Chapter 8: Poverty and Undernutrition

Key Issues

1. Concept and Measurement
2. Basic features of poverty
3. Functional impact of poverty
   – Poverty and credit
   – Poverty, nutrition, and labor markets
   – Poverty and discrimination

Key Concepts: Poverty Line, Absolute and Relative poverty, Head Count Ratio, Poverty Gap
The most visible feature of developing countries is wide-spread poverty. But what is poverty? Poverty refers to inability of individuals to have access to a minimum level of acceptable standard of living in a society. Poverty is usually measured by using poverty line, which is a critical threshold of income, consumption, or more generally access to goods and services below which individuals are declared to be poor. There are number of conceptual issues associated with poverty line.

1. Overall expenditure or item-by-item consumption?
2. Absolute or relative
3. Temporary or Chronic
4. Households or individuals
Poverty lines are most commonly defined in terms of minimum income/expenditure. An individual whose income/expenditure falls below certain level of income or poverty line is called poor. Let $y_i$ be the income/expenditure of individual $i$ and $p$ be the poverty line. Suppose that number of individuals in a society is $n$. Now we define several measures of poverty.
Head Count Ratio (HCR)

Head count (HC) refers to the number of individuals who are poor in a society. This is given by number of individuals whose income/expenditure falls below poverty line, $p$.

$$HC = \sum_{y_i < p} i. \quad (1)$$

Head count ratio measures the incidence of poverty, which is simply the proportion of individuals in a society who are poor. This is given by

$$HCR = \frac{HC}{n} = \frac{\sum_{y_i < p} i}{n}. \quad (2)$$

While this measure of poverty is widely used. It has one critical problem. It does not tell us about the depth of poverty or how far away poor are from non-poor.
Poverty Gap Measures

Poverty gap measures are designed to measure the depth of poverty. It tells us by how much income or consumption of poor falls short of poverty line. It gives an idea about how much resources are required to lift poor people out of poverty. Two types of poverty gap measures are used: poverty gap ratio and income gap ratio. Poverty gap ratio (PGR) measures the amount of resources (income or expenditure) required to bring all poor to the poverty line as a percentage of average income. Let $m$ be the average income of in a society. Then

$$PGR = \frac{\sum_{y_i<p}(p - y_i)}{nm}.$$  \hspace{1cm} (3)

The numerator of (3) the total amount of extra income required to bring all poor to the poverty line. The denominator is the total income of the society. Income gap ratio (IGR) is closely related to PGR and is defined as

$$IGR = \frac{\sum_{y_i<p}(p - y_i)}{pHC}.$$  \hspace{1cm} (4)
HCR and PGR ignore the relative depravity or inequality among poor. Redistribution of income among poor does not affect these ratios. FGT index is developed to take account of inequality among poor. It is given by

\[ P_\alpha = \frac{1}{n} \sum_{y_i < p} \left( \frac{p - y_i}{p} \right)^\alpha. \]  

(5)

Note that when \(\alpha = 0\), \(P_0 = HCR\). When \(\alpha = 1\), we have \(P_1\) simply becomes a variant of poverty gap measure. For \(\alpha\) rises, FGT index increasingly becomes sensitive to poverty gaps. For \(\alpha > 1\), this index satisfies **weak transfers principle**. Weak transfers principle states that a transfer of income from any person below poverty line to anyone less poor, while keeping the set of poor unchanged, must raise poverty.

FGT index has another desirable property. It can be decomposed to study poverty among various subgroups – men-women, rural-urban etc.
Poverty: Empirical Observations

1. Demographic features: Poor households on average have larger size compared to non-poor households.

2. Rural and Urban Poverty: In general, incidence of poverty is much higher in rural areas compared to urban areas.

3. Assets: Poor households are characterized by lack of assets.

4. Nutritional status: In general, the incidence of malnutrition is much higher among poor.
Poverty, Credit, and Insurance

As discussed earlier, poor households are characterized by lack of assets. Lack of assets is both the cause and consequence of low accessibility to credit markets by poor. Poor are shut out from the credit market due to two reasons. Firstly, borrowing usually requires putting up of collateral. But poor individuals do not have appropriate collateral. Secondly, poverty reduces the incentives for the poor to repay loan. Poor are much more exposed to ups and downs of life. Typically, they are engaged in occupations where income is much more variable and exposed to vagaries of nature. Given their low income and wealth they also require more insurance. However, poverty reduces the scope of formal insurance. For insurance, incidents must be verifiable. Secondly, the actions of insured individuals must be verifiable. Thirdly, verification of these things is costly. Fourthly, we require lot of record keeping. Finally, enforcement mechanism must be strong. Developing countries usually lack last two. Also verification may not be easy.
Undernutrition reduces the capacity to work in various ways. It retards body growth and development of muscles, increases illness, and makes individuals more susceptible to infections. Undernourished individuals are easily fatigued and exhibit marked psychological changes, manifested in mental apathy, depression, and lower intellectual capacity. In short, undernourished workers are less attractive to employers. This limits the employment and earnings potential of poor individuals. Poverty leads to undernourishment and undernourishment leads to low income of poor. Thus, poor are caught in a poverty trap.
Poverty can lead to unequal sharing of resources within household. In particular, it may lead to discrimination against women and elderly in the allocation of household resources. As discussed earlier, to participate in economic activities one requires certain minimum level of food and other amenities. However, in a situation where resources are scarce, equal allocation among household members may not increase earnings capacity much. In that case, household may like to allocate more resources to members with best earnings potential. This may lead to less resources being allocated to women and elderly.