Technology is the transformation.

Student: It is a machine (Refer Time: 12:38).

Machine is manifestation of some technology, but again let me warn you when we use technology in economics, it has a particular meaning; that is what I was trying to define right in the beginning. The technology is something that combines all the inputs and produces output.

Student: Output.

So, technology is that black box, technology is that effecting the transformation ok. So, we will not put technology here, we are using it in a completely different sense. So, what we have here is, the inputs.

Student: Machines.

That first need to be produced, not generally available in nature ok, need to be produced and then we have that that is kind of and then and then it can be used in the production process, and what we have is, machines typically and other term that we used is capital, but I have deliberately separated it her., I did not put here capital I wrote manufactured inputs, because capital is sometime used in a sense.

Student: Monetary sense.

Physical capital that we have used here and sometime he used in the monetary or in the financial sense, financial capital, and financial capital is also, financial capital is also important to run.

Student: Business.

A firm, run a business and. In fact, it is in a way manufactured inputs, because someone is, someone has given value to the money, economy is based on you, in that sense it is also manufactured, but we should be able to distinguish between physical capital and financial capital. We can say it is financial capital is money, money used to start or run a business. Fine, that is clear. And these are of course, inputs are, we have another name for these inputs, what do we call these in all the inputs? Factors of

Student: Production.

Production, it just another name.