

EE461

Lecture 6: Poverty

March 10th, 2012

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AM I POOR?

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Definition of Poverty

- The condition of *not having* the means to afford basic human needs such as clean water, nutrition, health care, clothing and shelter
- The condition of having *fewer resources or less income than others* within a society or country, or compared to worldwide averages

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Absolute Poverty

- Gordon's "Indicators of Poverty & Hunger", for the UN, defines absolute poverty as the absence of *any 2 of the following 8* basic needs:
 - Food: Body Mass Index must be above 16.
 - Safe drinking water: Water must not come from solely rivers and ponds, and must be available nearby (less than 15 minutes walk each way).
 - Sanitation facilities: Toilets must be accessible in or near the home.
 - Health: Treatment must be received for serious illnesses and pregnancy.
 - Shelter: Homes must have fewer than four people living in each room. Floors must not be made of dirt, mud, or clay.
 - Education: Everyone must attend school or otherwise learn to read.
 - Information: Everyone must have access to newspapers, radios, televisions, computers, or telephones at home.
 - Access to services: the complete panoply of education, health, legal, social, and credit market

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Relative Poverty

- Defines "poverty" as being below some relative poverty threshold
 - A subjective matter
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- If everyone's real income in an economy increases, but the income distribution stays the same, then what happens to the rate of relative poverty ?

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MEASUREMENT OF POVERTY

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Basic Concept

- All commonly used poverty measurements take 3 ingredients as the starting point:
 1. The average *per capita* income in the economy
 2. The *absolute* distribution of income in the economy
 3. A definition of a *poverty line (PL)*

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Poverty Line

- The *minimum level of income* deemed necessary to achieve an adequate standard of living in a given country
 - significantly higher in developed countries than in developing countries
- The numbers of people living below PL are thus not comparable among countries (Why?)

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To Define a Poverty Line

1. Is the basis income or consumption, and how comprehensively the chosen concept be measured?
2. What is the recipient unit: individual, family, per capita, or adult equivalent?

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To Define a Poverty Line

3. Will there be a single poverty line?
4. Is the poverty line income defined scientifically, politically, subjectively, or as a matter of convenience?

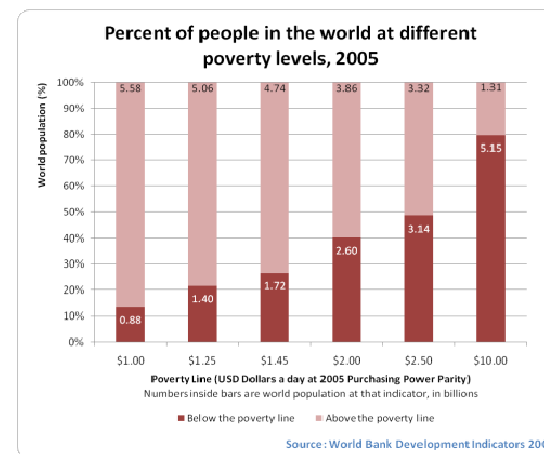
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To Define a Poverty Line

5. What use should be made of indicators other than consumption or income?
 - UN and Sen have been the forceful and consistent voice for
 - Could serve as a 'contingent measures'

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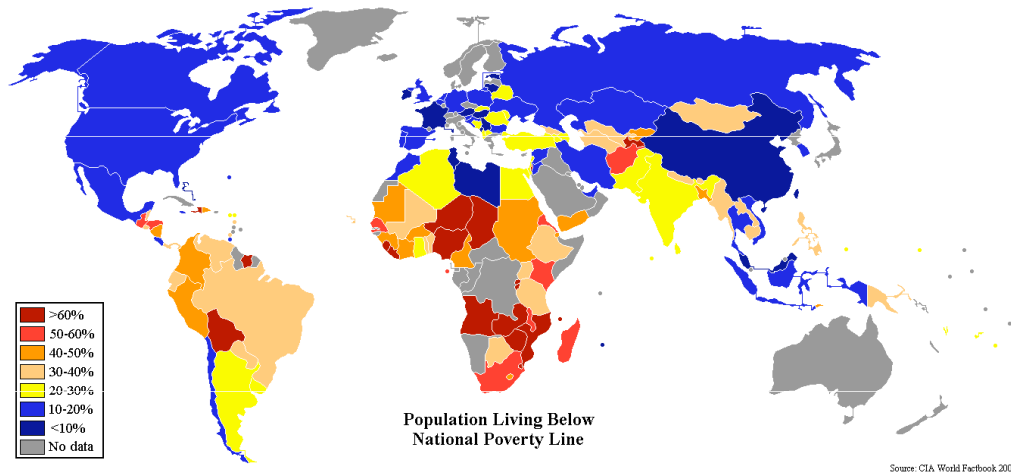
At Different Poverty Lines...



- For absolute poverty, the fraction of the so-called 'poor' depends on poverty line
- What happens when we change from \$1-to \$2-poverty line?

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To Live as a Poor...



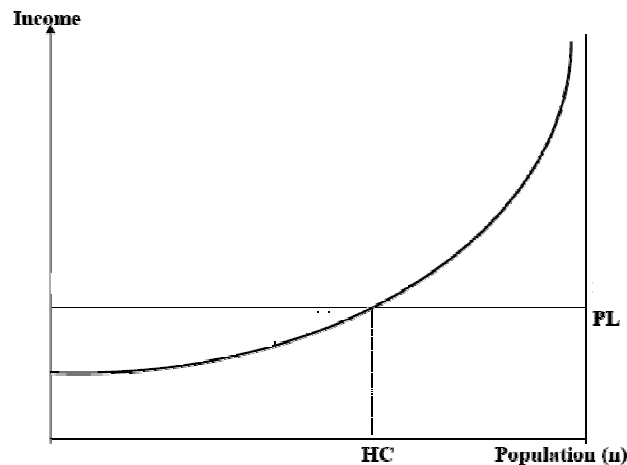
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Define Poverty: Food Poverty

- The inability to access a nutritionally adequate diet and the related impacts on health, culture and social participation
- Threshold of minimum nutrition subsistence of 2,100 kCal per day
- Often used in crisis or emergency relief
- Simple and clear concept, but

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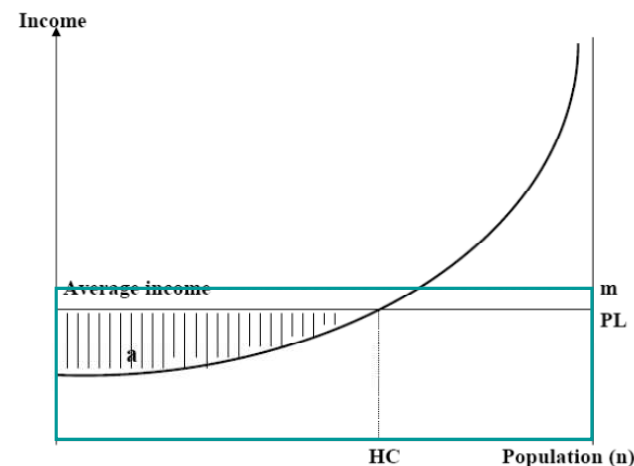
Poverty Measurement: Headcount Ratio



- The number of people below the poverty line as a ratio of the total population

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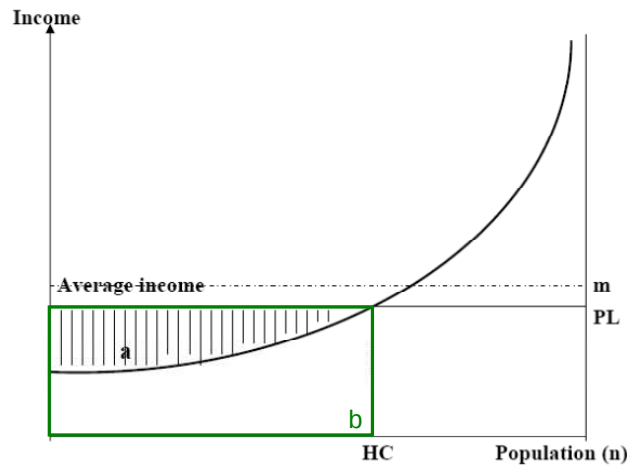
Poverty Measurement: Poverty Gap Ratio



- The ratio of the income needed by those below the poverty line to get them to the poverty line to **total income** of the country

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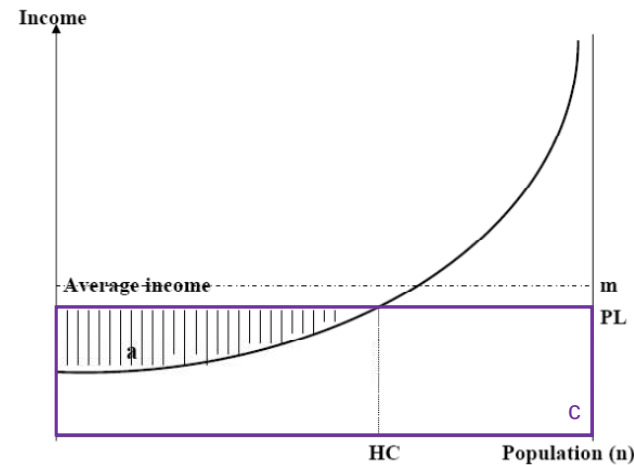
Poverty Measurement: Income Gap Ratio



- The ratio between average income lacking for those below the poverty line and the poverty line itself

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Poverty Measurement: Poverty Gap Index



- The mean shortfall from the poverty line (counting the non poor as having zero shortfall), expressed as a percentage of the poverty line

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Poverty Measurement: Squared Poverty Gap Index

- A weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves

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The FGT Index

- Developed by Foster, Greer, and Thorbecke in 1984
- Combined info from HCR, PGR, Gini and CV

$$FGT_{\alpha} = \frac{1}{n} \sum_{y_i < p} \left(\frac{PL - y_i}{PL} \right)^{\alpha}$$

- α is “sensitivity” parameter
- If α is low, then
- If α is high,
- What happens if $\alpha = 0$? $\alpha = 1$? $\alpha = 2$?

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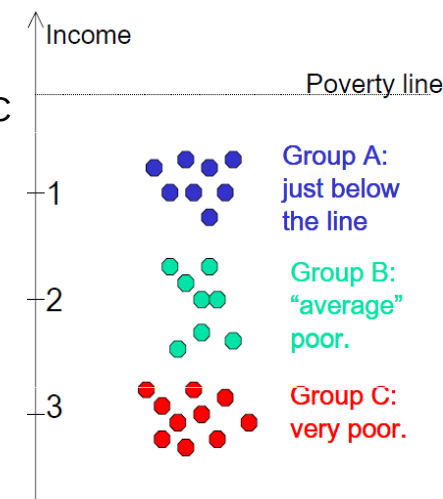
Which one to choose?

- Depends on your question:
 - “How large is the share of the population that live in absolute poverty?”
 - “By how much do the incomes of the poor fall below the poverty line?”
 - “By how much would taxes have to be increased to transfer income from the population at large to the poor?”
 - “How severe is the poverty problem in the country?”

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Which one to choose?

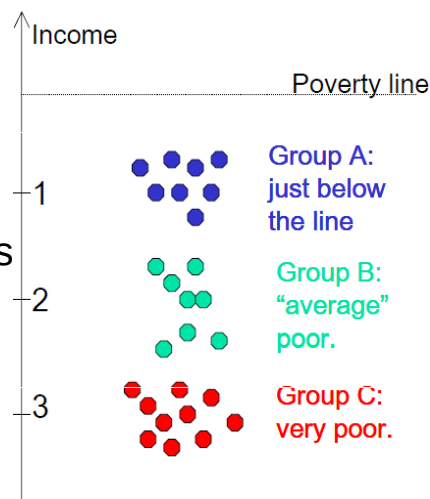
- HCR treats all the poor similarly
 - Individuals in groups A, B and C are given a value of 1
- PGR, IGR, and PGI gives a value relative to the distance to the poverty line
 - Those in B have on average twice the value of those in A
- SPGI gives a value of the squared distance
 - Those in B have on average a value 4 times that of those in A



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Which one to choose?

- Using HCR as a criteria, policies would focus on group A
 - Why A?
- Using PGR, IGR, or PGI, focus would be on
 - All poor are treated equal and in aggregate
- Using SPGI, focus would be on group
 - More weight are given to those with biggest distance from PL



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POVERTY AXIOMS

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Anonymity Axiom

- Consider 2 economies with income as follows:

Y_1					Y_2				
Person	α	β	γ	δ	Person	A	B	C	D
Income	1	2	3	4	Income	1	2	3	4

- Which economy is poorer?

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Income Homogeneity Axiom

- Suppose there is a Y_3 with income:
 $Y_3 = (2,4,6,8)$
- How does Y_3 compare with Y_1 or Y_2 ?
- Recall Income Homogeneity (or Scale Independence) Axiom for income distribution
- When poverty line is kept constant, when everybody's income increases, poverty MUST fall

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Population Homogeneity Axiom

- Suppose there is a Y_3 and Y_4 with income:
 $Y_3 = (2,4,6,8)$ and $Y_4 = (2,2,4,4,6,6,8,8)$
- Suppose Poverty line is at \$2.50
- Two possible analyses:
 - Y_4 has twice as much poverty as Y_3 (2 persons in poverty) OR
 - They have the same poverty situation, as 25% of population is living in poverty

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Monotonicity Axiom

- Suppose we have $Y_3 = (2,4,6,8)$ and poverty line is at \$2.50
- Suppose there is an outside transfer to the poorest person of \$1 such that $Y'_3 = (3,4,6,8)$

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Distributional Sensitivity Axiom

- Suppose we have $Y_1 = (1,2,3,4)$ and poverty line is at \$2.50
- Suppose that the one with income of \$1 transfer \$0.25 to the one with income of \$2 so that $Y'_1 = (0.75, 2.25, 3, 4)$
- How do we compare Y_1 with Y'_1 ?
- Distributional Sensitivity Axiom suggests that after the transfer, the poverty situation is

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WHY AM I POOR?

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Determinants of Poverty

- Let's take poverty as a function of
 1. Income distribution
 2. Average income
- $\theta_p = y_p/Y$ and, hence, $y_p = \theta_p Y$
- where θ_p is the ratio of income of the poor (y_p) to total income (Y)
- Differentiate this expression and divide by $y_p = \theta_p Y$, we have that:

$$\Delta y_p / y_p = \Delta \theta_p / \theta_p + \Delta Y / Y$$

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4 Possible Cases of Change in Poverty

$$\Delta y_p / y_p = \Delta \theta_p / \theta_p + \Delta Y / Y$$

Sign of $\Delta \theta_p / \theta_p$	Sign of $\Delta Y / Y$	Sign of $\Delta y_p / y_p$
+	+	> 0
-	-	< 0
+	-	?
-	+	?

- Direction of change in *absolute income of the poor* (however defined and measured) over time has no definite answer

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WHY DO I STAY POOR?

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Cycle of Poverty

- Why do the poor stay poor?
- There is a set of factors that influence the poverty in a way that once started, it is likely to continue *unless* there is an outside intervention
- **But** where does the “outside intervention” come from?

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Factors that Cause the Cycle: 1. Family Background

- Harding et al (2003) gives parental education, occupational rank, income, marital status, family size, region of residence, race, and ethnicity as the factors
 - Suggests a simple strategy: supplementing the wages of the poor or changing immigration policy so that it drives down the relative wages of skilled rather than unskilled workers

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Factors that Cause the Cycle: 1. Family Background

- “Do poor children become poor adults?” (Corak, 2006) observes that in the US, almost 1/2 of children born to low income parents become low income adults, 4/10 in the United Kingdom, and 1/3 in Canada (while rich kids tend to be rich adults too!)
 - Suggests governments to focus on investments in children to ensure that they have both the skills and opportunities to succeed in the labor market

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Factors that Cause the Cycle:

1. Family Background

- “What money can't buy: family income and children's life chances” (1997) by Susan E. Mayer proposes that increasing family income alone is NOT enough to break the cycle of poverty
 - children who were ahead in school were usually those who
 - increasing parents income has on reading and math test scores or years spent in education
 - in order to break the cycle of poverty,

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Factors that Cause the Cycle:

2. Modern Education

- Education can perpetuate a cycle of poverty
- Gaps between students from different schools are caused by quality of teachers
- As a result, certain schools do not producing many students that go on to college
- Also, tracking (students separated by academic ability into groups for all academic subjects within a school) can perpetuate poverty; some students did not receive the opportunity to learn

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Factors that Cause the Cycle:

3. Culture of Poverty

- A controversial issue
- The poor have their own culture with different values and beliefs which keep them trapped within the cycle generation to generation
 - Payne (2001) “A Framework to understand Poverty”
- Explain why there exists a class system even in the free market economy such as the US
- The poor believe that there is no way for them to get out of poverty, and so in order to make the best of their situation one must and experience what they can when they can

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Factors that Cause the Cycle:

4. Life Shocks

- Can be endured only to a limited extent, after which people are much more likely to be tipped into hardship
- People who had 8 or more life shocks were dramatically more likely to live in poverty than those who had 0 to 7 life shocks
- Example of shocks:
 - Divorce, Forced sale of house, Unexpected and substantial drop in income, Eviction, Bankruptcy, Substantial financial loss, Layoffs, Becoming a sole parent, 3 months or more unemployed, Major damage to home, House burgled, Victim of violence, Imprisonment and other sentences, Illness lasting three weeks or more, Major injury or health problem, Unplanned pregnancy

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Breaking the Cycle

- While the causes of poverty are still debated, several attempts by the Governments have been made to break the poverty cycle
- In “Children in Jeopardy: Can We Break the Cycle” (Harris, 1996), children can be helped to begin breaking the cycle of poverty by...

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POVERTY TRAP

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Poverty Trap: Definition

- “... any self-reinforcing mechanism which causes poverty to persist...” Azariadis and Stachurski (2005)
- Several economic causes: high marginal tax rate, limited access to credit and capital markets, extreme environmental degradation, corrupt governance, capital flight, poor education systems, disease ecology, lack of public health care, war, or poor infrastructure
- Example of countries in poverty trap: Sierra Leone and Congo

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Case study: Sierra Leone



- Annual GDP of 1.9 bn USD
- Agriculture-based (58.5%)
- Exporter of diamonds, gold, minerals
- Relies on external aid

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Case study: Sierra Leone

- Why in poverty trap?

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Jeffrey Sachs' Approach to Poverty Trap

- A set of policy initiatives can end the trap
- Aid agencies should behave as **venture capitalists** funding start-up companies
 - Once VCs choose to invest in a venture, they do not give only 1/2 or 1/3 of the amount they feel the venture needs (If they did → money wasted) but rather give the venture the full amount and benefit both parties
- Likewise, Sachs proposes that

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Jeffrey Sachs' Approach to Poverty Trap

- Sachs proposes public sector to focus mainly on investments in...
 - human capital (health, education, nutrition)
 - infrastructure (roads, power, water and sanitation, environmental conservation)
 - natural capital (conservation of biodiversity and ecosystems)
 - public institutional capital (a well-run public administration, judicial system, police force)
 - parts of knowledge capital (scientific research for health, energy, agriculture, climate, ecology)

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“The End of Poverty” (2005)

- On a larger scale, Sachs coined the term “clinical economics”
- Like patients, countries are complex system, requiring differential diagnosis, an understanding of context, monitoring and evaluation, and professional standards of ethics, followed by a specifically tailored prescription

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Criticisms

- On foreign aid: William Easterly presents statistics that historically, several middle-income countries escaped from poverty trap *without* foreign aid
- On MDGs: Amir Attaran argues that the UN has misled people by setting specific, but immeasurable, targets for the MDG's
- On Bolivian case: Naomi Klein argues that the radical reforms pushed by Sachs were *neither democratically agreed upon nor achieved without violent state repression* and left the majority of Bolivians in worse circumstances

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CURRENT POVERTY SITUATION IN THAILAND

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A Big Picture

Indicator	2000	2010
Poverty Ratio	20.98%	
Headcount	12.6 mn persons	
Poverty Line	1,135 Baht/month	
Poverty Gap Ratio	4.2%	
Poverty Severity	1.3%	

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A Closer Look...

Indicator	2000	2010
HCR of the poorest region	35.34%	
Province with highest HCR	Udon Thani (60.6%)	
Household Debt	68,405 Baht/Household	
Ratio of population under Food Poverty	1.76%	

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CONCLUSION

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So Many Things...

- Lots of measurements, concepts, theories, axioms, empirics, criticisms, etc.
- Only one measurement of poverty may not suffice
- Poverty, economic growth, income distribution, population growth, etc. all intertwine
- Seemingly Thailand improves its poverty position, but still lots of problems to solve

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