

MEASURING POVERTY: DEFINING AN INDICATOR OF WELFARE



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LEARNING OBJECTIVES

After completing the module, the participant should be able to:

- Summarize the three steps required to measure poverty
- Define consumption and income as measures of welfare
- Summarize the problems that arise in measuring income and consumption
- Describe and evaluate the use of equivalence scales
- Identify other measures of household welfare
- Argue the case that there is no ideal measure of welfare.

STEPS IN MEASURING POVERTY



1. *DEFINING AN INDICATOR OF WELFARE*
2. Establishing a minimum acceptable standard of that indicator to separate the poor from the non-poor (*the poverty line*)
3. Generating *a summary statistic* to aggregate the information from the distribution of this welfare indicator relative to the poverty line



TOPICS

- 1. INTRODUCTION**
- 2. CHOOSE AN INDICATOR OF WELFARE:**
 - a. Candidate 1: Income**
 - b. Candidate 2: Consumption expenditure**
 - c. Candidate 3: Other measures of household welfare**



1. INTRODUCTION

INDICATOR OF WELFARE

a. **Monetary measures (economic welfare):**

- Household income- per capita measure of income
- Household consumption expenditure- per capita measure of consumption expenditure

b. **Non-monetary measures:**

- Indicators based on household members, such as: infant mortality rate, child schooling, life expectancy, etc
- Indicators based on household characteristics, such as: housing conditions, proportion of spending devoted to food, etc



2. CHOOSE AN INDICATOR OF WELFARE:

Candidate 1:

INCOME

1. **Practical problems arise:**

- What is income?
- Can it be measured accurately?

2. **Measure of Income (Haig and Simons):**

Income = consumption + change in net worth

Example:

I had assets of \$10,000 at the beginning of the year.

During the year I spent \$3,000 on consumption.

At the end of the year I had \$11,000 in assets.

Then my income was \$4,000 (\$3,000 was spent + the remaining \$1,000 added to my assets).

3. Problems of income measure:

- a. The appropriate time period is not clear (one year? 5 year? A life time?). Reporting period might not capture the “average” income of the household.
- b. It is easy to measure components of income such as wages and salaries. It may be possible to get adequate (if understated) information on interest, dividends, and income from some types of self-employment, but:

It is hard to get accurate measure of certain income, such as farm incomes, or the value housing services, or capital gain(e.g. the increase in the value of animals on a farm, or the change in the value of a house that one owns).

3. Problems of income measure (continued)

c. Income tend to be understated, because:

- people forget, when asked up to year before
- people may be reluctant due to tax or illegal income
- some parts of incomes are difficult to observe, e.g. the extent to which the family buffalo has risen in value.



2. CHOOSE AN INDICATOR OF WELFARE:

Candidate 2:

CONSUMPTION EXPENDITURE

1. An expenditure measure of welfare may be denoted by:

$$y_i = p \cdot q = e(p, x, u)$$

where:

- y_i is consumption measure for the household i ,
- p is a vector of prices of goods and services,
- q is a vector of quantities of goods and services consumed,
- $e(.)$ is an expenditure function,
- x is a vector of household characteristics,
- u is level of utility or well-being achieved by the household.


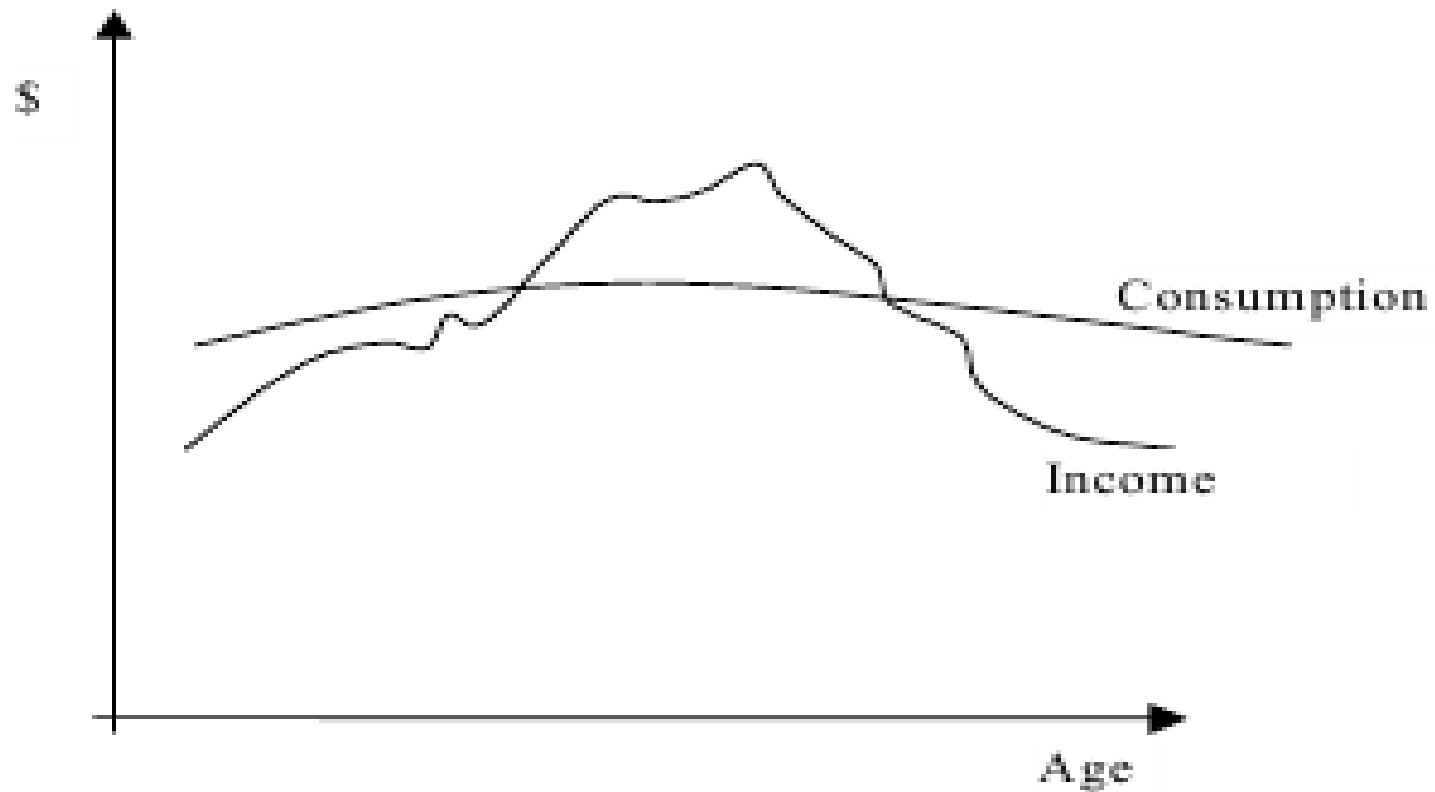
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2. Consumption includes both goods and services that are purchased, and those that are provided from one's own production
 3. Advantage of consumption compared to income:
 - consumption remains relatively stable.
 - household may be more able, or willing, to recall what they have spend rather than what they earned.

Figure 1. Life Cycle Hypothesis: Income and Consumption Profile over Time



4. Consumption is likely to be systematically understated, because:

- Households tend to under-declare what they spend on luxuries (e.g. alcohol, cakes) or illicit items (drugs, prostitution)
- Question matter: **detail and not detail**. When the questions are more detailed, respondents are likely to remember in more detail and to report higher spending.
- Underestimate of **prices from own production** when there is no market mechanism.

5. Measuring Durable Goods

- Durable goods, such as bicycles and TVs, are bought at a point in time, and then consumed (i.e. eaten up and destroyed) over a period of several years.
- Consumption should only include the amount of a durable good that is eaten up during the year, which can be measured by the change in the value of the asset during the year, plus the cost of locking up one's money in the asset.

- **Example:**

My watch was worth \$25 a year ago, and is worth \$19 now, then I used \$6 worth of watch during the year; I also tied up \$25 worth of assets in the watch, money that could have earned me \$2.50 in interest (assuming 10%) during the year. Thus the true cost of the watch during the year was \$8.50.

6. Measure the value of housing services

- If you own your house, how much you would have to pay if you had to rent it?
- Standard procedure is to estimate:

Rent = f (area, running water, year built, type of roof, location, number of bathrooms, ...)

- For all households that own their housing, this imputed rental, along with the costs of maintenance and minor repairs, represents the annual consumption of housing services.

7. Measure the value of Weddings and Funerals

- Families spend money on weddings is often excluded when measuring household consumption expenditure. The logic is that the money spent on weddings mainly gives utility to the guests, not the spender.
- Alternatively one might think of wedding expenditures as rare and exceptional events, which shed little light on the living standard of the household.
- Similar considerations apply to other large and irregular spending, on items such as funerals and dowries.

8. Accounting for household composition differences

a. Consumption Per capita:

Total household expenditure divided by number of people in the household.

Disadvantages:

- Different individuals have different needs. A young child needs less food than an adult, a manual laborer requires more food than an office worker.
- There are economies of scale in consumption (at least for such items as housing). It costs less to house a couple than to house two single individuals.

8. Accounting for household composition differences (cont.)

b. Adult Equivalents:

- apply a system of weights.
- each member of the household counts as some fraction of an adult male.
- household size is the sum of these fractions and is not measured in numbers of persons but in numbers of *adult equivalents*.
- In the abstract, the notion of equivalence scale is compelling. It is much less persuasive in practice, because of the problem of picking an appropriate scale.

Table 2.6. Which indicator of welfare: income or consumption?

Income ("potential")	
Pro: <ul style="list-style-type: none"> • Easy to measure, given the limited number of sources of income. • Measures degree of household "command" over resources (which they could use if they so wish). • Costs only a fifth as much to collect as expenditure data, so sample can be larger. 	Con: <ul style="list-style-type: none"> • Likely to be under-reported. • May be affected by short-term fluctuations (e.g. the seasonal pattern of agriculture). • Some parts of income are hard to observe (e.g. informal sector income; home agricultural production, self employment income). • Link between income and welfare is not always clear. • Reporting period might not capture the "average" income of the household.
Consumption ("achievement")	
Pro: <ul style="list-style-type: none"> • Shows current actual standard of living. • Smoothes out irregularities, and so reflects long-term average well-being. • Less understated than income, because expenditure is easier to recall. 	Con: <ul style="list-style-type: none"> • Households may not be able to smooth consumption (e.g. via borrowing, social networks). • Consumption choices made by households may be misleading (e.g. if a rich household chooses to live simply, that does mean it is poor). • Some expenses are not incurred regularly, so data may be noisy. • Difficult to measure some components of consumption, including durable goods.

Source: Based on Albert, 2004.



2. CHOOSE AN INDICATOR OF WELFARE:

Candidate 3:

**Other Measures Of Household
Welfare**

- ***Calories consumed per person per day .***
Anyone consuming less than a reasonable minimum - often set at 2,100 calories per person per day - would be considered poor.
- ***Food consumption as a fraction of total expenditure.***
The proportion of expenditure devoted to food falls as per capita income rises
- ***Measures of outcomes rather than inputs.***
Food is an input, but nutritional status (being underweight, stunting or wasting) is an output. So one could measure poverty by looking at malnutrition.
- ***NON-MONETARY INDICATORS***

SINGLE INDICATOR BY DIMENSION OF POVERTY

Basic Needs	Examples of Indicators
1. Empowerment and participation	<ul style="list-style-type: none">a. Participation in general and local election votingb. Extent of knowledge of local projects and district budgets
2. Health and Nutrition	<ul style="list-style-type: none">a. Percentage of population died before 40 years of ageb. Immunization ratesc. Child Mortality rated. Malnutrition ratee. Life expectancyf. Infection ratesg. Health service usage

SINGLE INDICATOR BY DIMENSION OF POVERTY (Cont.)

Basic Needs	Examples of Indicator
3. Education	<ul style="list-style-type: none">a. Percentage of people age 7-15 years that not go to schoolb. Literacy ratec. Enrolment rated. Survival to final primary school grade
4. Employment	<ul style="list-style-type: none">a. Open unemployment rateb. Percentage of employment work < 15 hours a weekc. Percentage employment work in informal sector

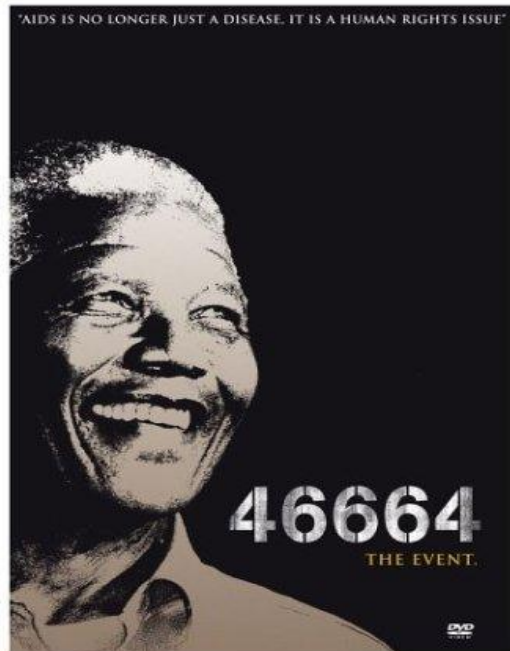
SINGLE INDICATOR BY DIMENSION OF POVERTY (Cont.)

Basic Needs	Examples of Indicators
5. Housing	<ul style="list-style-type: none">a. Percentage of household with no access to electricityb. Percentage of household with dirt floorc. Percentage of household by size of floor per capita < 8 m²
6. Water and Sanitation	<ul style="list-style-type: none">a. Proportion of households with no access to drinking waterb. Proportion of households with no access to sanitary toilet facilities

CONCLUSIONS

- There is no ideal measure of well-being. The implication is simple: all measures of poverty are imperfect.
- That is not an argument for avoiding measuring poverty, but rather for approaching all measures of poverty with a degree of caution, and for asking in some detail about how the measures are constructed.
- Analysts need to be aware of the strengths and limitations of any measure they use.

“Like slavery and apartheid, POVERTY IS NOT NATURAL. It is man-made, and it can be overcome and eradicated by the action of human beings”



Nelson Mandela (2003)