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Income inequality is one of the worst problems of the world today. It seems that it's increasing in most countries. That's why it's not enough to just compare GDP per capita, because that shows the average income in the country. We want to see how much income varies between people in the same country. So I'm going to show you how to do that by using income distribution. But first, have a look at this, where I show the income distribution of the whole world and how it has changed over the last 50 years.

I'm now going to show you something which makes me very excited as a statistician. I'm going to show you income distribution, the difference between people, and to do that I take the bubbles back 50 years and then we are going to look only at money. And to do that we have to expand and adjust the axis because the richest is so rich and the poorest is so poor, so this will be a bigger difference than between the countries. And what we do now is that we let the country fall down here, this is United States, and spread to show the range within the country. And I take down all the countries in the Americas, and now you can see from the richest person to the poorest person, and the height here shows you how many there are on each income level. And now let's take down Europe. And on top of that I'm going to put Africa. And finally the region with most people on top of everything, Asia.

Now in 1963, the world was constituted by two humps. First the richest hump, it's like a camel, isn't it? The first hump here with the richest is mainly Europe and the Americas, and the poorest hump over here is mainly Asia and Africa. And the poverty line was there. Can you see how many people there were in extreme poverty 50 years ago, and most of them were in Asia and people were saying Asia will never get out of poverty, exactly as some people are still saying about Africa today.

Now what has happened? I start the world, and you can see that many people are born into poverty here, but Asia goes towards higher income, and one billion goes out of extreme poverty this way, and the whole shape of the world changed, and the camel is dead. It's reborn as a dromedary.

The best website to look for data on income inequality is PovcalNet on the World Bank's website. If you go there you can find information on things like poverty rate for most countries. At Gapminder Foundation we use this data, together with data for the richest countries from other sources, and historical data, to create income distribution for all countries in the world for many years back. I'll show you here.

This is the income distribution of the United Kingdom in 2010. That's the latest year for which we have data. Now it shows income on a logarithmic scale, \$1, \$10, and \$100 a day. No people down here, but here a few people with very low income, then more people on this income level here, and at the high income, fewer and fewer people. Now if you look at GDP per capita, that's a mean value. That is like summing up all the incomes and divided by the number of people. The mean income would always be here on the richer end, because the rich people would drag up the mean.

It's a little like if you imagine a bar with ordinary people, and you calculate the mean income in that bar, and then the door opens, Brad Pitt walks in. He earns millions and millions of dollars a year, so suddenly the average income in the bar skyrockets, but it's only one person who have an income above the average. Countries are a little like this, you know. Average doesn't reflect the majority of people's situation, so we really need to see how the incomes are distributed, and especially how far it goes in the poorer end.

So how has the income distribution of the United Kingdom changed over time? I'll drag the country backwards in history, all the way down to 1900. That's the time of Downton Abbey. Look what a difference. At that time there were people in Britain living on \$1 a day, and these are comparable dollars, adjusted for inflation, so it can be compared to

the poorest in the world today. Then most of the people were here below \$10 a day, I think the butler was somewhere here, and most interesting, the richest people were almost as rich as the richest are today. So there was a very wide income inequality.

And now I start the country, here we go. Year by year you can see that in the poorer end it seems to improve, and especially after 1950, they increase their income and so did the rich in this end. So still today a huge income inequality in United Kingdom but much less compared to historical times.

Now I'm going to compare the income distribution over time in two countries. I have picked China and United Kingdom, and I start in the year 1949, when Mao Zedong and the communist party came to power in China. Look, at that time there were more people in China, that's why you see this big amount here in China, and compared to that there were few people in United Kingdom, so now United Kingdom is much flatter on this graph. But look how low income they had in China. Almost half the population was on \$1 a day or less, extreme poverty coming out of decades of war and famine, and almost no overlap. People on the lowest income on Britain corresponded to those on highest income in China. No one in China could compare to the richest in Britain.

But now I start time, and see what happens. Well of course the population is growing, there's becoming more people China, and then with Deng Xiaoping they move forwards and they get richer, and there they are today. Can you see, China is covering the entire United Kingdom? United Kingdom is inside China. This means that every person in United Kingdom, even the richest, have one person in China which have the same income. And for those with the average income here in the middle in the United Kingdom, they can find like five to ten persons in China with the same income.

But look also here, where there is no one more on lower income in United Kingdom, it's still about 400 or 500 million people in China with lower income, a huge income inequality in China compared to United Kingdom. I never understood this until I saw it as graphic income distribution. When you looked at average, China was there, UK was there, I never understood that really UK was within China. I think it's very important to look at income distributions.