Interactive session

Brief technical note on poverty indices

December 3, 2013

Measures

➢ Number of poor – Poverty Rate or Headcount Poverty Rate
  ➢ how many people are below the poverty line (z)
  ➢ $\alpha = 0$
➢ Depth of poverty or Poverty Gap
  ➢ How much money is needed to bring all the poor up to the poverty line (increase incomes y_i^* to z)
  ➢ $\alpha = 1$
➢ Severity of poverty (square poverty gap)
  ➢ How far are people from poverty line
  ➢ $\alpha = 2$

$$PG \equiv \frac{1}{n} \sum_{i=1}^{q} \left(1 - \frac{y_i}{z} \right)^{\alpha} = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z} \right)^{\alpha}$$

Example of calculations

- Poverty headcount: 3 out of 10=30%
- Poverty gap=((2-1)/2+(2-1.5)/2+(2-1.9)/2)/10=8%
- Poverty deficit/shortfall=((2-1)/2+(2-1.5)/2+(2-1.9)/2)/3=26.6%
- Poverty deficit shows by how much average poor is below the poverty line, it is equal poverty gap/ headcount (8/30=26.6)
- Poverty severity=((((2-1)/2)^2+((2-1.5)/2)^2+((2-1.9)/2)^2)/10=3.15%
- What if the poorest person falls just $0.5 a day consumption?
- Poverty gap is then becoming 10.5% (increase by a third), but poverty severity will be 6.275% (doubles)