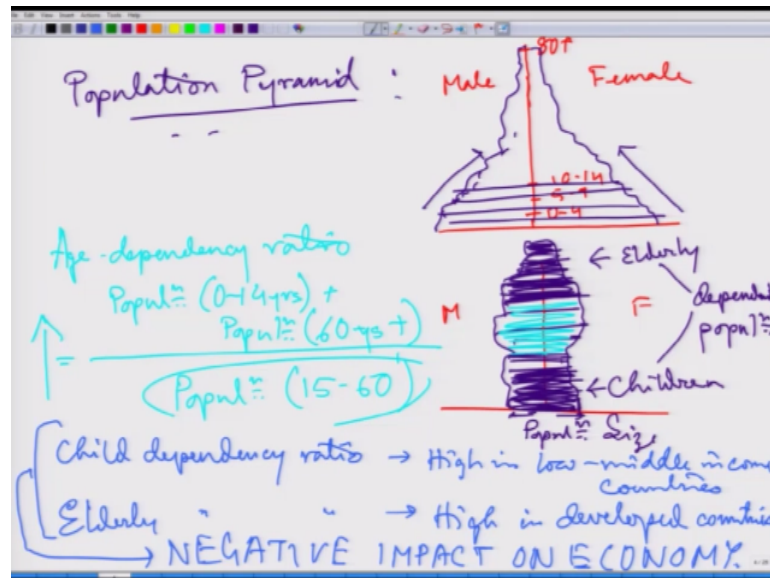


Economics of Health and Healthcare
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Lecture - 49
Population Composition and Demographic Dividend

But this age-sex compositions are generally represent by a population pyramid.

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This population pyramid gives us an idea about the you know these are all 5-year age groups 0 to 4, 5 to 9, 10 to 14 and maybe here 80+ yes and then on the right we have on the right always females are right, so on the right we have female, on the left we have male and then we have say this is a population pyramid. This is a population pyramid of a developing country.

Why? There is a large number of young people, a high birth rate right. If we kind of try to see what is the population of a developed country say for Japan, the population pyramid will be something like this you know, something like this a population pyramid. So that means that you know the birth rate you see is very low for the males and for the females as well. Here these are different age groups 0 to 4, 5 to 9, 10 to 14, 15 to 19 and so on till 85+ maybe.

And then this is the population size over here, this side females, this side males and then we see that you know those who are taking birth here they are dying right, over here nobody is

dying, so here there is a high you know it is getting short, squeezed and then sharp, a flat so that means that there is a lot of death in this young days but here nobody dies in the young days, so you can see you know it is not really looking like a typical pyramid what we expect.

So and this changing its structure is again both way related to socio-economic conditions. The socio-economic conditions lead to the change in birth and death and then the birth and death leads to the change in population size and the population size leads to the again development and thus an impact on the socio-economic condition of that particular society or the population.

Now once we see that here we can clearly earmark maybe you know 3 groups, one can be this group, one can be this group. So this is like elderly people, if this is our children then these are our dependent population right. Both elderly and children they are our dependent population is not it? Yes, and this is the working class.

This is the working class people, so we can estimate an age dependency ratio as population age at 0 to 14 years+population you can keep it 60 and above or 65 and above 60 years+/working population age. Population aged 15 to 60 years, I will say yeah more than 60 years, 60 years plus and 15 to 60 years. So this gives an idea about the age dependency ratio. You know the more the dependency is one thing is that the country has to pay you know the larger section of the GDP goes to the Social Security yes.

That is primarily because you know they need to support these young children as well as their education, their health, immunization so and on so forth. Similarly, the elderly people they do not have work now. They have a lot of filler medical expenses; they have to be supported or if you know they are being supported by their families that means a family's large income is not being invested or being you know either being invested or being you know utilized in a productive manner.

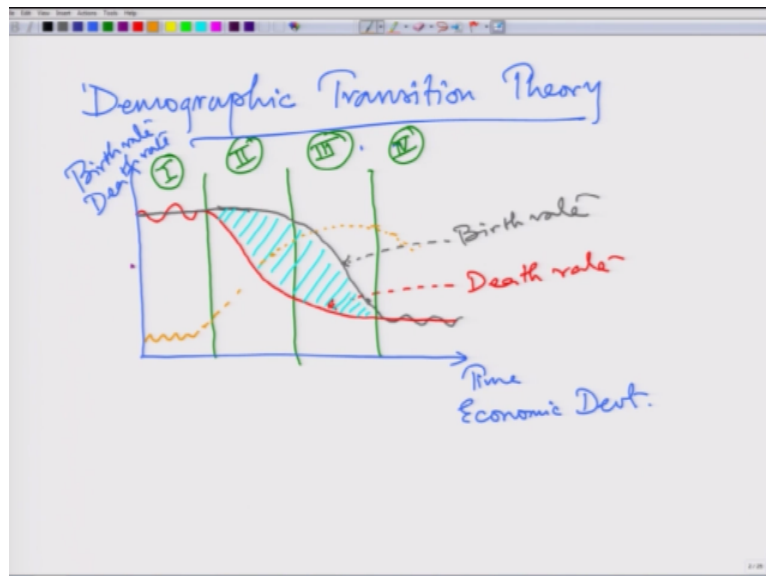
But they are actually supporting the elderly individuals in their home, so that means it is not coming back to the economy in a positive manner yeah. So it is not a good sign or healthy sign of a society, so that means the society is still in a developing phase or underdeveloped. In a developed country, you know again you are not very developed into this scenario but in

countries where you know the population 15 to 60 years and you know this ratio is not very high that means they are going to be economically stable.

What happens in countries like Japan and all? This age dependency ratio again is high but that is not basically you know there are two instances as one I say the child dependency ratio and elderly dependency ratio. Child dependency ratio is high in low and middle income countries. Elderly dependent ratio is high in developed countries because of the lower birth rate and you know not many people are actually substituting the working population.

So there is a dearth of working population and then the people are living for a long time. So that means those who are taking birth even if that proportion is small, the number is small, they are living you know they are living beyond their 60 years and then there is an elderly support which is very critically needed and very large in nature. Therefore, you know but these two has a negative impact on the economy right. Both of these have a negative impact on the economy.

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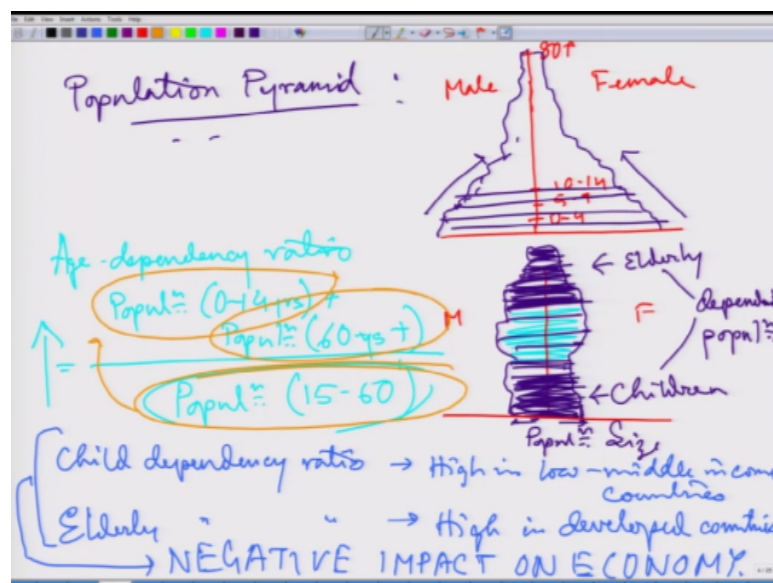


So what happens when I come here or maybe the previous graph you know if I can show the consumption chart say I am showing the consumption chart, so what happens over here? The consumption chart is pretty low right because you know the people do not have many choices, the desire is low you know and there is no formal market economy, so people just exchange things and then with not much possession.

That exchange also is not very possible at a high level and on top of that when this you know at this primitive societies, there is again no formal economy, no formal market and that is where the consumption level is also very low yeah and then it goes very, very high and then you know it starts increasing and then it may increase and it may eventually fall. The same thing happens with the total population you know.

The population number increases and then falls, so anyways that is shown by over here and then it falls but this is the consumption you know the level of consumption, the market economy anyways.

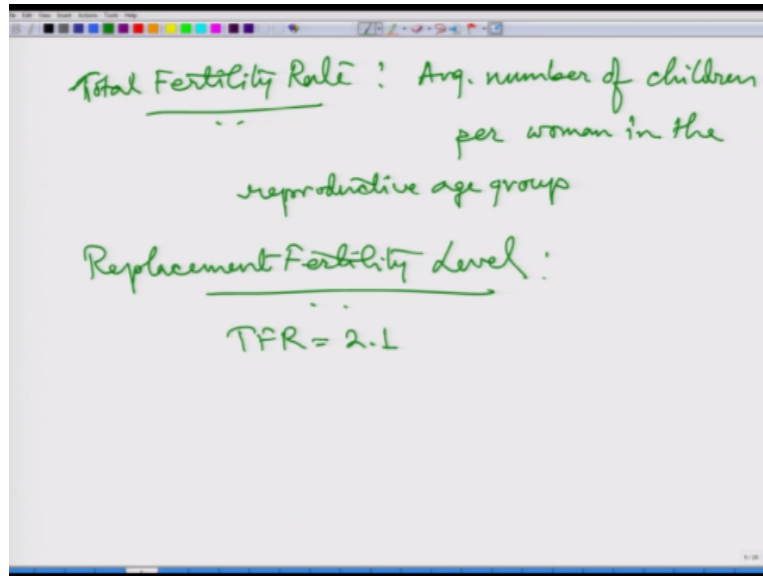
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So for these particular populations both if this is high the level of consumption both at the micro level and the macro level is high. Similarly, if this population here is high again the consumption is high and then the production you know which is coming from this population is low because if this population is low and these populations are high, then you know a larger share of these populations income is going to feed these people.

So which is not really desired, so there should be a proper balance. So if there should be a proper balance that is basically we can explain it in terms of total fertility rate.

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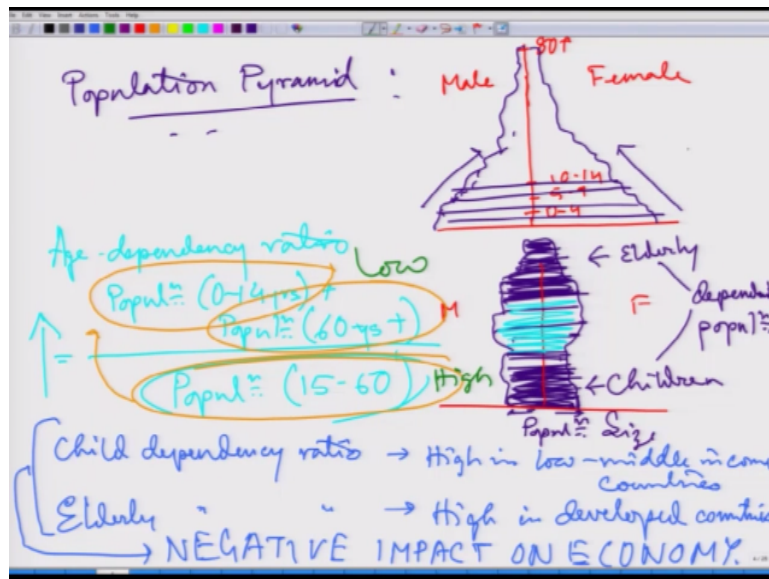
I am not telling you the you know the definitions of different fertility or mortality measurements but this total fertility rate says that you know in a simplistic form nothing, nothing in a very simple form it says that or the average number of children it is not this simple yeah, average number of children per mother alright or per woman of a particular age yeah, it is generally of a reproductive age.

I will just mention that per woman in the reproductive age group and then it is like if they do not die during their reproductive age group, they follow a same fertility and mortality rate chart, specific fertility rate and all this assumptions are there but this is the average number of children per woman in a you know reproductive age group and we also have a concept of replacement fertility level.

That is when one you know the one couple has two children and those two children are replacing their mother and this replacement fertility level is known as when TFR is 2.1, total fertility rate is 2.1. Why 2.1 why not exactly 2? This 0.1 is basically not everybody marries or not everybody can get a child right or you know sometimes maybe the children are dying, so all these things.

So this 0.1 is that extra but once they reach this 2.1 level, so the economy has developed, so this child mortality rate and infant mortality rate goes down. So this 0.1 is basically for those who do not marry or do not have children or something like that anyways.

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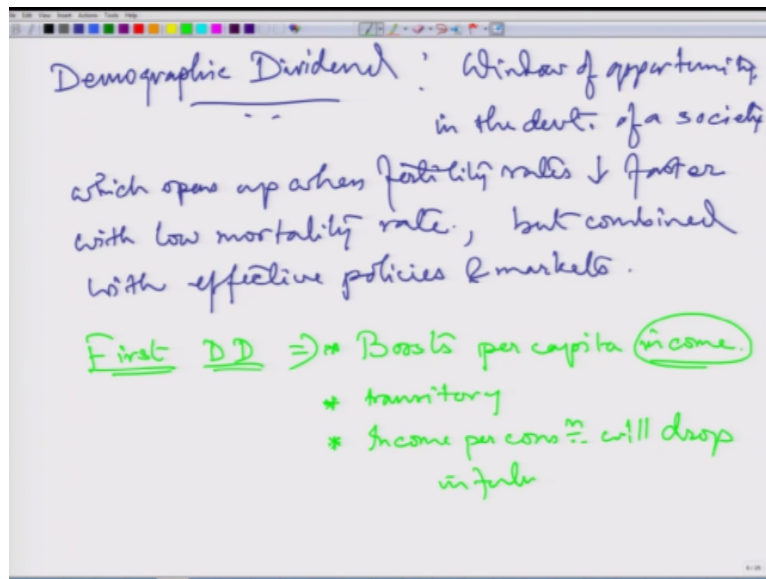


So now having given you this idea or maybe the previous idea how this negative income impact on the economy takes place because of these dependency ratios you know, child dependency ratio or elderly dependency ratio. You can multiply or you know it can be out of total population and percentage in terms of percentage that elderly dependent percentage you know in terms of rate and all, rate of elderly population.

Anyways, so this kind of you know the impact of its age-sex composition on a particular economy can eventually be very, very helpful if our country has a high number of working age population right because if there is a high number of working age population then this population is high and then this dependents are low, so the country will you know improve economically and that is primarily.

Because a lot of income is being generated and not much consumption towards you know unproductive consumption towards supporting children and elderlies but this is a transition phase between a very low development and very high development phase.

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This is known as demographic dividend. Demographic dividend, so it is a window of opportunity in a society or in the development of a society which opens up when fertility rates decline fast, faster and fertility rates decline faster and already you know you have the economically able population with low mortality rate but combined with effective policies and markets.

See in India, we say that there is a lot of (()) (14:25) policies and markets. We say that we are enjoying the demographic dividend but we are not that is because we have seen that in our kind of research that we have seen that even if the number of working population is growing but their employability is not high and even if the you know the education is increasing but the kind of economy we have we are moving towards a kind of service sector oriented economy.

And then you know if we really do not train them towards the you know towards the higher technical degrees then it really does not make much sense because you know we are not capturing the economic boom and then at the same time if we are not actually you know making a growth in manufacturing sector than those who are not because again it is because of the heterogeneity in the society.

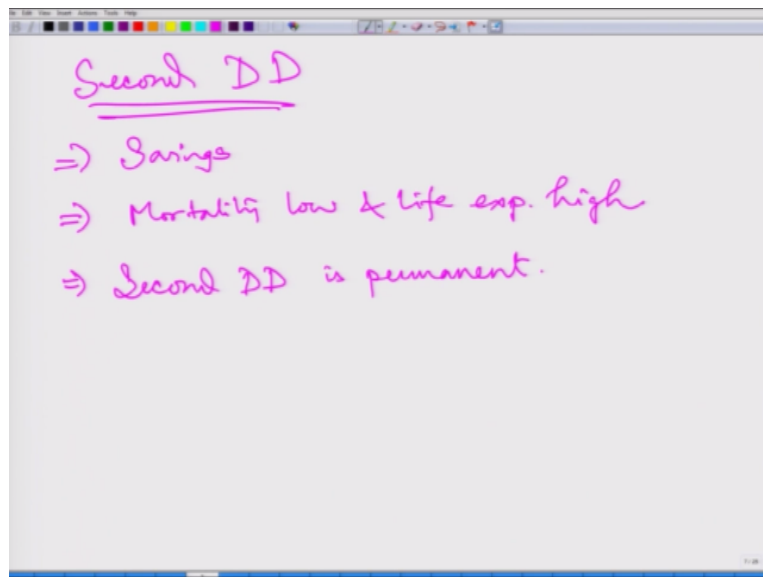
This higher education has not really penetrated among the most of the section of the society and then they are being simulated, they do not really find a lucrative job in this you know service sector oriented growth and that is where you know and then the quality of education is also remained poor. So even if we know we have our demographic advantage but our

education or health policies or you know the excludability has nearly not helped us to reap the benefit of a demographic dividend yeah.

So in demographic dividend, we have 2 stages, the first demographic dividend is, the first stage of demographic dividend, I will just write it like this here to save time. So the first demographic dividend is when it boosts because of this you know faster decline in fertility as compared to mortality, being a little down, it boosts the per-capita income or the economy yes but it is transitory, it is temporary.

Because you know with the development you know we will move further and then this natural growth will not be there, again the fertility rate will come down, so our demographic development will no more be there. So this is a transitory period and you know and then what happens if the income per consumption because now when we have here income per consumption is high at this period, income per consumption is high.

But income per consumption will drop in future and that is a concern right,
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So to make amend for that concern we have second demographic dividend. This second demographic dividend talks about savings yes. Why savings is required? Because the mortality is low, life expectancy high, so people will live longer time and it is better that they save for their own future, own elderly period and because if they are saving you know they will keep the money, invest the money which again this financial institutions or the government can reinvest in a productive way.

So in that way and then if we can actually utilize this second demographic dividend properly, then the second demographic dividend is permanent because with this high savings rate and all we have you know higher asset per income, per consumer as well as you know this investment and reinvestment and this cycle keeps getting the oil and then keep moving.

And therefore we should have an accumulated savings or you know accumulated savings or assets and it also depends the kind of you know family transfer a particular household has or the kind of pension they get, that also determines their savings habit you know the kind of again family transfer like from their children and all or their ancestral properties so and it all determines the habit of savings you know the behavior towards savings.

And that together will determine that how effective that second demographic dividend or the demographic dividend overall will be working or not because and this working towards you know planning towards second demographic dividend should start when people are working.
Thank you.