Economics of Health and HealthCare

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Lecture – 01
Introduction to Health Economics

Welcome to you all in these health economics course, today we will start with a basic introduction about health economics this course, as its it intends to address the students who are from economics who are also not from economics as the name suggests health economics is basically a marriage between Health Sciences and its economic implications. When I was doing my doctoral research, people asked me that what is my research area.

So and broadly, I used to say this is health economics and they were asking me that health economics what is that? I would like to take you through a 20-hour session where you will learn the nitty gritties about health economics in a broad way and I will like to mention that this course intends to benefit the students of economics of healthcare or allied subjects which connects the health and economics together.

Now, coming to the health economics, I will first talk about what is health according to the definition by World Health Organization. Health is a status of complete physical, mental and social well-being. Now, when I say complete physical, mental and social well-being everything connects to health and to be very specific their health status you ask me, how are you? I will say I am good, I am not so good, I am having fever or I was having fever.

So, whatever I am specifying about my health is basically health status, when I talk about health status then somebody asks me okay, if you are not well did you consult a doctor or have you taken a medicine, this health status now I linked it to healthcare service or my demand that way that I intend to go to a doctor or I casually leave it. When I talk about my caffeine problem they may ask, do you smoke cigarettes that is my behavioural problem, my demand.

Again, so the health status; health connects to the health status, health status connects to the service and demand for health or health care, so health economics is basically connected to healthcare economics. Many often we come across the health economics as synonymous as economics of health care or healthcare economics therefore, now after giving a broad definition about health or health economics, I will go back to this economics little bit.

And try to introduce the economics for which whom those who are not coming from economics background. Why do we study economics, I asked my students those who are not from economics background, they say it is the study of money, finance, these, that. Let me say economics is not actually accountancy.

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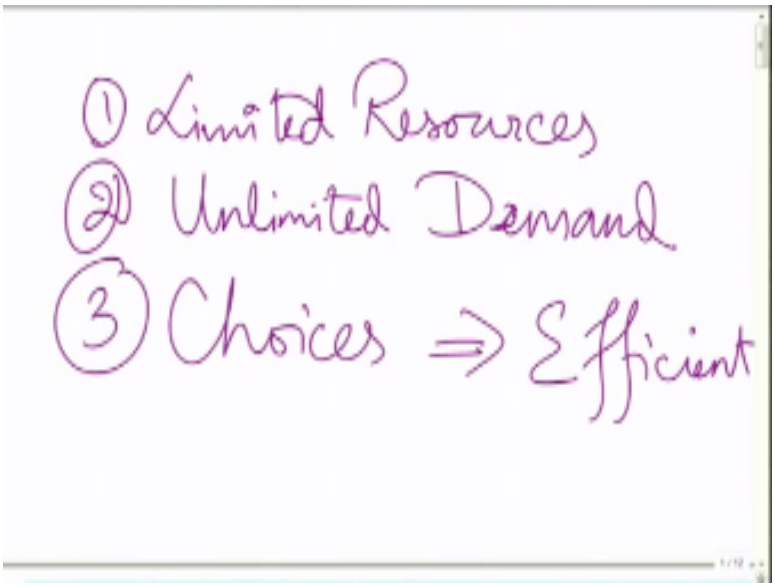

Economics we study primarily when we have 1; limited resources and 2; unlimited demand, I mean we have enormous demand in our life but we have limited resources, I want to live 150 years but I have limited resources, I want to be healthy every day but I have limited resources in terms of be it pollution, be it availability of doctors, be it the medical facilities otherwise be it my food habit, so everything has a limitation also finally, comes to my budget constraint.

So, even if I have an unlimited demand, I also have limited resources to meet that demand because it is not only me, there are millions and billions of people who have enormous demand and that particular resources which is limited in nature are you know you are serving those infinity amount of demand therefore, we need to have choices that given those limited resources or scarcity how best I can maximize my demand or maximize my satisfaction based on my demand.

I have to choose between different resources, which are possible given my constraints, my budget constraints, my time constraint, my cost constraints, my production constraints, we will talk about more about these constraints when we go along and we also have to choose in a way that makes my choices efficient, which makes my choices efficient, so that I can say that I have gained the most given the scarcity or the current limited circumstances.

Therefore, when I talked about these 3 aspects that limited resources and unlimited demand given and I will like to maximize my efficiency given the choices, so in economics would; we would like to bring them down in 4 basic aspects.

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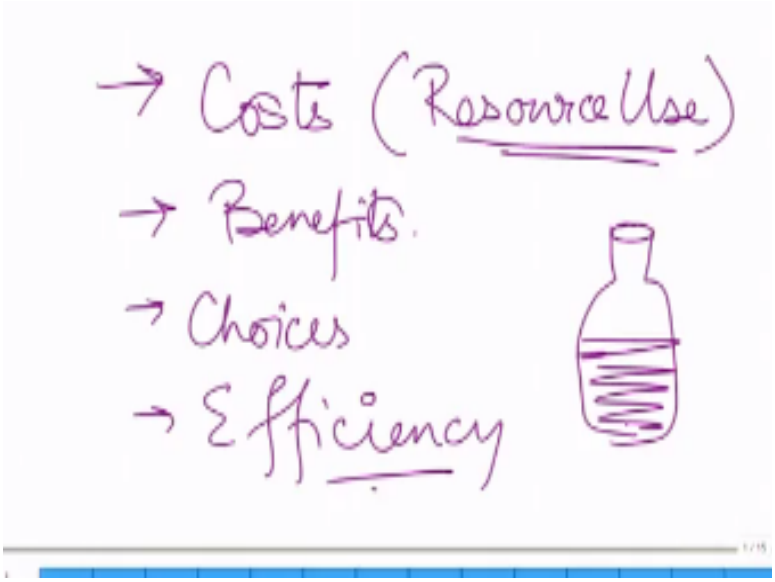

So, the first one is costs; every activity we do it has some cost, it can be monetary cost, it can be non-monetary cost and the cost is in terms of here we say in broad, resource use. Every resource we use it has some costs associated with this, we pay monetarily or we do not pay monetarily, there can be like say an example of non-monetary cost can be time cost, for an example I go to a doctor and I pay the fees to the doctor that is my monetary cost.

My non-monetary cost is because I am going to the doctor I am not going to work maybe for that day, right or I am spending some time, even if I am paid for taking leave, so it does not, you know culminate to my; does not have an implication to my monetary cost or monetary loss but at the same time, I am losing my time which could be utilized in some you know, some other way which could be productive.

I am being assisted by my family members, they could; could not work or they could not do anything else which could be productive otherwise, if I am not going to visit a doctor eventually, in a country like India or any lesser developing; developed countries, we see that there is a high cost associated for the poor underprivileged villagers who stay in remote areas have to come to our urban cities to; to visit a hospital or our health care provider.

They are not mostly, they are daily wage earners or their income comes from their daily activities, so they are losing their income, their family members are losing their income and their time cost, they are travel cost even if they do not pay or they pay, so the cost is in terms of

resource use, it can be monetary as well as non-monetary, when we study about health economics, it also discusses about the payment mechanisms.

And who pays for that in several countries, I will take an example of say UK, where the health financing is basically, done by the Government through taxes, we can talk about USA where the health financing is mostly private in nature, the health care providers are private, the people who are visiting a doctor or a health care, they are paying either from their insurance or from their pocket so because, they are private.

Next and let us take an example of Canada, in Canada, some part is provided through taxes by the Government in some cases, the doctors or the healthcare providers are paid by insurance companies. In India, it is very mixed in nature in India, as the health care providers are very mixed or diverse in nature, we have quacks who give, who you know put some powder even if there is a snakebite, there are quacks.

There is Government doctors, there is private doctors who serves village peoples, there are private doctors who charges high solving this or consulting in tertiary care super speciality hospital, so the nature of our health care system in India is very diverse and very sparsely distributed therefore, our health care or our health care behaviour is highly determined by the doctors or the health care providers, hospitals, private or public where they are located, what kind of problem, I have whether, I am paying from my pocket which is mostly the case in India.

Or in any lesser developed countries as well as whether I am paying from my insurance or my insurance pays for me or I am being paid through some schemes you know because I am a central Government employee or I am associated with some Government scheme being a below poverty level cardholder; BPL card holder. So, my health care; health seeking behaviour is determined based on who pays for my health care and what is the payment mechanism.

And the costs associated because I am meeting that cost based on this healthcare payment mechanism is all directly connected with that. The next is the benefits what I get. I estimate the benefits against the costs I mean, what I am gaining visiting a doctor, what I am gaining by my health care behaviour or healthy behaviour, I smoke a cigarette what I am gaining or what I am losing and after I have some lung infection, I go to a doctor, what I am gaining and what I am losing.

Because I pay for the cigarette here and later I pay for the doctor in which way I want to seek my; you know satisfaction or which way I find more benefits against my payments be it in cigarette, be it on towards the doctor or my you know, my treatment processes. The next is the

choices I make. Now, here as I said that based on the cost, it comes, I look at the benefit that whether I pay for this or a pay for that and what kind of benefits I am getting best you know in comparison to the costs and pay I am incurred; incurring in different aspects.

So, I am; I have choices, right, I have different choices and I have to choose the best one and when I talk about the efficiency, I will choose the one which gives me the highest efficiency and efficiency is very relative, I can gain satisfaction by smoking a cigarette, you can say that sir smoke causes cancer, do not smoke and you gain benefit by not smoking cigarette, so it is very individual level.

Therefore, again when I go back to the choices, I make my choices based on how much payment I am making for a particular decision be it healthy or unhealthy, be or what kind of choices I make that I want to go to a homeopathic doctor or an allopathic doctor, maybe the homeopathy will take me longer time or an allopathy doctor maybe it takes a longer time but I do not have to go for a surgery for allopathy, maybe I am paying more, I am going for a surgery causes me pain.

But at the same time, my treatment is faster, so you have got several choices and you have to see which is the most efficient for you maybe a surgery is not recommended for an elderly person, so they can choose for an allopathic or homeopathic treatment, they can, I am not saying that is the best or that is the worst. At the same time for me, I need to join a Hospital, I mean join my job, I cannot stay at home, if I have you know twisted my leg.

And then, I cannot choose a health care process, which takes longer time now, so again I am deciding about which is my choice and what is the implication in terms of my benefits and the benefits are very again subjective in nature, my benefit may not be similar to your benefit therefore, my choices may not be similar or are not similar to your choices. Therefore, when I see a half bottle, half-filled bottle and then I say, if I am a pessimist, I will say that this is this bottle is half-empty.

If I am an optimist, I will say that this bottle is half-full, if I am an economist, I will say this an inefficient choice because you cannot afford to keep this bottle half-empty, you are not making the best of your choices.

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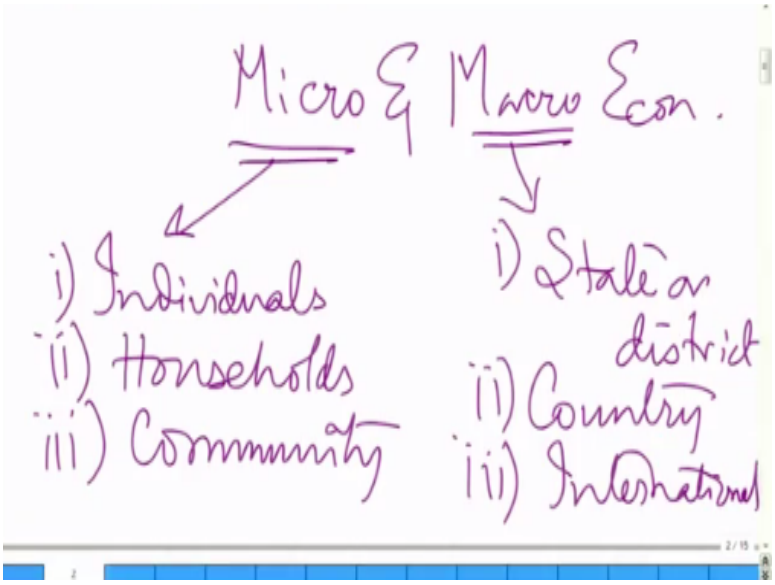

Now, I will introduce 2 concepts; micro and macroeconomics; micro and macroeconomics. What is the difference between micro and macroeconomics? Microeconomics, as the name says it is small, micro means small, is not it, so when I talk about microeconomics, it talks about individuals, any human being individual, a singular sense, 2; households or the families you know, we generally, in research terms in social sciences, we call households mostly.

I do not say, I am saying that family is the wrong term or non-scientific term but generally, it is known as households, so households again is a unit as a you know, is a unit which takes economic decision which takes the healthcare decision and then they can relate it at the household level as a small unit and third; if it is a community, you know community as a unit, a small communities or small unit, where there is a homogeneity in terms of the health seeking behaviour or healthcare provision or put the supply and demand side effect together or separately.

On the other hand, when I talk about macroeconomics; macro is a large concept, so you can say it as a state or district; is a state or district, it can be a country or it can be an international perspective across countries yeah, so that means whenever some economic decisions, the economic; the relationships between economic variables, economic theories are encompassing different countries, state at the larger context, then it is macroeconomics.

When it talks about the small; smaller context at an individual level at a household level or a small community level, it talks about microeconomics and that expanse of these microeconomics and macroeconomics are very different you know, so whenever we are talking about a policy, a Government's decision about how much to pay in a Health budget or an international NGO, you know spending say a World Bank or Asian Development Bank or some

international NGOs right, BMG, how much they are paying for a particular health cause, for a particular country their investment.

It is all are the macroeconomic variables or macroeconomic decisions and in terms of my health, my expenditure towards my treatment seeking say, how much I paid during a particular year for myself or for my family or household or what is the; you know health insurance mechanism at a community level or a community financing mechanism, we can talk these under micro economic theories.

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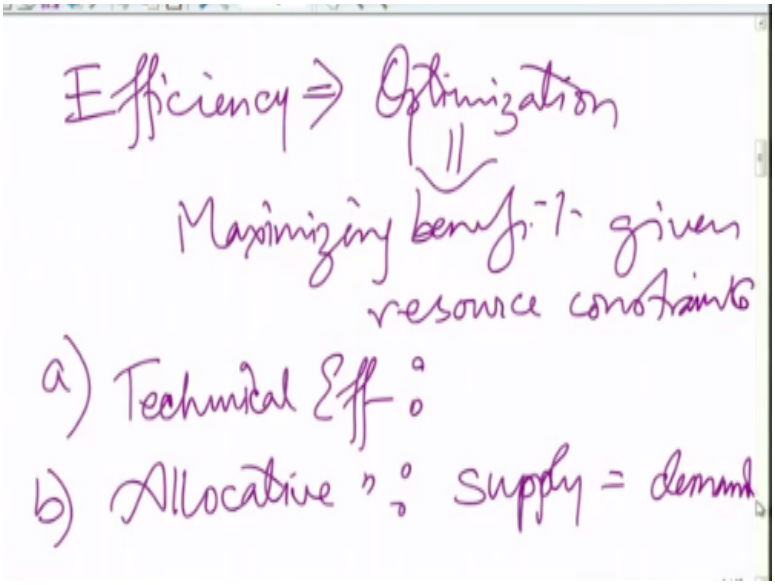

Now, when I talk about efficiency; efficiency is when I talk about efficiency; efficiency is basically, an optimization concept. When I talk about optimization, here in these healthcare economics, we talk basically about maximizing benefit; maximizing benefit given resource constraints; maximizing benefit given resource constraints therefore, when I talk about this maximizing benefit given my resource constraint, we can deliver to this topic 2 ways.

One is technical efficiency, another one is allocative efficiency; technical efficiency and allocative efficiency. Now, what is technical efficiency, it is like meeting a given objective that you have an objective, you want to achieve that objective given cost or cost constraints or certain budget, you know to attain say, let us take a production or the level of immunization that I want to complete immunization for children < 5 years of age; all 5 years of age children should be; should have complete immunization against certain listed diseases.

To attain that objective, if I can utilize my resources in the best possible manner, so that I can limit or keep my cost lowest or least, then I achieve my technical efficiency, so my resources; it can be capital, it can be labour, I mean, it can be human resources, it can be non-human

resources and this cost implications, so if I can deliver the best in terms of healthcare, health status, health achievement given my budget constraint; cost constraints, then I am achieving our technical efficiency.

Whereas, in terms of allocative efficiency, we look at the dynamics where supply = demand that is, when I as a service or as a Government or a policymaker can ensure that the supply of healthcare providers, the number of primary health centres, the number of doctors per 1000 population, the number of nurses per 1000 population, the number of births per 1000 population, I am meeting that demand based on the you know, with my supply yeah.

So and that can vary, maybe in Calcutta, where Dengue is very high nowadays, whether I am; I am achieving the level of supply of doctors or the you know, the requirements based needed to these Dengue treatment, I am meeting that requirement or not given the higher prevalence rate, higher percentage of Dengue cases or incidence rate of that is the new cases in a particular year of Dengue in a particular locality in or a city or a state, whether I am achieving that.

So, then I am meeting a supply = demand, may be Dengue is not the case in Gujarat, there is a higher proportion of diabetes at the same time, I will look at whether in Gujarat, the requirement for the diabetes treatment is being delivered based on this you know, the requirement of this of the general population based on the prevalence rate or the percentage of diabetic population in that particular state during a particular time period.

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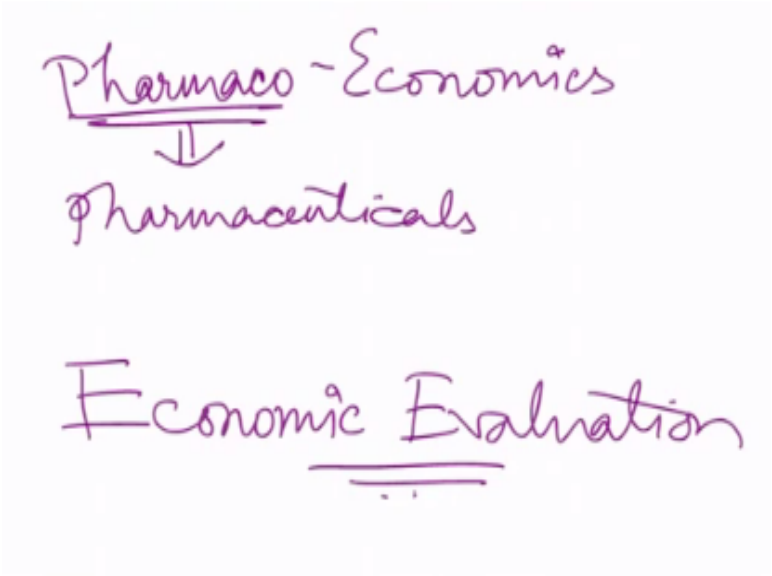

Now, health economics basically, talk about I come back again to health economics, you know it also encompasses pharmaco economics; pharmaco economics, they are not very different than health economics, pharmaco is the pharmaceuticals yes, so this is the economics which

talks about the drug therapies of the; you know the consumption of a particular medicine for a particular disease, its effectiveness, the cost of that particular medicine.

And how best it is reducing that particular disease prevalence know, how effective is that therefore, when I am talking about this effectiveness, this pharmaco economics and healthcare economics mostly, talk about or largely talk about economic evaluation. We will talk about this economic evaluation for a couple of hours later during our course and this economic evaluation is the most sought for concepts from the health economists.

So, what is evaluation? I want to evaluate something right, what do I evaluate, I evaluate a particular implementation, it can be when evaluation is; we know that when I write an exam after say 1 year of a course or 2 years of a course when I write an exam, my teachers are evaluating me right, not me basically, my learning. Similarly, so learning is my outcome here which my teachers have delivered to me.

And I am trying to understand what has been the effectiveness of that learning process on me, I do better or I do bad that is subjective that is again, you know varies from person to person, their efforts and many other things. In healthcare, the evaluation we do generally, of a particular treatment or a treatment mechanism of a medicine of or of some implementation I give some vaccinations, I give some immunization technique, I deliver some awareness campaigns.

And its evaluation on the health status of that individual, of the household or of that community as a whole therefore, in economics; economic evaluation in health care we basically, try to understand that how effective a particular treatment process, a particular medicine has been for a particular target population.

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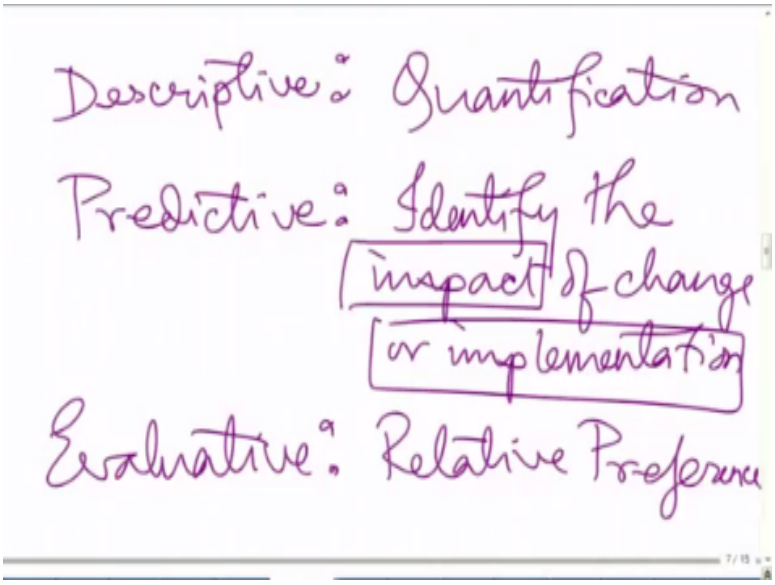

In a nutshell, in health economics, when I talk about descriptive health economics as economics by large has remained a quantitative on numerical subject as a descriptive health economics, I keep it quantification of a particular phenomena, quantification of my health seeking behaviour that how many times I go to a doctor depending my affordability, quantification of a particular disease, quantification of a particular medicines, effectiveness on that particular disease, quantification of how much I pay or how much I lose, how much I pay for the treatment, how much I lose because I have the disease.

I; with respect to I take the treatment or I do not take the treatment, at the same time how do I pay whether I have a health insurance then, what is the premium if I; my Government is paying for me through taxes, then how much they are paying, what is the percentage of GDP they are paying, so these are the basic health economic variables, which I try to quantify and give them a number to describe the scenario of a particular population.

When I talk about predictive that means, I am predicting something, I am predicting something that what happens yeah, so when I am predicting something, I am actually identifying the impact of a change or implementation that means, how much change or how much impact a particular change in decision or a particular change in treatment process, a particular change in medicine, a particular change in health financing mechanism has brought in.

So, the impact of change or a particular implementation, so this implementation is my determining variable, my independent variable and the impact is the dependent variable, so if you have a knowledge about regression, so here we are trying to understand the impact on the dependent variable based on some changes in the independent variable and how much that impact is or how much the impact can be in different circumstances.

And finally, evaluative; here, comes the evaluation again so, when we are talking about evaluative, we are doing an economic evaluation of several healthcare processes that means, what is the effectiveness of process A, what is the effectiveness of process B, what is the effectiveness of process C along many others, I am; I have some cost implications for process A, B, C and others.

And I have varied gains from A, B, C and others now, it is my choice based on my preferences, based on my affordability, on my conditions that which would be my best choice; A, B, C or D therefore, evaluative says the relative preferences at least, they help us to make a relative preference. So, when we try to map a demand for health based on Grossman, I will have an extended session on Grossman's model of healthcare demand.

We basically, try to understand here the healthcare as the healthy days or a health stock, how much, how many days I stay healthy that is my health stock, right. If I am staying longer time period as healthy, then my health stock is you know, strong, larger that accumulates further that I will be staying healthier; healthy for a longer duration of time for the later period of my life.

Therefore, this health stock is basically determined by several health factors, it can be health care, how best healthcare I am enjoying or I have enjoyed probably, since my mother's pregnancy with me from their our health cure during her pregnancy my child; my birth and my; you know my health as a child because that has a strong impact on my health as an adult.

And my health seeking behaviour or my healthy behaviour starting from diet, the exercise, the environment, the income, the awareness, these all the; are very prominent determining factors which affect your health stock based on some production process.

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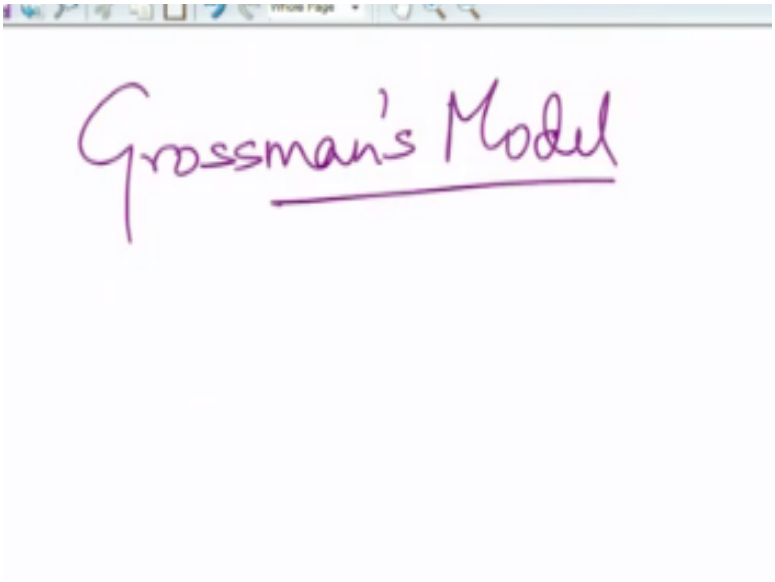

This is basically the Grossman's model; I am just giving you the name here, Grossman's model, thank you.