

9. Income Distribution and Poverty

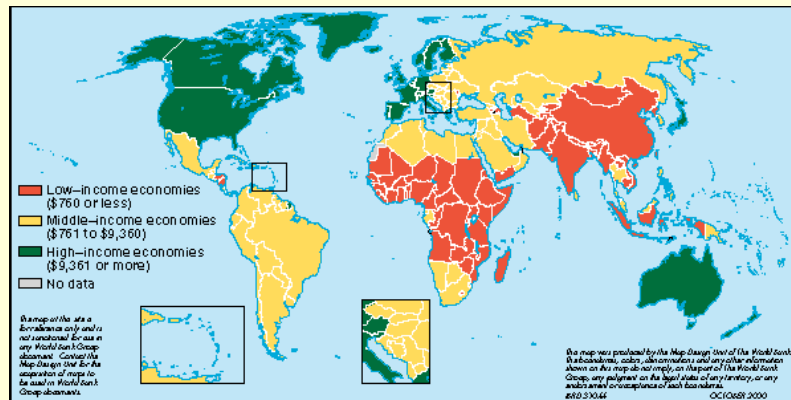
- Poverty
- Income distribution – how to?
- Global income distribution
- Canada income distribution

Reading: Epping (2001), #59, 60.

1. Introduction

- For a large part of the world's population, the industrial revolution which began over 200 years ago in Western Europe has yet to touch them.
- The fact that a large part of the world population is very poor is one of the most significant global issues of the 21st century.
- Promoting economic development remains a contentious and unresolved issue.
- While globalization has helped some regions/countries it did not have much impact on others, and according to some has actually hindered development.
- The World Bank is the primary international institution whose mandate it is to address the development problem on the part of the major world economies.

GNP per capita is a widely used index of economic development; it measures the value of a country's final output of goods and services in a year divided by its population. In 1998, countries with \$760 or less were low income countries; between \$761 and \$9,360 were middle income and high income otherwise.



Source: World Bank, www.worldbank.org

See [GNP per capita-2005-countries of the world](http://www.worldbank.org)

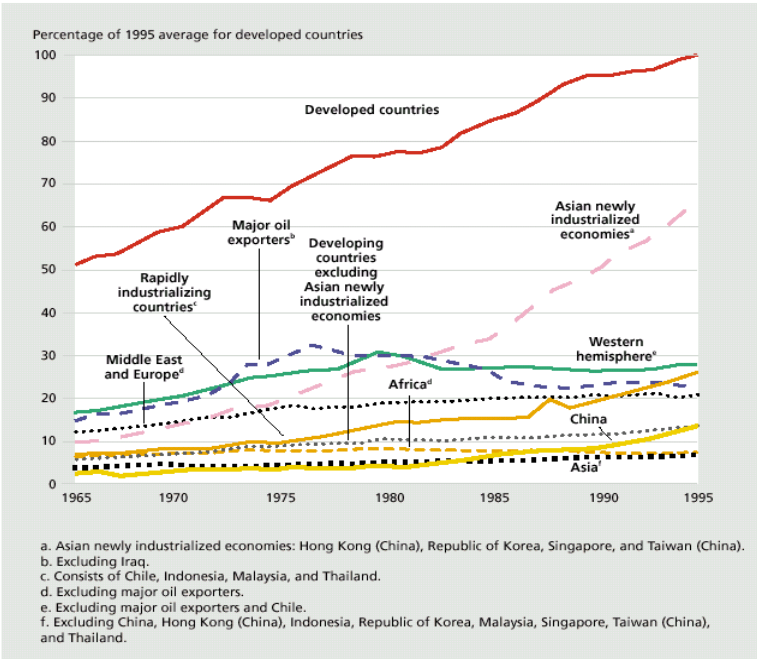
at <http://www.studentsoftheworld.info/infopays/rank/PNBH2.html>

Huge disparities

Convergence or divergence?

- Some parts of the world have been **catching up** to the developed economies—particularly in parts of Asia and Latin America—we call this **convergence**.
- Other regions are **falling behind** –or divergence
- Next chart shows how dramatic this difference is for example East Asia relative to Africa

Figure 4.4 Real GDP per capita in developed and developing countries, 1965–95



2. Poverty

Poverty measures:

Table 1: Poverty measures for \$1 a day

(a) Percentage of population

Region	1981	1984	1987	1990	1993	1996	1999	2002	2004
East-Asia and Pacific (EAP)	57.73	39.02	28.23	29.84	25.23	16.14	15.46	12.33	9.05
Of which China	63.76	41.02	28.64	32.98	28.36	17.37	17.77	13.79	9.90
Eastern-Europe+Central Asia (ECA)	0.70	0.51	0.35	0.46	3.60	4.42	3.78	1.27	0.94
Latin America+Caribbean (LAC)	10.77	13.07	12.09	10.19	8.42	8.87	9.66	9.09	8.64
Middle East+North Africa (MNA)	5.08	3.82	3.09	2.33	1.87	1.69	2.08	1.69	1.47
South Asia (SAS)	49.57	45.43	45.11	43.04	36.87	36.06	34.92	33.56	30.84
Of which India	51.75	47.94	46.15	44.31	41.82	39.94	37.66	36.03	34.33
Sub-Saharan Africa (SSA)	42.26	46.20	47.22	46.73	45.47	47.72	45.77	42.63	41.10
Total	40.14	32.72	28.72	28.66	25.56	22.66	22.10	20.13	18.09
Total excl.China	31.35	29.69	28.75	27.14	24.58	24.45	23.54	22.19	20.70

(b) Number of people

Region	1981	1984	1987	1990	1993	1996	1999	2002	2004
EAP	796.40	564.30	428.76	476.22	420.22	279.09	276.54	226.77	169.13
China	633.66	425.27	310.43	374.33	334.21	211.44	222.78	176.61	128.36
ECA	3.00	2.27	1.61	2.16	16.94	20.87	17.90	6.01	4.42
LAC	39.35	50.90	50.00	44.60	38.83	42.96	49.03	48.13	47.02
MNA	8.81	7.26	6.41	5.26	4.53	4.38	5.67	4.88	4.40
SAS	455.18	445.05	471.14	479.10	436.74	452.91	463.40	469.55	446.20
India	363.72	359.41	368.60	376.44	376.14	378.91	376.25	377.84	370.67
SSA	167.53	199.78	222.80	240.34	252.26	286.21	296.07	296.11	298.30
Total	1470.28	1269.56	1180.73	1247.68	1170.17	1087.81	1108.61	1051.46	969.48
Total excl.China	836.62	844.29	870.30	873.35	835.96	876.37	885.83	874.85	841.12

Source: Author's calculations for this paper.

Source: Chen and Ravallion, Absolute Poverty Measures for the Developing World, 1981-2004, World Bank, 2007.

Table 2: Poverty measures for \$2 a day

(a) Percentage of population

Region	1981	1984	1987	1990	1993	1996	1999	2002	2004
EAP	84.80	77.17	68.53	69.73	65.04	52.49	49.34	41.68	36.58
China	88.12	79.00	68.64	72.16	68.13	53.34	50.05	40.94	34.89
ECA	4.60	3.93	3.08	4.31	16.53	17.97	18.57	12.88	9.79
LAC	28.45	32.25	29.57	26.25	24.09	25.24	25.31	24.76	22.17
MNA	29.16	25.59	24.24	21.69	21.41	21.40	23.62	21.09	19.70
SAS	88.53	87.01	86.57	85.62	82.22	82.12	80.41	79.73	77.12
India	88.92	87.89	86.98	86.30	85.33	84.12	82.67	81.37	80.36
SSA	74.52	76.98	77.36	77.05	76.09	76.42	75.85	73.81	71.97
Total	66.96	64.25	60.73	60.79	59.44	55.52	54.24	50.69	47.55
Total excl. China	59.08	58.87	57.89	56.78	56.43	56.26	55.63	53.85	51.58

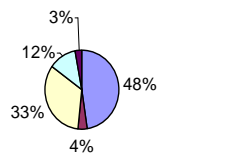
(b) Number of people (millions)

Region	1981	1984	1987	1990	1993	1996	1999	2002	2004
EAP	1169.74	1115.97	1040.71	1112.93	1083.21	907.83	882.70	766.26	683.83
China	875.77	819.11	744.07	819.11	802.86	649.47	627.55	524.24	452.25
ECA	19.78	17.38	14.03	20.07	77.83	84.88	87.94	60.75	46.25
LAC	103.90	125.58	122.30	114.85	111.08	122.30	128.44	131.14	120.62
MNA	50.56	48.62	50.24	48.91	51.80	55.40	64.50	60.92	59.13
SAS	813.04	852.39	904.21	953.00	973.99	1031.48	1067.15	1115.54	1115.77
India	624.92	658.92	694.71	733.13	767.39	798.07	825.93	853.32	867.62
SSA	295.46	332.87	365.02	396.32	422.11	458.37	490.58	512.62	522.34
Total	2452.47	2492.81	2496.50	2646.09	2721.72	2665.66	2721.31	2647.22	2547.94
Total excl. China	1576.70	1673.70	1752.42	1826.98	1918.86	2016.19	2093.75	2122.98	2095.69

Note: For region identifiers see Table 1. Source: Author's calculations for this paper.

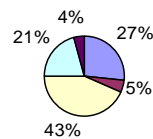
Source: see previous slide

Distribution of population living on less than \$2 a day - 1981



■ EAP ■ LAC □ SAS □ SSA ■ Others

Distribution of population living on less than \$2 a day - 2004



■ EAP ■ LAC □ SAS □ SSA ■ Others

EAP : East-Asia+ Pacific, including China

LAC: Latin America+Caribbean

SAS: South Asia, including India

SSA: Sub-Saharan Africa

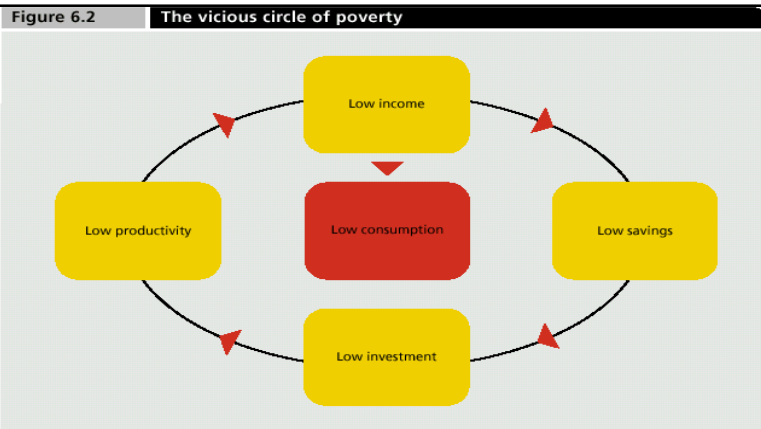
Others: Middle East, North Africa, Eastern Europe and Central Asia

Source: from previous table

The proportion of the world population living on less than \$2 a day has decreased significantly in East Asia and has increased significantly in South Asia and in Sub-Saharan Africa

What causes poverty?

- The very poor have to spend all of their income on basic necessities (food, shelter) and have none left over for saving.
- With no saving, people cannot acquire human capital or other forms of durable wealth such as tools, housing, or financial assets.
- Low capital implies low productivity which in turn leads to low incomes-circle closed.



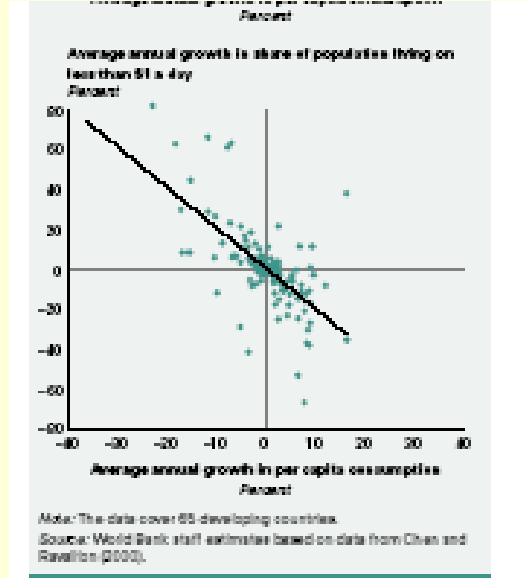
To get out of this cycle, investment and saving must be encouraged by:

- Economic growth;
- Better capital markets;
- Political stability;
- Remove confiscation of wealth by war, inflation, theft, or government-sanctioned expropriation of property.

The case of economic growth:

- In 1820, about 3/4 of the world population lived on under \$1/day;
- After two centuries of economic growth in Europe, this type of poverty is almost completely absent;
- Even in China, it has fallen to less than 20 percent of population and in the world as a whole at about 20 percent.

Strong relationship between poverty reduction and economic growth

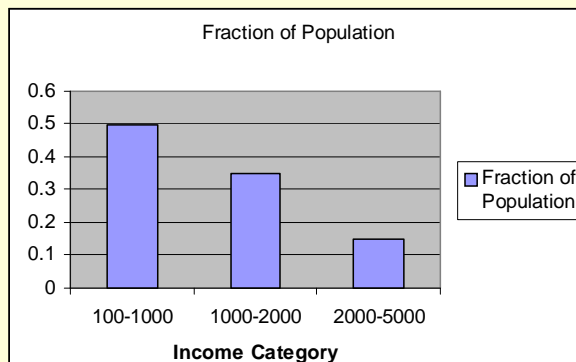


3. Income Distribution

- In any economy we are interested in the **distribution of income**: how many people in each income category from high to low.
 - Consider 100 people: 50 people earn from between \$100 to \$1000; 35 people earn from between \$1000 to \$2000 and 15 people earn between \$2000 and \$5000.

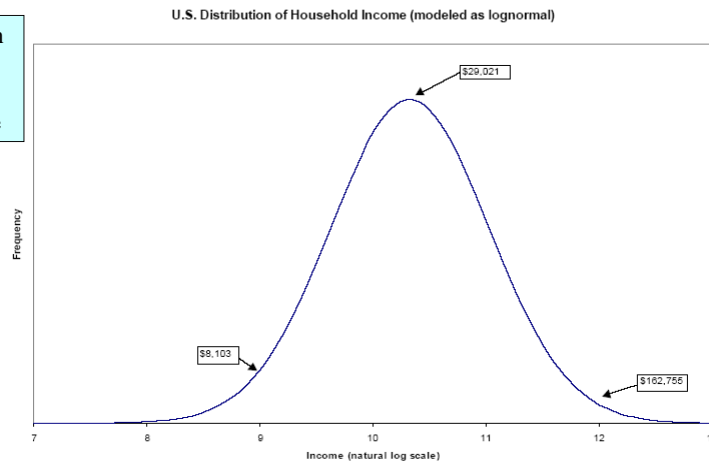
Use these data to construct a **histogram** of the income distribution:

- On horizontal axis level of income
- On vertical axis, the percentage of population in each income group.



- Alternatively, the **distribution of income** in an economy is obtained by using the logarithm of income on the horizontal scale and the frequency on the vertical axis.
- The income distribution in advanced economies is very close to log normal; i.e. normally distributed or the shape of a bell curve.

Use of log: a given scale increment corresponds to constant % change



Why is it the case?

- Income distribution reflects the complex interaction of many factors: wages, education levels, taxes, social policy, luck, etc.
- The **bell curve** indicates that the bulk of income concentrated in the middle with relative fewer very rich and very poor people (the tails of the distribution are thin).
- But in poor countries there are a lot of people who are in the lower end of the distribution. **Poverty measures** capture this phenomenon (see earlier slides).
- Inequalities are thus very pronounced.

Countries with greatest inequality				Countries with greatest equality			
	Gini index	Lowest 20%	Highest 20%		Gini Index	Lowest 20%	Highest 20%
1. Sierra Leone	62.9	1.1%	63.4%	1. Slovakia	19.5	11.9%	31.4%
2. Central African Republic	61.3	2.0	65.0	2. Belarus	21.7	11.4	33.3
3. Swaziland	60.9	2.7	64.4	3. Hungary	24.4	10.0	34.4
4. Brazil	60.7	2.2	64.1	4. Denmark	24.7	9.6	34.5
5. Nicaragua	60.3	2.3	63.6	5. Japan	24.9	10.6	35.7
6. South Africa	59.3	2.9	64.8	6. Sweden	25.0	9.6	34.5
7. Paraguay	57.7	1.9	60.7	7. Czech Republic	25.4	10.3	35.9
8. Colombia	57.1	3.0	60.9	8. Finland	25.6	10.0	35.8
9. Chile	56.7	3.3	61.0	9. Norway	25.8	9.7	35.8
10. Honduras	56.3	2.2	59.4	10. Bulgaria	26.4	10.1	36.8
11. Guinea-Bissau	56.2	2.1	58.9	11. Luxembourg	26.9	9.4	36.5
12. Lesotho	56.0	2.8	60.1	12. Italy	27.3	8.7	36.3
13. Guatemala	55.8	3.8	60.6	13. Slovenia	28.4	9.1	37.7
14. Burkina Faso	55.1	4.6	60.4	14. Belgium	28.7	8.3	37.3
15. Mexico	53.1	3.5	57.4	15. Egypt	28.9	9.8	39.0
16. Zambia	52.6	3.3	56.6	15. Rwanda	28.9	9.7	39.1
17. Hong Kong, China	52.2	4.4	57.1	17. Croatia	29.0	8.8	38.0
17. El Salvador	52.2	3.3	56.4	17. Ukraine	29.0	8.8	37.8
19. Papua New Guinea	50.9	4.5	56.5	19. Germany	30.0	8.2	38.5
20. Nigeria	50.6	4.4	55.7	20. Austria	31.0	6.9	38.0
21. Mali	50.5	4.6	56.2	21. Romania	31.1	8.0	39.5
21. Niger	50.5	2.6	53.3	22. Pakistan	31.2	9.5	41.1
23. Gambia	50.2	4.0	55.3	23. Canada	31.5	7.5	39.3
24. Zimbabwe	50.1	4.7	55.7	24. Korea, South	31.6	7.5	39.3
25. Venezuela	49.5	3.0	53.2	25. Poland	31.6	7.8	39.7
26. Malaysia	49.2	4.4	54.3	26. Indonesia	31.7	9.0	41.1
27. Russia	48.7	4.4	53.7	27. Latvia	32.4	7.6	40.3
28. Panama	48.5	3.6	52.8	27. Lithuania	32.4	7.8	40.3
29. Cameroon	47.7	4.6	53.1	29. Spain	32.5	7.5	40.3
30. Dominican Republic	47.4	5.1	53.3	30. Netherlands	32.6	7.3	40.1

Source: World Development Index 2002, World Bank

Gini coefficient: is a measure of statistical dispersion to measure inequality of income or wealth distribution. It is a value between 0 and 100 where 0 represents perfect equality (every one having the same income/wealth) and 100 perfect inequality (one person has all income/wealth and everybody else has zero income/wealth).

But growth is not the whole story:

- Controlling for growth there are large differences across countries in poverty reduction experience;
- In some cases appears growing equality associated with increased growth eg. Brazil;
- In other cases higher growth associated with higher income inequality-Mexico.

Is there a link between growth and inequalities?
 In other words, might growth affect inequality AND might inequality affect growth?

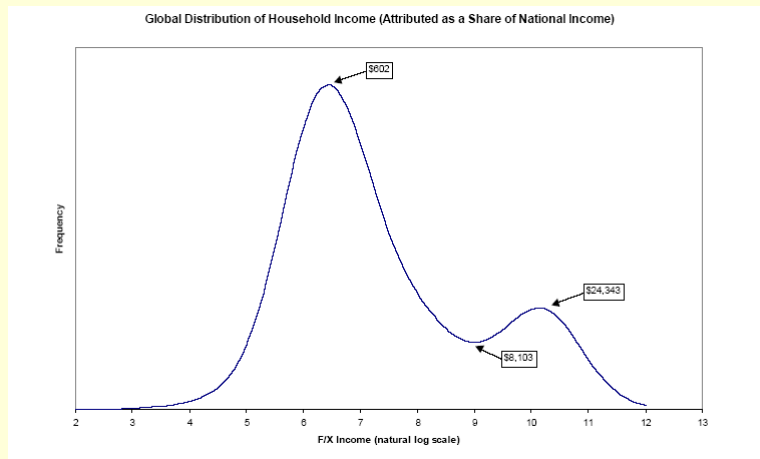
Why would inequality impact on economic growth?

- **Increased equality might encourage growth** because it leads to better social insurance (less vulnerability), higher levels of average education and lower population growth;
- **But** higher inequality may lead to increased savings and thus more capital accumulation (rich people tend to save more).

These important issues are largely unresolved.

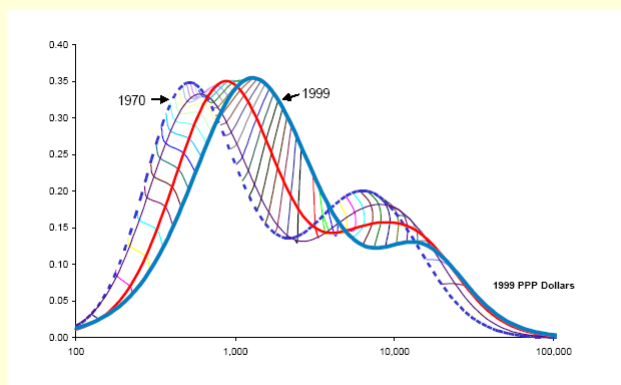
4. World Income Distribution

- The **world distribution of income** must account for the fact that the bulk of the world's population live in low-income countries
- When you look at world distribution of income you get what is called the “**Twin Peaks**” picture. This reflects the fact that the bulk of the world's population can be divided into two groups of low and high incomes with a significant valley between the two peaks.
- The valley corresponds to the global division of countries into the two groups—thus on average the people on the right are in the industrial countries and the people on the left are in the poor countries—the gap between the peaks –around 23,000US\$ (1995) is a statement about the average difference.
- There is a lot of debate about how this distribution evolves over time. Recently given the very rapid growth in China and India it appears that the two peaks are getting closer to each other and some even claim the valley as of 2003 has disappeared.



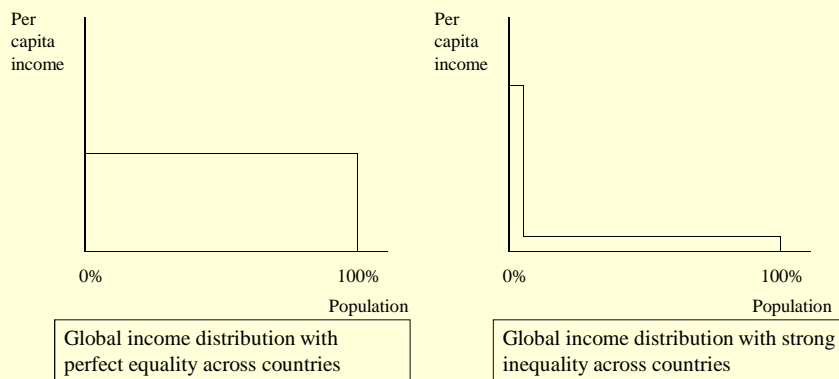
Source: *'One world or two? A snapshot of the global income distribution'*, S. Babones, based on 1995 data.

The shifting of the twin peaks over time: from **YURI DIKHANOV AND MICHAEL WARD** World Bank Economists. Is the valley between the peaks going to disappear?

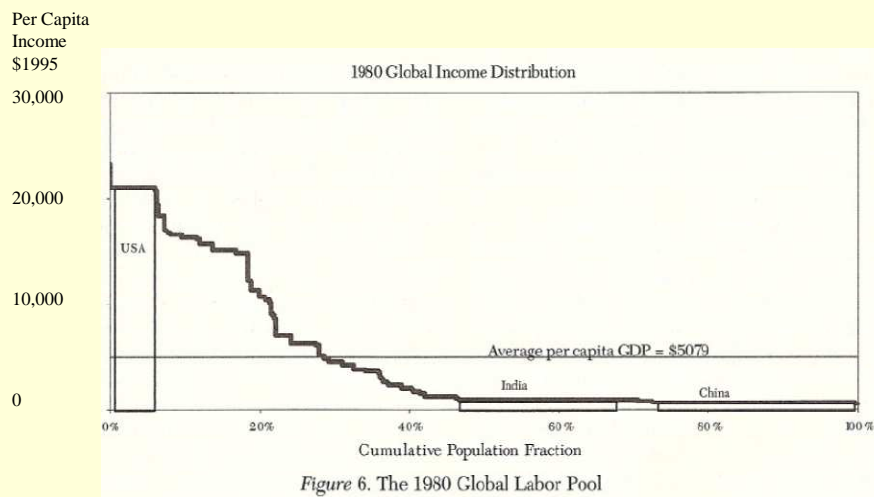


An alternative way of looking at global income distribution

- Take all countries in the world and rank them from richest to poorest on a per capita income basis.
- In a graph, have per capita income on the vertical axis and the cumulative population fraction (total=100%) on the horizontal axis where countries are ranked from richest to poorest.



The world in 1980

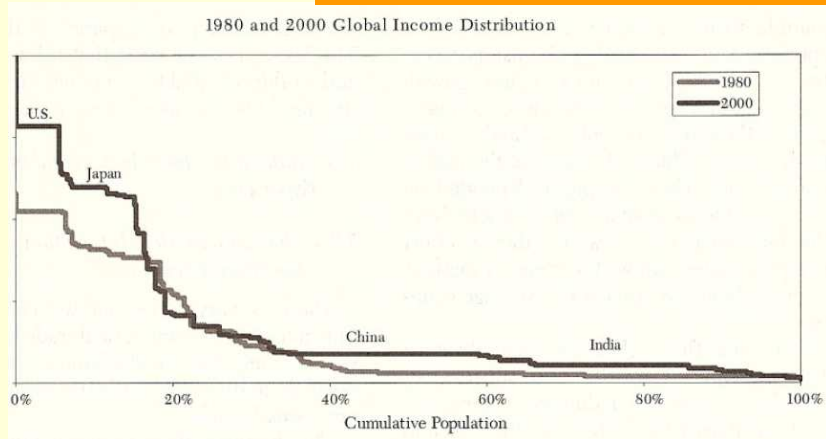


Source: Leamer, Journal of Economic Literature, March 2007

The world in 1980 and in 2000

'The wealthiest countries managed to prosper in the face of manufacturing jobs being tugged into the poor part of the globe while the middle class countries stagnated' (Leamer, 2007, p109).

Per
Capita
Income
\$1995



- This is income distribution based on country average per capita income weighted by their population;
- Global income distribution based on this measure is not becoming more equal!

Tables on Global Distribution of Income and Economic Activity

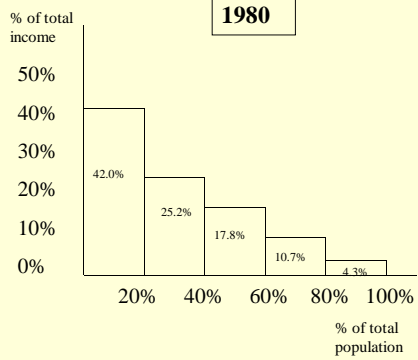
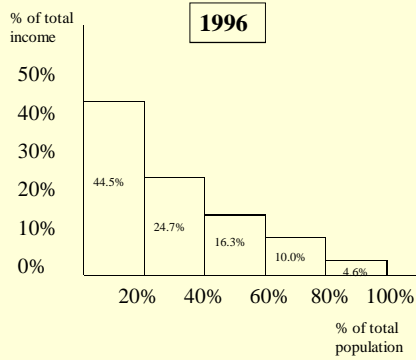
Table 1:

Global income distribution, 1960-91.

Year	Share of global income going to		Ratio of Richest to Poorest
	Richest 20%	Poorest 20%	
1960	70.2%	2.3%	30:1
1970	73.9%	2.3%	32:1
1980	76.3%	1.7%	45:1
1989	82.7%	1.4%	59:1
1991	85.0%	1.4%	61:1

Source: UNDP 1992, p. 34; 1994, p. 35.

The case of Canada:



	1994	1995	1996
Incidence of low income, % all people	17.1%	17.8%	17.9%

Low-Income Cut-offs per Community Size - 1995					
Family size	500,000 +	100,000-499,999	30,000-99,999	<30,000	Rural
1	\$16,874	\$14,473	\$14,372	\$13,372	\$11,661
3	\$26,232	\$22,500	\$22,343	\$20,790	\$18,129
5	\$35,494	\$30,445	\$30,233	\$28,132	\$24,530

Before taxes and after transfers incomes

Source: Canadian Council of Social Development