Economic Growth and Development

Dr. Rajshree Bedamatta
Department of Humanities & Social Sciences
Indian Institute of Science, Guwahati

Lecture – 12
Growth and Inequality

Hello and welcome to lecture 12 of the NPTEL MOOCs course on Economic Growth and Development. Today's class we will discuss some of the concerns with respect to growth and inequality. Inequality is an important characteristic of today's world, particularly in the post globalization era where GDP per capita or the incomes of individuals of different countries across the world have grown at an unprecedented rate.

An important common characteristic of almost all the countries of today's world is that inequality has also grown at an unprecedented rate; which means that there is a concentration of income in the hands of a few in countries across the world. And therefore, this demands that we have a short discussion with regard to inequality and growth as a part of a course on economic growth and development.

Now, let me tell you that there are various conceptions of how inequality can be measured. And as a result of which the different measures of inequality. When we come to the part of human development when we are trying to look at inequality adjusted human development index, we will look at some of the measures of inequality that are commonly used in the literature on growth and development. However, in today's class we will see what is the significance of looking at inequality in the context of growth and development.

There are generally 2 ways of looking at the concept of inequality the significance of the concept of inequality. One is that inequality is important at an intrinsic level. And the other is that inequality is important at a functional level. So, there are certain economic reasons why measurements of inequalities important. There are certain economic reasons why inequality must be an important feature of most of the studies pertaining to growth and development.

In the second part of his lecture, I will discuss in detail very influential paper by the economist named Branko Milanovic; whose research has revolved around the concept of

global inequality. And we will look at this paper primarily for 2 reasons. One reason is philosophical and also political; where the inequality across different countries drives economic policies across the world, which are highly political in nature. And the second is to look at where we stand in terms of formulation of inequality today. What is the focus of discussion today in the post globalized era with respect to global inequality?

So, begin with this class. As I said there are primarily 2 reasons or being concerned with inequality. The first reason is at an intrinsic level. Ethically, it is an important question to answer as to why some people are so rich and some people are so poor and. It invariably always puts us in an ethical dilemma as to whether a certain levels of inequality are bearable or not in a given society.

So, in a given society in a given economy, if there a large numbers of people who do not have access to basic standards of living; while a very few or a concentrated few have access to basic have access to luxurious goods and services. Then it becomes an ethical question as to what happens to the welfare of that society, or what is the level of welfare of all individuals within that society.

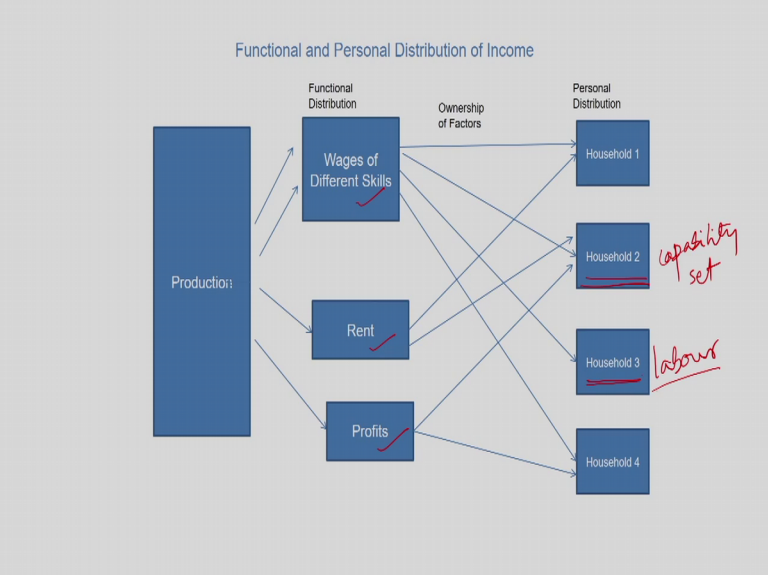
And the other is a functional consideration or consideration of inequality at the functional level; which is to say that what happens to the economic correlates, or what is the economic significance of such an unequal society. If you recall some of the discussions that we had when we were doing to growth models, you will remember that in a society in an economy, we are largely concerned with the rate of capital formation, we are concerned with the rate of savings in an economy.

Now rate of savings or rate of capital formation in an economy will take place only when all the individuals or large share of individuals in an economy or a part of the productive sector.

But if in a society the levels of inequality is very high, which means that there is a very large number of population, there is a large proportion of population, that do not that does not have access to v. Let us say the banking system, then they will not have access to credit. And if you do not have access to credit, then the savings ratio in the country will suffer. And the savings ratio suffers, when it is general understanding that the capital formation in the economy suffers. So, it is economically it is very important that the levels of inequality be adequately dealt with in an economy.

Now, there is also a literature which tells us that at any given point of time in equality cannot completely go away there. There will be always some tolerable levels of inequality, which will exist in an economy. However, this tolerable level of inequality is important for the concept of economic growth.

(Refer Slide Time: 05:55)



Now let us look at this figure here; which will tell us the difference between functional distribution of income and the personal distribution of income, and also why it is important for us to look at personal distribution of income.

Now remember that when we are looking at GDP growth rates or we are looking at per capita income growth within a country or across countries, we are basically looking at how much disposable income is there in the hands of individuals or households within a country. But it is equally important to know, what are the sources of these incomes gained by the households.

Or in other words, where do these households gain their incomes from. Now you may say that it will suffice to look at only the personal distributions of income, why look at the functional distributions of income or while look at the sources of incomes. Now it is important to look at the sources of incomes of the household, because that is at the heart of how inequalities determined within country.

Now look at this figure here. You can read this figure from left to right. The first set of arrows here, the first set of arrows here, they describe how income is generated from the production process and we know that it is generated in varied forms. So, production involves labor for which wages are paid, it involves the use of land or capital equipment for which rents are paid it generates profits which are paid out as well. So, production involves payments for various labor here as well as the non-labor inputs of production here.

So, in the ultimate analysis we are basically trying to look at incomes that are generated and can be classified under payments to labor of different skills here rents and profit. And this distribution of income here can be referred to as the functional distribution of income. And if you recall our class from the very first lecture of this course in which we dealt with some of the economic concepts the very basics of national income accounting, you would remember that we were referring to this concept of GDP at factor cost. Where we were largely concerned with what is a distributive shares of income within an economy.

In other words, in the total national income produced in a produced, or the production of goods and services, how much accrues different factors of production, and that is precisely what we are referring to as functional distribution of income, how much of this production here goes in the form of wages to different categories of labor skilled, semi-skilled and unskilled, how much of this production goes to goes in the form of rent accruing on land or different capital equipment's rented by the forms in the economy, and how much of this production accrues in the form of profits. So, this is what is referred to as the functional distribution of income.

Now, this functional distribution of income then gets channelized to the various households within the economy. So, let us say that there are 4 household's here. The second set of arrows here; they tell us how different categories of income are channelize to the households. The direction and magnitude of these flows depend on who owns which factors of production and how much of these factors.

So, households for example, if you look at this household number 3 here, and the arrow coming from this box wages of different skills, you would see that this household tree

source of income is only wages. Which means that the household tree only has labor to of a as services to the market and in return this household earns only wages.

But if you look at this household number 2 and there are 3 arrows coming in from the second term here. So, which means that this household here has access to wages, this household has labor per which it offers to the market and gets wages in return. This household also owns some asset, whether it is in the form of land or it is in the form of various capital equipment's on which it earns a rent. And this household and also has some stake in the businesses in the economy on which it earns an profit.

. So, clearly the sources of income of this household 3 are much lesser then what sources of income of this household 2 earn. So, this 1000, 2 earns from all the sources of income, household 3 earns only from wages. Similarly, if you look at household number one it has labor part 2 of after to the market and therefore, earns wage and it also earns rent. So, this rent maybe on land or on other capital equipment's. Household number 4 earns it is income from profits, as well as from wages by offering labor to the market that we are considering here.

Now, one of the reasons for looking at all of these the functional distribution of income and the personal distribution of income; is to see what is the level of asset inequality within an economy. So, in this case household number 3 does not own any factors of production other than labor. Household number 2 has access to all the factors of production other than labor. And this is at the root of inequality analysis, and when we come to sense capabilities approach, we will see how the asset ownership and sources of income decides what is the capabilities set of household 3 and household 2.

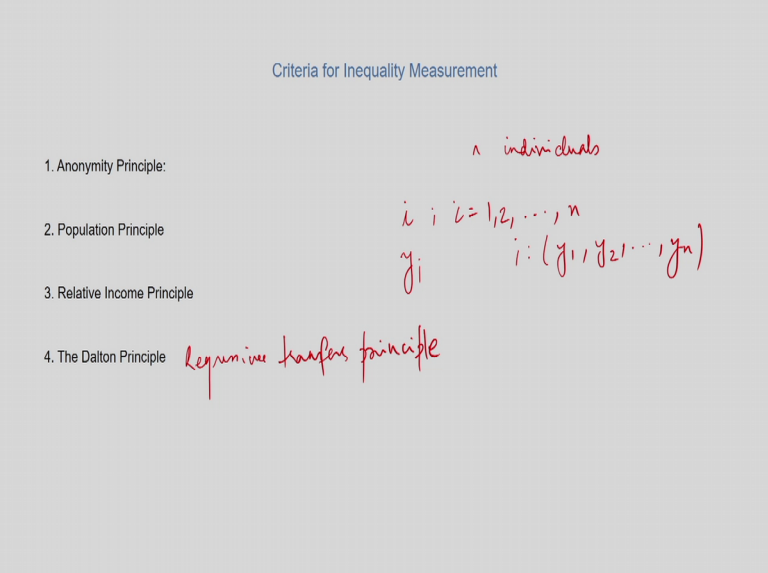
So, the capabilities set of household 2 will be defined by the amount of labor per that this household has by the amount of land or other capital equipment's at this household has or also by the amount of states in the businesses that this household has. Whereas, the capability set of this household numbers 3 we will be defined only by the amount of labor per that this household is able to offer to the market. So, understanding of how economic inequalities are created in a society necessitates that we understand both house factors are paid and how factors are owned.

Now, there are various criteria based upon which we decide which inequality measure to be used. And as I have informed in the beginning of this class that some of the very

common inequality measures, there are various in a measures of inequality and some of the common inequality measures are the Lawrence curve the Gini coefficient, the coefficient of variation, the mean deviation ratio, cuznuth ratio and so on and so forth.

And some of the discussion on some of these inequality measures we will hold when we come to the class on inequality adjusted human development where we are discussing some of these ratios. However, there are certain principles, that guides use of measurement of inequality of measures. And that is what we may look at in today's lecture.

(Refer Slide Time: 13:10)



There are 4 principles on an intuitive bases, there are 4 principles that guides what is the criteria for inequality measurement. So, suppose that in a society which is composed of an individuals; that are let us say n individuals in a society, and we use an index i which stands for a generic individual.

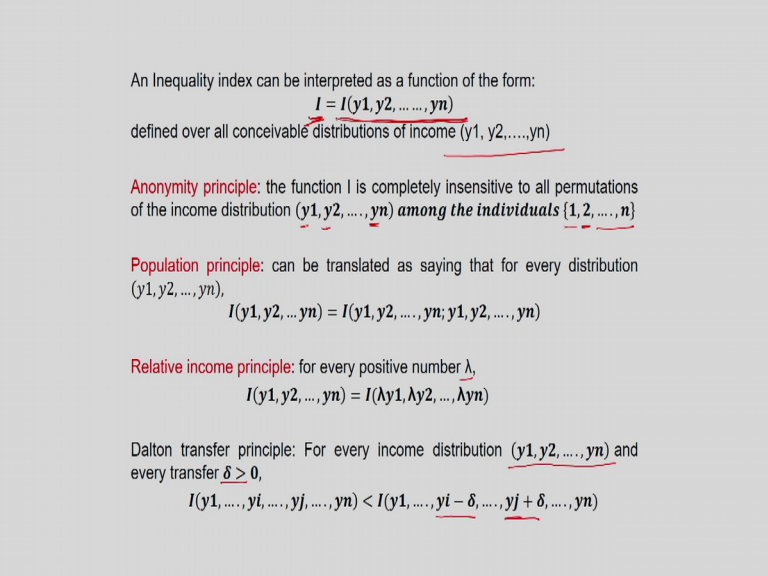
So, that i is equal to 1 2. There are n individuals in an economy. An income distribution is a distribution of how much y i is received by each individual i. So, y 1 y 2 y n, this is the income distribution that we are concerned with. And we are generally interested in computing or comparing. The relative inequality of 2 income distributions and to be able to capture some of a intuitive notions about inequality in the form of an applicable criteria. And these are the general criteria that we consider when we are looking at

inequality measurement anonymity principle, the population principle, relative income principle and the Dalton principle.

Now, the anonymity principle is something very simple. So, suppose let us say there are 2 individuals a and b in an economy; a earns x and b earns y, based upon the anonymity principle it says that if based upon certain permutations if we change the permutations of incomes within an economy, the inequality calculation, it will not have any effect on inequality estimate within an economy.

So, it is basically saying that whatever be the permutations of incomes within the economy if the levels of income are remaining the same. Then it does not have any impact on the on the on the measurement of inequality per say.

(Refer Slide Time: 15:11)



If you look at this function here if we are interested in computing and inequality index, then an inequality index can be interpreted in the form of a function here. Where is equal to i of y 1 y 2 y n. And y 1 y 2 y n is the income distribution here. And a higher value of this measure i here signifies the presence of greater inequality. So, this inequality function i here is defined over all conceivable distributions of income y 1, y 2, y n. So, it is defined overall the conceivable distributions of income.

Now the requirement that the inequality measure satisfied anonymity principle can be stated formally as follows. That the function i here is completely insensitive to all

permutations of the income distributions y 1 y 2 y n among the individuals 1 to n. So, is these incomes y 1 y 2 y n are interchanged among all of these individuals 1 to n, it has no effect on the index of inequality that we are calculating, or the function i that we are calculating. So, the anonymity principle says that the function i is completely insensitive to all permutations of the income distribution y 1 y 2 y n.

Similarly, the next principle that we are considering is the population principle; which basically says that irrespective of the given size of the population, what matters is a what proportion of population has access to what share of income, that is what will affect the inequality index. However, there are size of the population per say will have no effect. So, the population principle your can be translated as saying that for every distribution y 1 y 2 y n that we are considering. The inequality function here i of y 1 y 2 y n will be equal to i of y 1 y 2 y n repeated over the different sets of population.

So, essentially what it means that cloning all members of population and incomes has no effect. So, by taking the lowest common multiple of the populations of any collection of income distributions, we can always regard each distribution as effectively having the same population size.

The third principle is the relative income principle, and the relative income principle can be incorporated by requiring that for every positive number a lambda here, the inequality function will be equal to by how much the incomes have changed. So, which means that if we are scaling up income or scaling down income, then by the relative income principle, it will we will say that this function will be equal to this function. The scaled up or scaled down function.

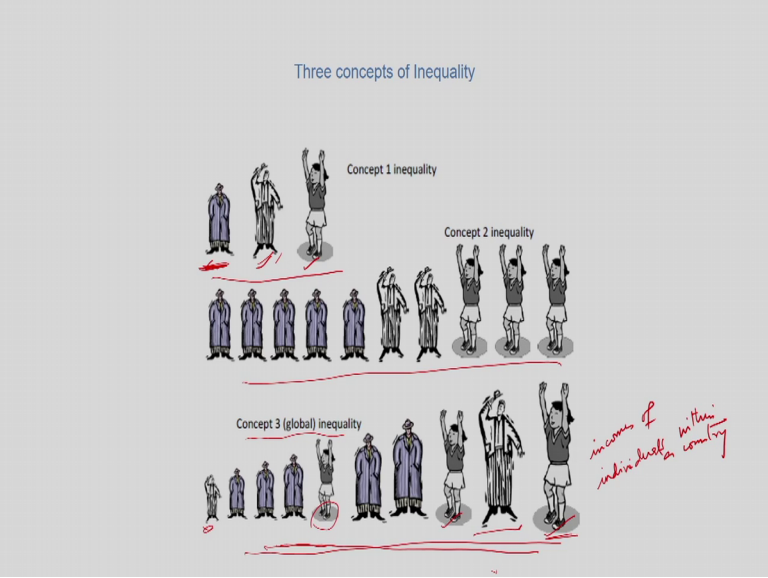
And finally, there is a Dalton principle which is also referred to as a Dalton transfer principle. This is also referred to as the regressive transfers principle. And this basically says that, if there are 2 income distributions let us say y i and y j. And there are and if y i refers to the poorest groups of population and y j refers to the richer groups of population. And if some income transfer is taking place from y i to y j then it will lead to an unequal and then the then the inequality index will rise.

So, based upon the Dalton transfer principle for every income distribution y 1 y 2 y n and for every transfer delta, which is positive i of y 1 y i y j y n will be less than y 1 y i minus delta here; where this is a regressive transfer that is taking place y i is the poorer section

and y j is the richer section. So, the transfer taking place from poor to rich so, this so, the it will be unequal these 2 distributions will be unequal here.

Now, having the look that some of the basic principles that guides inequality considerations. Now based upon these principles of inequality we come up with a different inequality measures. There is a as I have already mentioned the Lawrence curve the Gini coefficient, the coefficient of variation. The Gini estimate and the coefficient of variation are considered to be very robust measures of inequality. And most of the inequality measures that are taken up for various studies empirical studies make use of this of the Gini coefficient widely.

(Refer Slide Time: 20:17)



Now, based upon this a number of studies have been carried out you must be aware of say the Kuznet curve for example; where inequality ratios are calculated for different countries across the world. And the Kuznets curve the inverted u shape which discusses that when in the initial levels, when economic growth is taking place, in equality will increase that is calculated based upon the Gini coefficients. It shows that this the Kuznets curve basically plots the growth of income gains the Gini coefficients and it shows that as income grows inequality also grows; however, at a certain level as far as the developed countries is concerned the inequality level comes down.

However, the Kuznets curve has been questioned for various reasons. Because empirical data has shown or the experience of many developed countries has shown that when

economic growth has been rising over a period of time inequality has also been rising. And as a result of which many economist have come up with various extended formulations of the Kuznets curve for example, Branko Milanovic who talks about the Kuznets wave.

However, in this lecture we will discuss Branko Milanovic ideas with respect to global inequality. And I am making a particular reference to his very influential paper which he have written when he was in the World Bank; which says global income inequality by the numbers in history and now.

And in the second part of the lecture I will be discussing some of the major ideas as to what he discusses in this paper. And how important it is to look at the various measures of inequality? And also different concepts of inequality there are different concepts of inequality that has been doing the rounds in the various years.

Now example in many inequality discussions, you would say that the measure that has the indicator that has been taken to measure inequality is gross domestic product, or sometimes GDP per capita. Now one of the assumptions of taking GDP per capita of which is also the limitation of taking GDP per capita is that, we are considering a representative household or a representative person in an economy, without taking into consideration the fact that are so many households at the below the average income who do not get represented in these inequality studies.

So, if you take in GDP per capita as a measure. So, we are basically saying that representative individual from a country a earns a GDP of an average GDP of an amount say x. And therefore, therefore, inequality studies are largely giving rise to such kinds of limitations, where we are not taking data based upon cross section studies or the actual incomes of household's within an within a country.

So, this is something the Branko Milanovic tries to deal with in his paper on global income inequality by the numbers in history and now. So, I have taken largely from his paper here. And he begins with this concept of inequality, and with 3 concepts of inequality and how the concepts of inequality have evolved over the past 60 years. So, if you look at this slide here, he is looking at 3 concepts of inequality; to be able to come up with this concept of what called global inequality.

He saying that when we talk about inequality that is beyond the national territory of a country, we often have these 3 concepts. So, the concept 1 2 and the 3 here the first concept of inequality is focused on inequality between nations of the world. So, you have 3 individuals here. So, this one is of the shortest height this person's height is more than the first and this is the tallest person here. So, this is focused and these 3 are basically 3 nations here. This is the poorest nation and this is the richest nation, and this the one and between is a middle income nation.

So, here inequality statistic is calculated across GDP's or mean incomes obtained from household's household service of all countries in the world without any population waiting. What we are considering here is the GDP. So, the lowest GDP country has a representative individual who has the shortest height, the middle income country has a representative individual whose height is more than the lowest income country, but less than the richest income country. And the third person here a presenting the third country is the richest country and therefore, has the highest height.

So, the height of each person represents the GDP or mean income of his or her country. Somebody from a poor country would be represented as a short person. Somebody from a middle income country as a person of medium height and somebody from a rich country has a very tall person.

So, when we calculate this concept of inequality we take all countries with their mean incomes and since we have about 150 countries in the world. With the such data which gives us the data on mean incomes or GDP, we calculate the Gini coefficient and in this conception of inequality where we are simply giving averages of income.

So, this is the averages of income of the lowest income country. This is average of income of the middle income country, and this is average of income of the richest country. Here we are saying that a country which has a very large size of population is the same as a country which has a very small size of population because you are not taking population sizes into account.

So, which means that in and Milanovic in his paper states that, China and Luxembourg which have very contrasting sizes of population China has a huge size of population and Luxembourg has a very small population size. They will both be accounted similarly in this first concept of inequality here.

Then he comes to this second concept of inequality; where we are showing the size of population of all of these countries 1, 2 and 3 here. So, these are 3 countries here and this is the population size of all of these 3 countries. Here individuals from poor countries are all equally short as before. And those from rich countries are equally tall. But the difference lies in the fact that the countries population sizes are now taken into account.

So, here in the last example he had taken example of China in the last concept of inequality he had taken examples of China and Luxembourg. So, here China and Luxembourg enter the calculation with their populations.

In this figure here, the poor country is the most populous; it has 5 individuals out of the 10 individuals being displayed here. The middle income country has the, is the least populous it has only 2 individuals. And the richest country has 3 individuals.

But if you look at the third concept which is global inequality and this is the most important concept for those interested in looking at world inequality or global inequality without looking only at within country inequalities. This one is individual based. So, each person regardless of her or his country enters in the calculation with her actual income. So, this is represented by the different heights of individuals who belong to the same country.

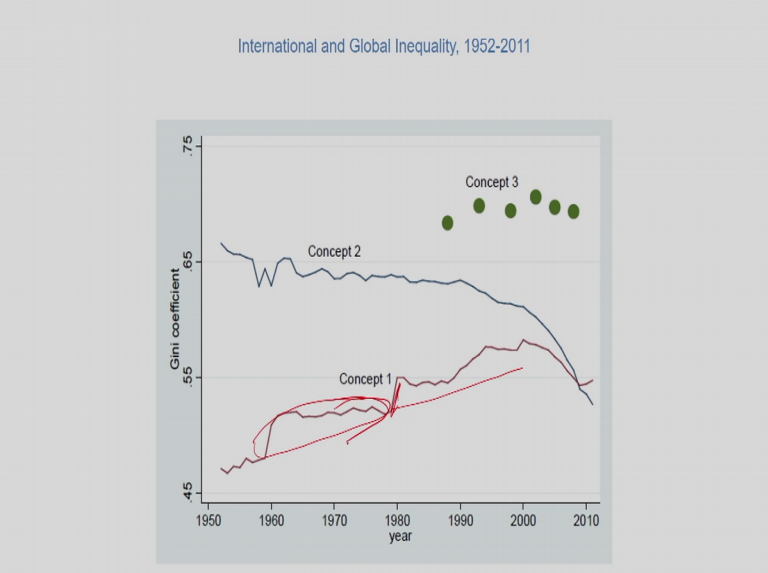
So, if you see here so, let us say these individuals belong to the USA. So, we can very clearly see here that not all Americans have the average income of the United States. Not do all Chinese have a average income of China. So, the poorest person is if you. So, if you compare these 2 concepts here concept one and concept 3. In concept 1 the poorest person was of the shortest the shortest person, belong to the poorest country was here this was an average person. But if you look at the concept 3, the poorest person actually middle comes from a middle income country. And the richest person continues to come from a rich country, but the next richest person comes from a middle income country and so on.

So, when we move from concept 2 to concept 3 reflecting on inequality is not easy. And before when we are looking at global inequality, this which is this conception of inequalities that we are taking into account, the individual incomes or incomes of individuals within a country, then we come up with the conception of inequality, which caters to the concept 3 global inequality. And if one looks at the data on incomes

available one would see that individual incomes are very hard to come by, not many countries publish data or collect data on household incomes within a household incomes.

Therefore, at the international level not much data across different countries is available as per as individual incomes is concerned at best what we have is the GDP estimates. But what Milanovic does for his analysis on inequality through this paper is he puts together the household survey based data, on household incomes or household expenditures for various countries across the world. And then he comes up with some of the basic findings with regard to how inequality can be read.

(Refer Slide Time: 30:36)



Now, look at this figure here. This figure shows as the international and global inequality between the period 1952 and 2011. It shows as the movements of the 3 types of inequalities that we have just seen. And this shows the movement of inequalities this 3 types of inequalities after the Second World War.

So, the y axis shows the Gini coefficient the vertical axis. And the x axis shows the movement of this inequality across the years in the post second world war period. If you see the first concept of inequality concept 1, you would see that this inequality was more or less stable from 1960 to 1980.

So, what does this mean? This period between 1960 to 1980 as per as this concept one of inequality is concerned was considered to be a more or less stable. So, this basically means that there was no systematically faster or slower growth of poor or rich countries.

Now, there were the poor catching on with the rich, nor were the 2 groups growing a further apart. But some amount of divergence started post 1980 around 1980. And it went on until the turn of the century. And these 2 decades were very bad the 1980's and the 1990's were considered to be very bad as far as convergence is concerned or catching up by the poor countries is concerned. Rich countries grew on an average and the faster than the poor countries.

And the it is claim the China and India war huge success cases of this period, because over the 2 most populous countries in the world, but in this concept one of inequality. If you remember, population does not enter into the calculation. In this concept one of inequality we are only looking at the average incomes of the country is here, a given by the heights of these 3 individuals here the poorest country in the middle income country in the rich richest country.

So, population does not enter into this calculation. So, even if the fact or the claim that China and India were growing at a very high rate does not enter into this calculation and inequality is shown to be rising over this period of time.

A newspaper Milanovic through this figure tries to explain that, this is the mother of all inequality disputes. And he clarifies what is this dispute all about. He asked us to consider the difference in the movements of inequality concepts 1 and 2. What is the difference in the movements of inequality concepts 1 and 2? The first one as I have just mentioned here it rose during the globalization era. The post 1980's phase particularly 1988 onwards is a rapid rate of growth of globalization. So, in the post globalization era the rate of inequality here rose.

And the second declined. If you look in the post globalization era, this concept 2 of inequality by population is taken into account shows the decline. Whereas, here where only mean incomes is taken inequality shows the rise here. So, he says that those who desire to emphasize the unevenness of globalization.

And the tend to focus on growing inter country gaps not taking into account sizes of population, they refer to refer to the concept one of inequality whereas, those on the contrary who wish to focus on the positive aspects of globalization. They tend to the favor the concept 2, which shows that there is a decline in inequality. And of course, this concept of inequality is referring to the success stories of China and India here.

So, intuitively it basically means or inequality declined because China counts a lot because of it is population size. And China studying in the 1980's from an extremely low level of income showed very high growth rates converging with the rich world. Until recently it was China alone that had been preventing a rise in global inequality as measured by concept 2. And eventually India also showed a very high growth rate, which provided a lot of support to the Chinese growth rate. And therefore, the world inequality seems to have been declining.

However, if you look at the concept 3 inequality here which is shown in the form of dots. This is available if you see this inequalities available only from the mid 1980's here. Because Milano with paper says that and of course, we no from the data that is available we know that, household survey data came to the 4 largely from the mid 1980's. Prior to the 1980's we almost do not have access to 1000 data on incomes or expenditures. And therefore, this concept 3 inequality has been measured, if you go through if you have an opportunity of coming across more papers by Milanovic.

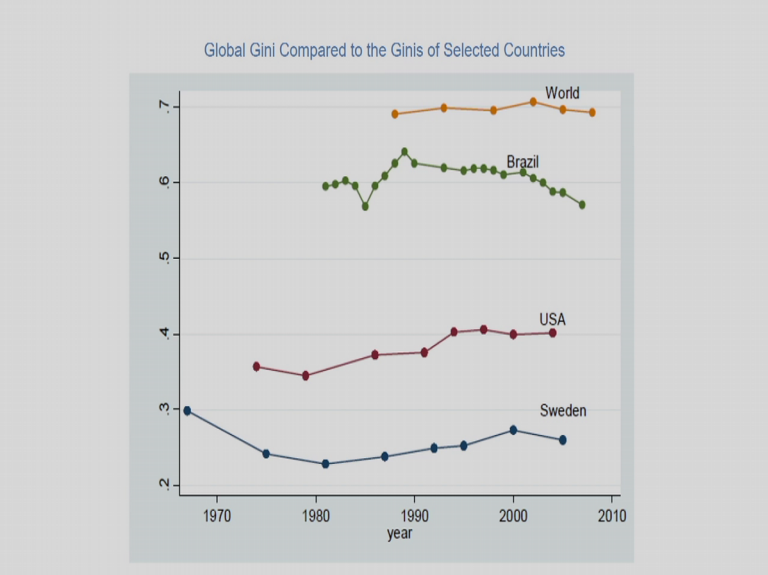
Because Milanovic major focus areas trust area has been on inequality and poverty. You would see that there is a lot of discussion with regard to house how these household survey surveys were conducted, how the data was collected, and how the data was put together to be able to come up with the time series on incomes and expenditures for to be able to come up with the global analysis global inequality analysis.

So, this concept 3 here is calculated from the mid 1980's because there were no household surveys for the back in time. And it shows the inequality 3 is higher than inequality 2. And this is true by definition because an inequality 3, people enter the calculations with their actual incomes and not with country averages. And this shows that the variability if you look at this figure here again, where people enter into the inequality calculations with their actual incomes.

You would see that the variability in size is much higher in this concept of inequality than in this because here people. Here we are looking at the actual incomes of course, this is based upon a sample data, but the sample is representative enough. So, here we are we looking at the actual incomes of people in different countries and therefore, the variability is very high.

. So, if you are if you can imagine the, this picture in the form of numbers here. And if you calculate the coefficient of variation for these 3, you would say that the coefficient of variation for concept 3 is very high. So, concept 3 shows greater variability and therefore, averaging out reduces measured in equality and the concept 3 inequalities actually very high.

(Refer Slide Time: 37:33)



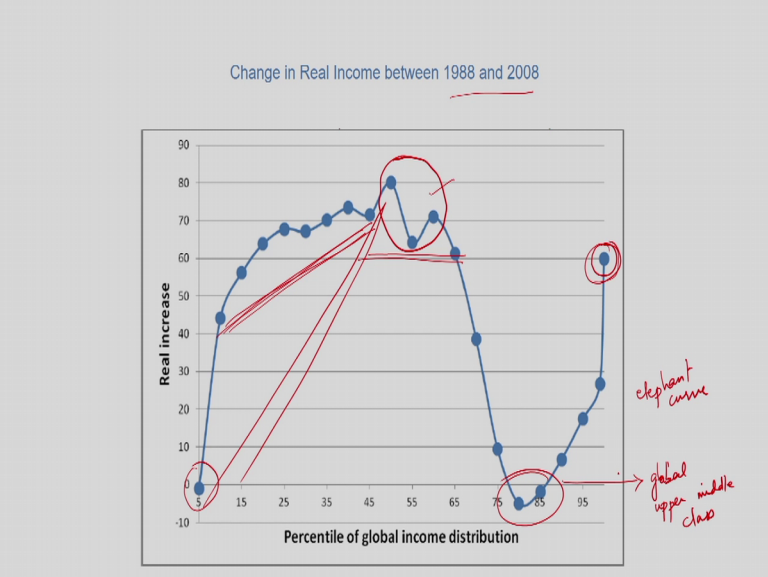
Now, he also looks at global inequality, the world he also a plots in this paper the Gini coefficients for 3 countries brazil, USA and Sweden and the world inequality between the period 1950s to 2010. And he says the global inequality is much greater than inequality within any individual country as is shown in this graph here. This graph shows Sweden USA Brazil and the world. Global Gini is around 70, global inequality substantially greater than inequality in Brazil which is considered to be a highly unequal country. And it is almost twice as great as inequality in the United States.

So, the global inequality numbers come from calculations then across representative national surveys. Which monitor incomes or consumption of households. And in this

paper he clarifies that about 120 such service have been taken into consideration. And these one 20 surveys include actual incomes or consumption levels for about 10 million people in this world, which is about 1.5 percent of the current global population.

So, the essentially what this figure is trying to tell us is that, if we are looking at within country inequalities, the Gini coefficients come out to be much lesser then if we compute world inequality and if we are looking at and if we are concerned about because globalization has brought countries together. We are being considered no longer as citizens of different countries, but as denizens of the world. Then it is then it also make sense to look at where world inequality stands. And these estimates clearly show us that world inequalities that a much higher level than the inequality that we see within countries.

(Refer Slide Time: 39:29)



Now, this curve of which was worked out by Milanovic is a very famous one. This is also referred to as the elephant curve. Notice the shape of this curve. So, in this he is basically trying to say that is he has consider these 2 periods between 1988 and 2008 within a 20-year period; who are those countries that have gained from globalization, and who are those people I am sorry not countries. Or countries as well as individuals that have gained from globalization and those who have lost an because of the globalization in terms of rise in real income.

So, this graph is telling us what is the change in real income between the period 1988 and 2008 here. The vertical axis and this figure shows the percentage change in real income measured in constant international dollars. And the horizontal axis here shows the percentile position in the global income distribution. So, the percentile position runs from 5 to 95 in instruments of 5. The top 5 percent are divided into 2 groups 1 percent, and those between the 95th and the 99th percentiles here.

So, he says that generally there are 2 groups who are the big winners of the past 2 decades of globalization. First is the very rich or those at the top of national and global income distributions. And second is a middle classes of emerging market economy is in particular china, Indonesia, India and Brazil.

So, he is trying to investigate this question whether it is generally claim that the gainers are the top of or the very rich. And the middle classes of emerging market economies. In a related paper he also asks the question, is there a middle class really in his calculations of in equal in his discussions on inequality and poverty.

So, through this figure he shows us that what parts of the global income distribution registered the largest gains between 1988 and 2008. And this figure indeed shows us that among the very top of the global income distribution here, and among the emerging global middle class; which includes more than a third of world population here. We find the most significant increases in per capita income.

The largest increases were registered in fact, around the median which is here. And the top one percent has seen it is the top one percent here has seen it is real income rise by more than 60 percent over those 2 decades whereas, a largest increases were registered around the median. 80 percent real increase at the median itself and some 70 percent around it.

So, it is here between the 50th and 60th percentile of the global income distribution, that we find 200 million Chinese, 90 million Indians, in about 30 million people each from Indonesia, Brazil and Egypt. And these 2 groups the global top 1 percent. And the middle classes of the emerging market economy is seem to be the main gainers of the globalization period.

But those are the bottom third of the global income distribution also seem to have made significant gains and his referring to these percentiles of population; where they seem to where the real incomes seem to have been rising between more than 40 percent, and almost 70 percent. Whereas, the only exception is the 5 percent here that seems to have remained the same. And it is this income increase at the bottom of the global pyramid that has allowed the proportion of what the World Bank calls the absolute poor who lives than one us dollar per day.

Very interesting he points out in his paper that the biggest losers of globalization are those in this the biggest losers. Other than the poorest 5 percent here, are those between the 75th and the 90th percentiles of the global income distribution, whose real income gains actually has been 0. And these people may be called the global upper middle class they can be called the global upper middle class.

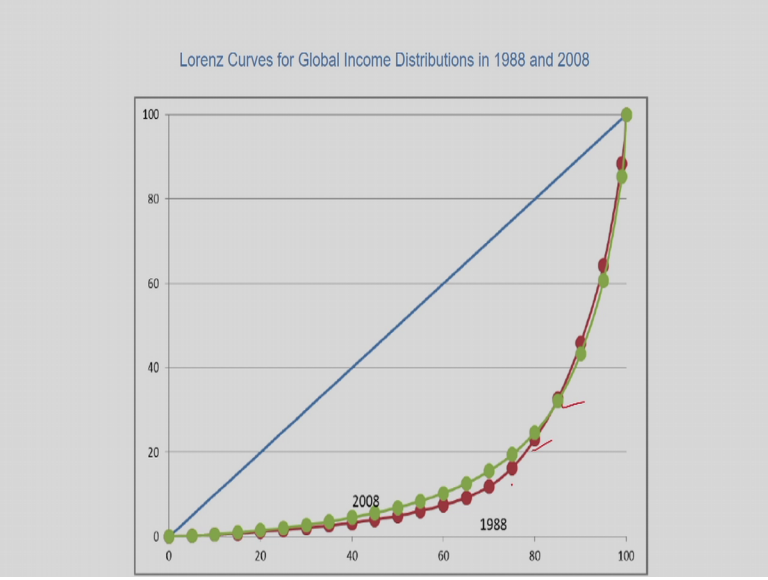
So, these are the people belonging to form a communist countries in Latin America. And as well as those citizens of India basically citizens of rich countries whose incomes seem to have tag netted. So, he is a very interestingly in this paper points out how global income distribution has changed in the remarkable way in the post globalization era, starting from and such a reshuffling of incomes or reshuffling of economic positions of individuals did not seem to have taken place since the industrialization industrial revolution era.

So, broadly speaking the bottom third with the so, bottom third with the exception of the poorest 5 percent became significantly better off and many of the people here escaped the poverty. The middle third or more became richer seeing the real income rise by approximately 3 percent per capita annually. And the most interesting development happened among the top quartile the top 1 percent and somewhat less so the top 5 percent the gain significantly. Well, the next 20 percentile either gained very little or phased stagnation in real incomes.

So, there was a lot of polarization among the richest quartile of the world. The richest quartile of the world seem to see a lot of conflict that how the riches the top one percent. So, a rise in real incomes, where as the world the top 5 percent the those below the top one percent was seeing a stagnation in real incomes. One of the question that arises is that who are those people who constitute the top one percent. And he refers to them as

those belonging to the exclusive club. They are basically the richest 12 percent of Americans 3 and 6 percent of richest British Japanese Germans and French. And he refers to them as the club comprising of the old rich world of Western Europe northern America and Japan here.

(Refer Slide Time: 46:07)



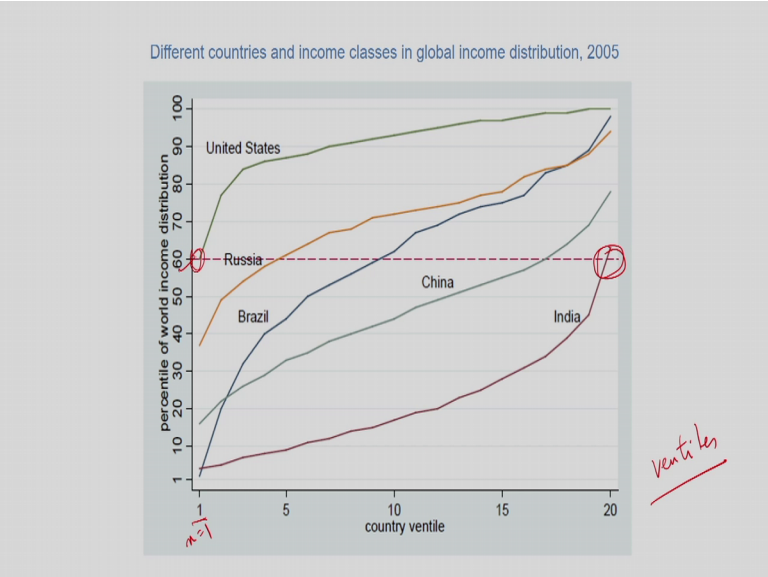
He also constructs Lawrence curve for global income distribution. And the he comes up with something very interesting here. The Lawrence curve they plot the percentage of cumulative income, running from one to 100 on the vertical axis. Against the percentage of cumulative population on the horizontal axis for 1988 and 2008 and it intersects both these Lawrence curves here 2008 and 1998 the intersect at this point here.

And so, the neither distribution is Lawrence dominant and the gains at below and around the median make the Lawrence curve for 2008 lie above the one for 1988. All the way up to the 8ieth percentile. So, which means that the bottom 2 thirds of population, world population received about 13 percent of world come in 2008 as a gains 9 percent in 1998.

But the stagnation or decline in real income of the global upper middle class, and big gains realize by the top one percent. The reverse the position of the Lawrence curves for the last one fifth of the distribution. So, the bottom line of this figure is that this results show a remarkable change in the underlying global income distribution. We will live in a world with the bulge around the median with significantly rising incomes for the entire

second third or more of the global income distribution. That is the new aspiring global middle class.

(Refer Slide Time: 47:39)



I will show you one last figure from his paper in which very interestingly he shows what is the position of different countries and income classes in global income distribution. And here he summarizes a macro development that has taken place over the last 2 centuries. So, here he says that he illustrates that with the difference in economic positions of people from different countries. And it is important to contextualize this graph as to what Milanovic is saying that, today it is important to see what is the location of an individual in as far as global inequality is concerned.

. So, if a person is located in the United States, then say in India she will be better off then she is in India. So, location is very important here. And as much as location is important migration is important. So, if you want to be rich in a globalized world, you need to migrate to the countries that are richer; however, as experience tells us there are various political and social and economic considerations with regard to migration, there are various fences that are various political and social reasons that fences or a national fences territorial fences have become very stronger over a during the post globalization era. Therefore, migration labor migration is not as easy as it sounds in a textbook formulation.

However, coming back to this figure here in which is which Milanovic is trying to draw attention too. In this he has divided population of all countries into groups of 5 percent. He calls them gentiles. He calls a gentiles. There are 20 such groups in a population running from the poorest to the richest. The poorest ventile in any country will be at x is equal to 1 here. Thus this will be the position of the poorest ventile.

So, consider for example, the poorest 5 percent of people in the United States which is here the poorest 5 percent of the people in the United States. He has put them all together and so, he puts them all together and calculates that average incomes.

So, all of these gentiles are basically showing, what is the average incomes of all of these gentiles. And I will consider this to be a very important contributions as far as this paper is concerned. And then he does the same for the next 5 percent, then for the next 5 percent up to the very top or the richest ventile.

If you see the poorest 5 percent, the poorest 5 percent here of Americans are making around 3000 to 4000 dollars per capita per year. This is in percentile form, but the data tells us at the poorest 5 percent of Americans are making about 3000 to 4000 USD per capita per year.

And in the question is how do they compare with the rest of the world. In what percentile of the global income distribution would they be? So, this is shown on the vertical axis. So, this is an intuition poor Americans are unlikely to be among these are the poor Americans, they are unlikely to be among the poorest people globally speaking. Because their incomes are not that low in comparison to the other countries.

So, for example, we know that some 20 percent of global population live at less than 1 international dollar per day while the US poverty line is about 13 dollars per day. So, intuitively and based on very limited evidence. We can already expect the poorest Americans to be relatively high up in the global income distribution.

So, I will shown in the graph the poorest Americans are at the 60th n percentile of world income distribution. This means that, they have higher annual income than 60 percent of the world population. And this is a striking finding of this paper based upon the methodology that they have calculated, that he has calculated in the poorest 5 percent of Americans on an income which is at the 68 percentile of world income distribution.

So, what does this mean? This means that they have higher annual income, than 60 percent of the world population. And as one moves higher up in this graph as one moves higher up; obviously, each richer ventile of American will stand even higher in the world income distribution with the richest 5 percent of Americans belonging to the global top one percent but if you compare and contrast this with the, with India here.

The curve for India how does this same thing look for a country like India, the very top of the income distribution in India, which is here the very top of the income distribution in India, overlaps with the very bottom of the income distribution in the United States. And we know that there are millionaires in India as well as other people who are quite rich, and the same graph with percentiles would have shown the top end of India's income distribution to be a little bit higher. But even in that case it would not go past the global 8ieth positions and near identity of their income interests.

So, the argument that he is trying to make through this graph is that in the post globalized order it is the location of the individual that matters a lot, which country is an individual located in? And therefore, migration becomes an important issue when we are considering global inequality in a post globalized era.

So, I will end today's lecture with summarizing the class today. We started beginning we began discussing the idea of inequality with respect to growth. By saying that, there are at least 2 reasons why we need to be concerned with the concept of inequality. The one is at an intrinsic level and the second is it a functional level. Add an intrinsic level it is important to look at inequality because it is an ethical issue. To what extent we can tolerate the glaring levels of inequality within a society, because that concerns social welfare is a question that we need to deal with.

At a functional level it is important to look at inequality, because inequality matters to the overall growth within an economy. Because there are certain economic reasons that economic reasons, that inequality becomes important. Some of the reasons being that it directly affects the level rate of savings within the economy or the rate of capital formation, within the economy.

And it is important to look at functional distribution of income, because we need to look at how inequality is generated over a period of time. Who owns the different factors of production? What are the different sources of income of different houses within an

economy? That is that tells us what is how in equality is generated in a society over a period of time.

We also looked at some of the principles that guide inequality measures, and how do we look at as look at an inequality function when we are looking at 2 distributions of income. How do we decide, how do we come up with an inequality index? And then we discussed the paper of Branko Milanovic title global income inequality by the numbers in history and now; in which he discussed 3 different concepts of inequality, one in which we are only looking at the average incomes of different countries. And we see how the countries are growing over a period of time, only based upon their average incomes.

Ah Second concept of inequality in which we are accounting for the population size and then seeing how inequality behaves, how the function behaves. And then the third concept of inequality which is global inequality; where we are looking at the actual incomes of individuals irrespective of which country they belong to.

And he has he plotted these figures of inequality he computed a Gini coefficient based upon all of the based upon of the incomes of countries about 120 countries for the post world war period. And he saw that in the post globalized era particularly from the middle of 1980's onwards, concept one of inequality hed shown rise in which population was not taken into account.

Whereas concept 2 of inequality after taking population into account had been declining whereas, concept 3 of inequality the global inequality was much higher than when we looked at inequality 1 and 2. He also showed us how world inequalities at a much higher level when compared to the within country inequalities that we look at.

And then lastly he also discussed how the location of an individual in the world is very important. Whether an individual belongs to China or India or USA or Sweden a Brazil, that determines, what access the individual has access of the individual access to various necessities of life, or access to various things that is necessary to lead life becomes important.

So, this he was basically trying to say that because location is important. Migration becomes an important in the discourse of growth and development of the developing countries. And how easy or not easy, it is for people to migrate from one country to

another becomes an important concern in the wake of globalization. So, I will see you in the next class.

Thank you.