Ways to measure and estimate global inequality

Global inequality can be measured with many different methods, and each method can be modified in many different ways regarding items studied, variable type, data collection etc. Global inequality as a phenomenon can also be interpreted in different ways, whether it is about money or life quality etc. My view of research in global inequality after reading the course literature is that it is a complex subject and must be handled with awareness of all obstacles and care for the effects of the results and its possible use.

Although not using the same models, the works of Milanovic and Sutcliffe are built on some interesting structures which differ in some ways and are alike in others. I have tried to put together four perspectives of inequality research to get a grip of the different choices and outcomes. Material from Sutcliffe, Milanovic and even Baldwin can be fit inside the model. This easy structure can be used in many ways and support different outcomes and thus be very complex in its practical use.

First, studies can be done of monetary values or social values or a combination of both. Studying inequality with monetary values means measuring income and wealth and how these are distributed inside countries and throughout nations and societies in the world. Monetary values of inequality are the aim of Milanovic's material and is the focus of Sutcliffe's first and third approach (Sutcliffe, 16). Studies of inequality with social values mean measuring quality of human life and development and the difference both within countries and globally. This is the focus for Sutcliffe's second approach (Sutcliffe, 16) and is touched by Milanovic as consequences of the economic inequalities.

Second, variables within these monetary and social values are chosen. Within the monetary system variables as GDP, privately owned capital, household income etc. can be used. In the social system variables as life expectancy, childbirth, Human Development Index, literacy etc. can be used. Using social values is complex and both life expectancy (Sutcliffe, 33) and HDI (Sutcliffe, 31) are doubtful measures of inequal welfare distribution.

The economic variables can then be described in different ways. One example is comparing money between countries which over time is a challenge as currencies has different values between countries and these exchange rates change over time, inflation drives change in wages and prices over time and so on. That makes it important to define how these variables are defined. It is possible to compare currency through exchange rates between countries, but a better comparison is with purchasing power parity values, which take into account how much every country's currency can buy inside the country, thus makes it more comparable and show inequality more accurate (Sutcliffe, 17). Milanovic shows an example with food cost converted values which seems to be a version of PPP but focuses on food only (Milanovic, 13).

Third, the measured variables can be structured in many different ways. Data can be collected and compilated in three ways. One way is comparing countries as a single entity with total GDP or per capita GDP or total capital. Another is taking account for the population in different countries where China and India weigh more than Luxembourg and Sweden as examples. Sutcliffe calls these two ways "inter-country distribution". A third way is comparing every individual's income, wealth etc. Sutcliffe calls this "global distribution" (Sutcliffe, 19). In his video Milanovic shows these versions with income as an example (Milanovic, 1:40). Combinations of these are of course possible, exemplified by Milanovic in differentiating between classes, separating workers in low- and high-skill, clustering individuals into work roles (Milanovic, 3-4).

Fourth, the statistical functions can vary vastly, from simple comparison tables and ratios of actual values to complex inequality functions and calculations, and from comparing today's situation to data sets with large time spans. One example of complex comparison when studying monetary values is calculating and presenting percentile distribution to study differences within and between countries. Another example is the Gini ratio which is used to calculate inequality using distribution curves and calculate the deviation from an optimal totally equal distribution using the Lorenz curve (Milanovic, 5). Sutcliffe explains another method for statistic use of monetary values which he calls "*ratios of extremes*". These comparisons use data for the extreme actors in a data distribution set. One example is comparing most and least economically privileged parts with ratios in income between the 80th to 20th percentile or even more extreme between the 90-10 percentiles (Sutcliffe, 26).

Practical examples of estimates

Milanovic uses several ways to measure global inequality to explain how the world have changed during the last 150 years. In the 1800s low skilled workers had the same low real income in all countries of the world. Today low skilled workers in rich countries surpass low skilled workers in poor countries by a factor of 10 (Milanovic, abstract). Comparing between the richest and poorest countries can show even larger differences as the ratio of GDP per capita between richest and poorest in 1870 which was 8 to 1 and in 2007 it was 31 to 1 (Milanovic, 13). Comparing between different work roles, show differences between unskilled building worker, skilled industrial worker and engineer which show that over time the ratio between the richest country and the poorest have risen from 3.3 to 1 up to 9 to 1 today (Milanovic, 14). The mean income of poor countries in 1850 was $PPP 600 and in the richest countries $PPP 2300. The ratio is less than 4 to 1 (Milanovic, 4). An example of between-country comparisons.

In 1850 the global Gini coefficient was 53.2 points estimated by Bourgignon and Morrison based on income distributions and mean incomes for several countries. The Gini points was roughly comprised of half from between-country and half from within-country differences (Milanovic, 5). In 2005 the global Gini was 65.4 points with 85 percent relating to location and only 15 percent from position within the single country based on data from household surveys (Milanovic, 7).

Visualizing distribution and inequality can be done with percentile distribution curves. The population in a country is divided into hundreds, twentieths, tenths, fifths or quarters, and their income is plotted onto a curve. Either their real wages to compare income levels or in percentage of global income. Milanovic frequently uses the latter to show how a country's income is distributed compared to the global distribution of income. In one example he shows which position on a global income scale one twentieth of the population's income would be placed (Milanovic, 7 & Figure 1). It gives a rather clear picture of how the world's income is distributed, both inside a country and between countries. One example of how inequality can be explained with these views is that the highest ventile in Mali earn less than the lowest ventile in Denmark, hence the richest Malians are earning less than the poorest Danish (Milanovic, 9).

Social values are used by Sutcliffe, at least in a reasoning of the use of social parameters. In the abundance of social welfare variables to study he argues that life expectancy and the Human Development Index (HDI) are the most efficient and interesting (Sutcliffe, 16). He shows different studies combining income and life expectancy which in different ways show convergence during the 1900s. This doesn't mean that global inequality has declined, and

Sutcliffe points to the problem that longer life expectancy of a life in extreme poverty hardly can be defined as more equal (Sutcliffe, 27). Nonetheless life expectancy at birth as a standalone variable has shown convergence due to several improvements during the years (Sutcliffe, 19, table1-row6).

The Human Development Index was introduced 1990 with the purpose to add a non-economic instrument in the study of societal development (Sutcliffe, 29). It's a complex function and contains an economic variable in income per head, and two social variables in life expectancy at birth and education level. The HDI is unfortunately of little interest within the global inequality context. Development is not the same as welfare and the construction of the function makes convergence over time inevitable which makes it unsuitable to use in studies of inequality. This convergence occurs due to two factors. One is the two social variables design as being a percentage of maximum life length and maximum literacy and enrolment. This means that developed countries are close to 1 and the only way for developing countries are up, which is good but np real good teller of lowered inequality. The other factor is income which is used with its logarithmic value which reduces the income differences greatly (Sutcliffe, 30).

Inequality, its studies and the Great Convergence 1990-today

Economic history by Baldwin describes the period from 1820 with globalization driven by the first unbundling creating The Great Divergence. In a long and turbulent process, the old civilizations, the A6, were displaced by todays rich nations, the G7 (Baldwin, 1). From 1990 this has changed, and Baldwin describes The Great Convergence as the coming together again. The rich nations' share of global income has shrunk considerably to a level corresponding to that of 1914 (Baldwin, 1). This can be interpreted as lowering inequality but then again this awakes the question of what global inequality really is.

Baldwin clarify that only six countries were growing and taking shares from the developed nations, namely those in I6 – China, Korea, India, Poland, Indonesia and Thailand. Not much happened with the rest of the world (Baldwin, 2-3). This resulted in two different development effects. On one hand the number of people living under $2-a-day-poverty line raised by 370 million from 1980 to 1993 and this was mostly due to fast growing populations in already poor countries with ineffective or corrupt governments maintaining different poverty-sustaining policies, war, plagues and more. On the other hand, the eleven rising countries in R11 drastically grew their economies and pushed 650 million people above the $2-a-day limit. The biggest part of this change is China with a much smaller step for the rest of the countries (Baldwin, 105).

Still, in a global view, Baldwin argues that poverty is declining. In 1990 two out of three in the world lived below $3,10 a day. Twenty years later only one of three, earned less than $3,10 a day. One third of the world was out of poverty, and most of this was done in China. (Baldwin, 242).

Milanovic confirms the complexity of the topic by showing three views, which he calls concepts, of describing global inequality with the phrase "*The mother of all inequality disputes*". The first concept is based on unweighted GDPs used in a Gini calculation for every country in the world. It shows a big divergence of incomes 1980-2000 and a convergence thereafter. The second concept takes into account population weights of every country in the GDP based Gini calculation. As Milanovic states it, China enters the stage in mid 80s to early 90s. When the large populations of prospering China and India is taken into account this starts driving inequality down which is what Baldwin is pointing to in his explanation of The Great

Convergence. The third concept of global inequality is based on Milanovic's own studies which use data from surveys measuring household income from thousands of individuals all over the world. This concept shows a really high global Gini of 0,70 which is higher than the two earlier examples. The data set goes back to mid 80s and shows no trend, either up nor down but still it contains a completely different message than both Baldwins idea of convergence and Milanovic's first two concepts. (Milanovic, 04:00-8:20).

China and India are the big drivers of inequality, as Baldwin also stated. The development of global income distribution is depending on these two countries (Milanovic, 8:30) and the development in the poorest countries. Not all poor countries have income data today so global inequality might be even worse which will show up when all countries eventually are measured (Milanovic, 09:45).

Sutcliffe shows many different ways of measuring inequality in his article. He points out that this is a complex matter and that we can identify both winners and losers in the multitude of models, and that one important view of inequality is the "*movement of the extremes*" where the winners are compared with the losers (Sutcliffe, 33).

The global Gini using PPP income and breaking up individual countries in its distribution percentiles results in a higher figure than any existing country of today (Sutcliffe, 34). This is the same argument as Milanovic when he presents his third concept (Milanovic, 6:20) interpreted in a very inequal world of today.

One example of the study of extremes that Sutcliffe presents is an inter-country divergence and convergence table using a simple GDP per capita variable and computing the ratio between the highest ten versus the lowest ten. As opposed to Baldwin's description of globalization this trend shows a convergence from 1950 to 1985 (from 36.2 in 1950 to 30.1 in 1985) and after that a steep divergence (from 30.1 in 1985 to 47.2 in 2001) (Sutcliffe, 19) which in a way is supported by Baldwin as he also notes that many countries have not gained of the globalization.

Sutcliffe also shows a weighted inter-country Gini curve (Sutcliffe, 22) which is a bit similar to Milanovic's second concept with China as a factor from 1980-1990. He contrasts this curve with a similar curve for all countries without China. This new inequality curve where China is excluded shows drastic rise in global Gini from 1960 to 2000. Taking population into account Sutcliffe accept that there has been convergence between 1990 and 2000, but that it hides the important negative effects in the poorest countries in Sub-Saharan Africa where 20 countries of those 38 with data in the comparison have had both falling national income per head and lowered life expectancy (Sutcliffe, 21).

Sutcliffe's compilation of income ratios between the blocs in the world also show the same effect. The income ratio for all blocs in the world as compared to the North bloc have declined for every bloc except Asia and China which starts a converging rise around 1980 (Sutcliffe, 22).

Ending reflection

This essay has dealt with the effects of globalization but mainly how to measure global inequality. Sutcliffe summarize his article that the search for a correlation between globalization and inequality is impossible (Sutcliffe, 34). Comparing Baldwin's globalization history with his ideas of divergence and convergence with Sutcliffe's and Milanovic's focused studies of global inequality, mainly in economic terms, is a delicate matter and maybe not possible to fulfil. They argue through different perspectives and they can all three be right. Even though they emphasize different findings, they all acknowledge poor countries getting poorer and a few lucky countries developing to the better. How the terms inequality and

poverty are to be defined and their impacts on society is what it is all about.

In my opinion the problem with poverty and global inequality is important and we need to work further to avoid debates and discussions on who's right and who's wrong. It is a fact that many people in the world live in extreme poverty with inhuman conditions, and their lives and their welfare need to be improved.