



WORLD BANK

National and International Poverty in Eastern Europe and Central Asia

*Victor Sulla
Economist
The World Bank*

Outline

- The World Bank's global poverty measures and MDGs
- Main issues poverty definition in ECA region
- International poverty measurement
- . National poverty measurement
- . Conclusions





Main issues related to poverty definition in Europe and Central Asia (ECA) region

Alternative poverty lines: General

There are many different types of poverty lines. One of the main distinction in ECA is between:

- Relative poverty line: when the line is defined relative to some measure of welfare for the entire population.
- Absolute poverty line: when the line is defined in absolute terms, as the minimum cost of a reference living standard.

Alternative poverty lines: Relative

A. Relative poverty line

Definition:

A relative line is set in relation to the overall distribution of income or consumption in a country/region of reference. The most common examples are to set the poverty line at 50 percent of the mean consumption in the country, or at 50 percent of the median consumption.

Relative lines are typically used in rich countries.

Alternative poverty lines : Relative

Advantages and disadvantages:

- (+)** In rich countries, absolute poverty or destitution is very small, and a relative line is typically used.
- (-)** In low or middle income countries, where absolute poverty is more prevalent, it is better to use an absolute measure.

Alternative poverty lines: Relative

(-) Relative poverty lines do not allow for comparisons across countries or over time since they don't represent the same welfare level:

For instance, the official poverty rate in the early 1990s was close to 15% in the United States and also close to 15% in (much poorer) Indonesia. Many of those counted as poor in the U.S. would be considered to be comfortably well off by Indonesian standards.



Alternative poverty lines : Relative

(-) Relative poverty lines lead to poverty measures which are insensitive to overall well-being: They depend only on the distribution of consumption and not on the level of consumption. In a country, if the consumption of all individuals doubled, poverty would remain unchanged.

Alternative poverty lines : Relative

(-) Dependence on distribution also means that:

- if the poor are getting poorer (all things equal for the others), the mean or median consumption decreases, the poverty line decreases, and poverty measures decrease.
- If the rich are getting richer (all things equal for the others), the mean or median consumption increases, the poverty line increases, and poverty measures increase.

Absolute poverty lines

B. Absolute poverty line

Definition:

An absolute poverty line is set as an absolute level below which consumption is considered to be too low to meet the minimum welfare level acceptable.

Absolute poverty lines are typically used in low or middle income countries.

Absolute poverty lines

Advantages and disadvantages:

- (+) An absolute poverty line is essential for comparisons of poverty rates between two countries or over time, since it ensure that similar standards are used. Use PPP.
- (+) In low or middle income countries, where absolute poverty is prevalent, an absolute poverty line is usually preferred to identify those in “absolute” need of interventions.



Absolute poverty lines

- (-) In rich countries, an absolute poverty line would probably not provide relevant information:
The \$1 per day poverty line might be useful in Vietnam (where 27% of the population is poor by this standard in 1998), but would be of little relevance in the UK.
- (-) It is difficult to define what constitutes “basic needs”, which vary across individuals according to their metabolism and their activity level.



Poverty lines. ECA summary

- EU countries have already moved to a common definition based on reiterative principle, however they come back to material deprivation as an absolute measure. Ukraine example
- Other countries use absolute poverty lines but methodologies of lines as well as consumption aggregates differ across countries.
- The World Bank uses both national and international poverty lines

International poverty measure

New “dollar a day” line

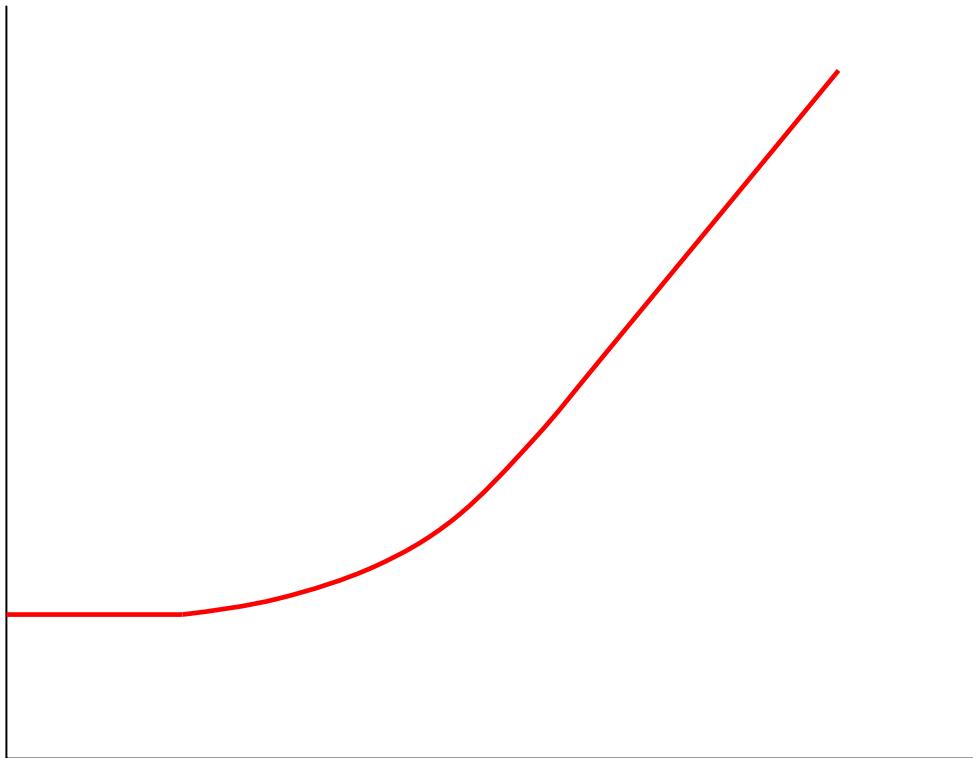


“Poor” by whose definition?

- In assessing poverty in a given country, and how best to reduce poverty, one naturally focuses on a poverty line that is considered appropriate for that country.
- But how do we talk meaningfully about “global poverty”?
 - Poverty lines across countries vary in terms of their purchasing power,
 - and they have a strong economic gradient, such that richer countries tend to adopt higher standards of living in defining poverty =>

=> Absolute poverty dominates in poorest countries; relative poverty elsewhere

Poverty line at PPP



Log consumption per capita at PPP

“\$2 a day” is more representative of developing world as a whole

- Focusing on the poorest is justified.
- Nonetheless, a higher line—more typical of developing countries as a whole—is also of interest.
- A line set at double that found in the poorest countries has been widely used for this purpose.

Steps in measuring global poverty

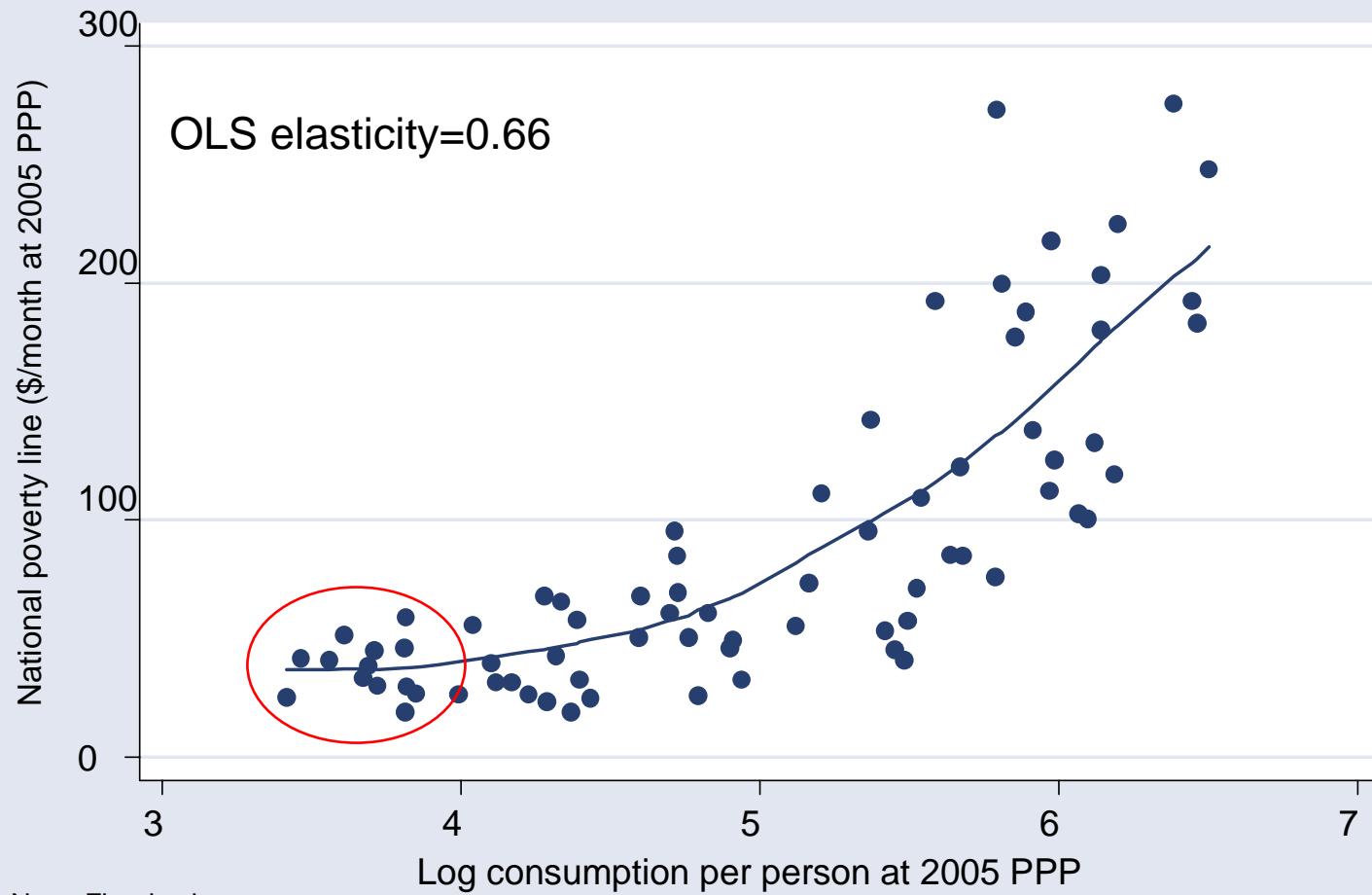
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1. The international poverty line is converted to local currencies in the ICP benchmark year (2005)
 2. and is then converted to the prices prevailing at the time of the relevant household survey using the best available CPI for that country.
 3. Then the poverty rate is calculated from that survey.
 4. Interpolation/extrapolation methods are used to line up the survey-based estimates with these reference years, including 2005.



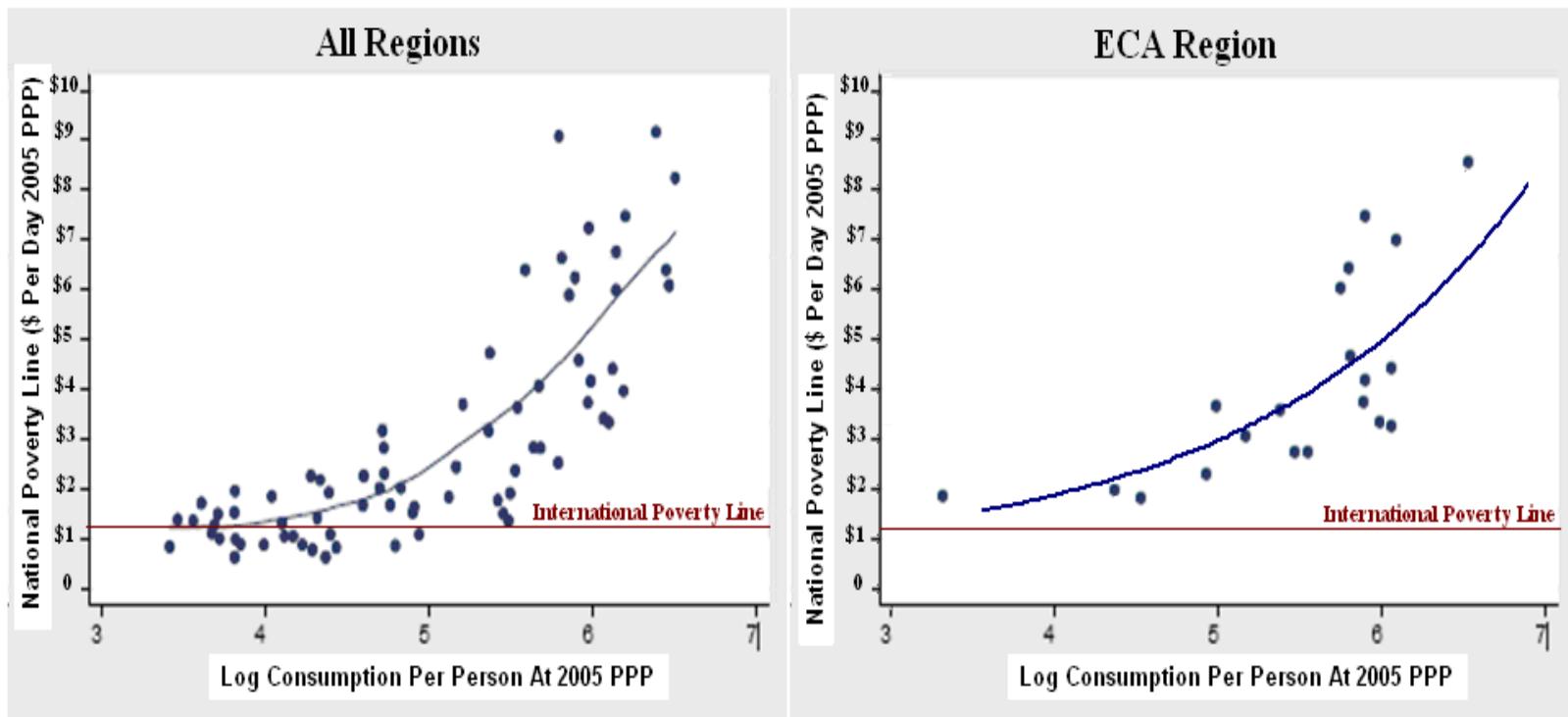
New compilation of national poverty lines

- Original compilation for WDR 1990 is now rather old.
- New compilation of national poverty lines from the Bank's country-level Poverty Assessments/PRSPs.
 - Poverty lines considered appropriate to living standards in each country,
 - Consultation with Government, or Government's own line.
- Converted to common currency using 2005 PPP for individual consumption
- Data set for 75 countries

National poverty lines for developing countries plotted against mean consumption using consumption PPPs for 2005



International poverty lines of \$PPP 2.5 (poverty) and \$PPP 5.0 (vulnerability) per capita per day used with 2005 ICP



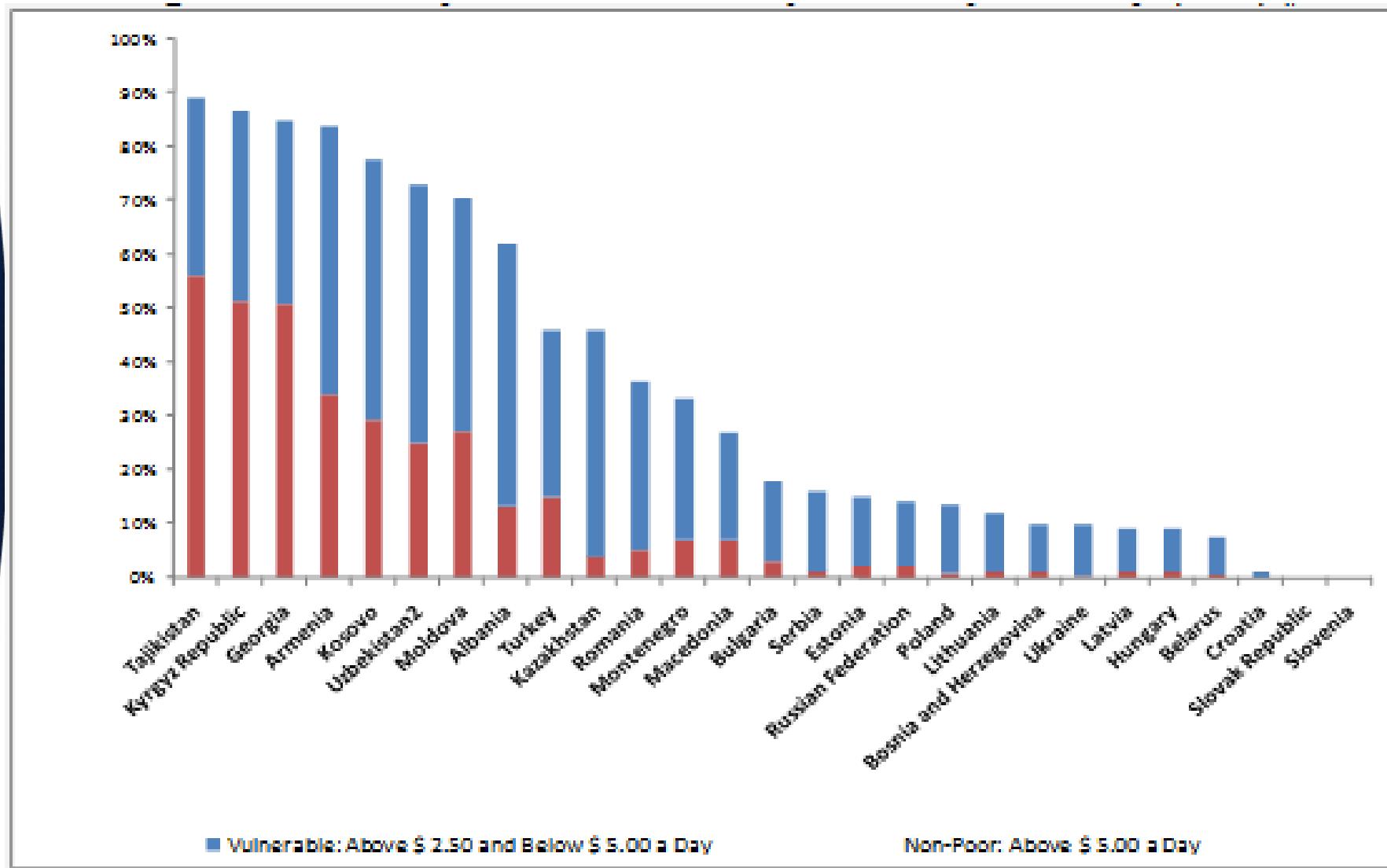
National poverty lines expressed in ICP Kirgiz Republic (2005), Georgia (2006), Moldova (2005), Armenia (2004), Tajikistan (2003), Azerbaijan (2002). The un-weighted average of national poverty lines for all 6 countries is \$2.73 a day and **\$2.50 dollars for the poorest 4 countries**.



Alternative lines for testing robustness

- \$1.00: India's official poverty line
- **\$1.25**
- \$1.45: 2005 value in the US of our old (1993) line of \$1.08/day
- \$2.00: Median of all developing/transition countries in our data
- \$2.50: More typical of middle income countries in ECA and LAC
- Relative poverty lines:

International poverty in ECA: 2008



International poverty Conclusions

- Socio-economic data from the developing world are improving over time, so revisions to our knowledge can be expected.
- The original “\$1 a day” poverty line aimed to assess poverty in the world as a whole by the standards of what poverty means in the poorest countries.
- Based on our new compilation of national poverty lines and 2005 ICP we propose a new international line of \$1.25 a day. Relevant poverty in ECA is \$2.5 a-day
- Diversity in ECA region with a clear downwards trends towards improvement.

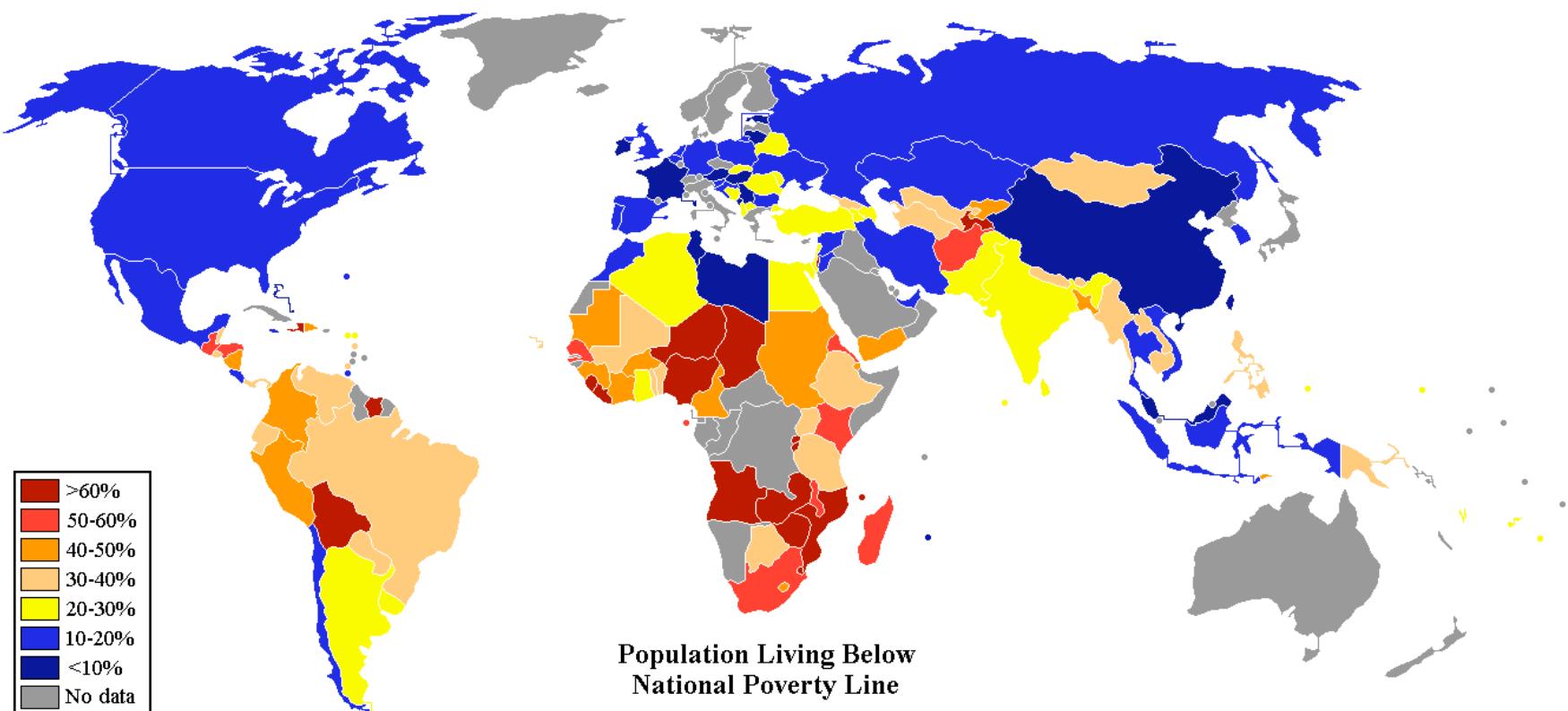
National poverty measures



Common issues in Practice

- Identification of consumer's cost function from demand behavior
- Are there goods that should be included in the consumption aggregate but not the poverty line
- Identification of external effects (interdependence). Utility depends on own consumption and relative position
- “Absolute” versus “relative” poverty? Is there really a difference? “Absolute” in the space of welfare can mean “relative” in the commodity space (Ravallion and Chen, 2009)

National Poverty rates for different countries



Source: CIA World Factbook 2008

Practice: Objective Poverty Lines

- **Cost of Basic Needs (CBN) method:**
 - Poverty line is a cost of a bundle of goods deemed sufficient for basic needs.
 - Food-share version of CBN : Poverty line is a cost of the food-energy requirement
- **Food-Energy Intake (FEI) method**
 - Find expenditure or income at which food-energy requirements are met on average for each region/socio-economic group

Problems to be aware of

- Defining “basic consumption needs”
 - Setting food energy requirements: problems with variability of activity levels; multiple equilibrium
 - Setting basic non-food consumption needs
- Consistency in terms of welfare:
 - Is the same standards of living being treated the same way in different subgroups of the poverty profile?
 - Is the definition of welfare consistent with the definition of poverty? Should some goods purchased by the poor be included into the poverty bundle?
- How sensitive are the rankings in a poverty profile to these choices?

Consistency of Poverty Lines

	% of calories from food	
	Urban	Rural
Rice	50	40
Corn	10	40
Vegetables	20	10
Meat	20	10

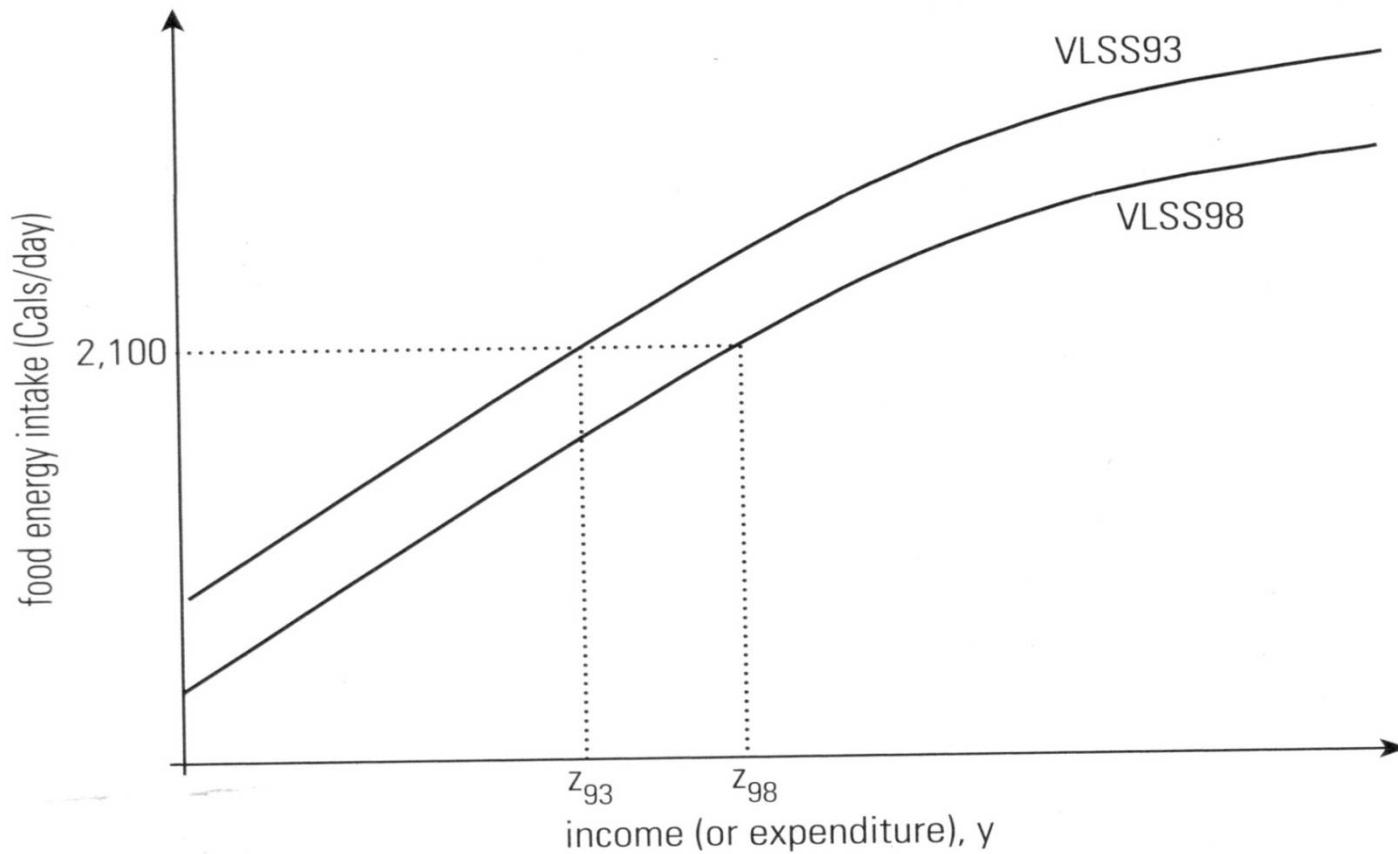
- Two bundles yield same food-energy intake, but the “urban” bundle is almost certainly preferable to the rural bundle
- The standard of living at the urban poverty line is higher than at the rural line
- These two poverty lines are inconsistent providing different welfare levels

Difference in the cost per capita

- Food Consumption and Cost of a calorie by quintile

Expenditure Quintile	Percentage of expenditure on food	Calories per capita, per day	Cost per calorie
Lowest	70	1,591	0.68
2	65	1,855	0.79
3	60	2,020	0.87
4	54	2,160	1.00
Highest	47	2,751	1.38

Example 2: Food-energy intake Method



Different sub-groups attain food energy requirements at different standards of living, in terms of real consumption expenditures

Allowing for differences in relative prices

- Ideally we only want to adjust the poverty bundle for differences in relative prices
- The problem is how to implement this ideal in practice
- The identification problem remains
- Key thing: To control for welfare differences

Allowing for differences in relative prices

- Parametric demand models: If we know the parametric utility function then or we can figure it out from demand behavior then use this to determine the cost of the reference welfare level in each region
- Numerical methods:
 - Look at consumption behavior of poorest $x\%$ nationally in each region of the country
 - Cost the consumption bundle of that group in each region
 - Calculate the poverty rate nationally and iterate if the answer differs too far from x

Methods of Setting Poverty Lines Do Matter!

	Poverty Headcount %	
	Urban	Rural
Indonesia		
FEI method	16.8	14.3
CBN method	10.7	23.6
Tunisia		
FEI method	7.3	5.7
CBN method	3.5	13.1

“World Bank” Method: Cost per calorie

HHID	Food items	Caloric content per 1 kg	Quantity purchased (kg)	Price paid (\$)	Caloric value	
1001	Milk	100	0.5	1.4	50	
1001	Bread	200	1.0	3.0	200	
1001	Meat	600	0.3	5.0	180	
1002	Bread	200	1.0	1.5	200	
1002	Butter	1200	0.2	4.0	240	
1002	Milk	100	0.5	1.5	50	
1002	Sugar	700	1.0	4.2	700	
1002	Potatoes	300	5.0	7.3	1500	
1003	Meat	600	0.7	7.0	420	
1003	Beans	500	0.5	2.2	250	
1003	Veg. Oil	450	0.3	3.4	135	
				Total	40.5	3925
						\$0.010

“World Bank” Method: Cost per calorie

HHID	Food items	Caloric content per 1 kg	Quantity purchased (kg)	Price paid (\$)	Caloric value	Cost per calorie
1001	Milk	100	0.5	1.4	50	
1001	Bread	200	1.0	3.0	200	0.022
1001	Meat	600	0.3	5.0	180	
1002	Bread	200	1.0	1.5	200	
1002	Butter	1200	0.2	4.0	240	
1002	Milk	100	0.5	1.5	50	0.007
1002	Sugar	700	1.0	4.2	700	
1002	Potatoes	300	5.0	7.3	1500	
1003	Meat	600	0.7	7.0	420	
1003	Beans	500	0.5	2.2	250	0.016
1003	Veg. Oil	450	0.3	3.4	135	
Mean cost per calorie						\$0.015

“World Bank” Method: Cost of a calorie

- Pick a nutrition requirement:
 - 2100 Kcal per day (*NR*)
- Select a group of households around the poverty line
 - Usually take 2nd to 5th deciles of expenditure distribution
- Calculate the total spending of these households on food (*FS*)
- Calculate the total caloric content of these purchases (*TC*)
- Calculate the cost of a calorie for this group: $CC=FS/TC$
- Calculate the cost of food poverty line as:

$$FPL = NR \cdot CC = NR \cdot FS/TC$$

Estimating Cost per Calorie



Is the width of the band important? Case of dual prices

Price of a
calorie/ goods

Price(mean)

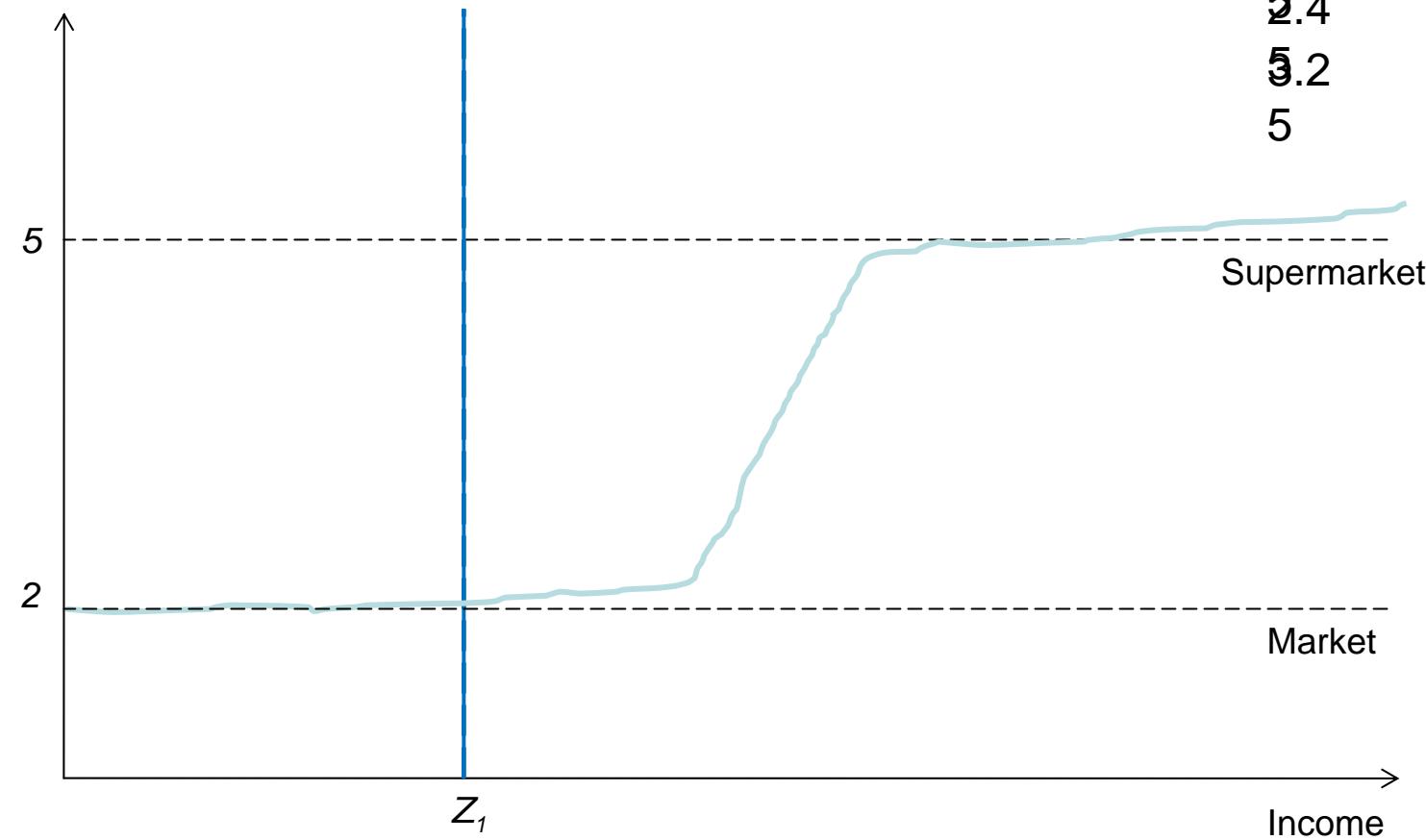
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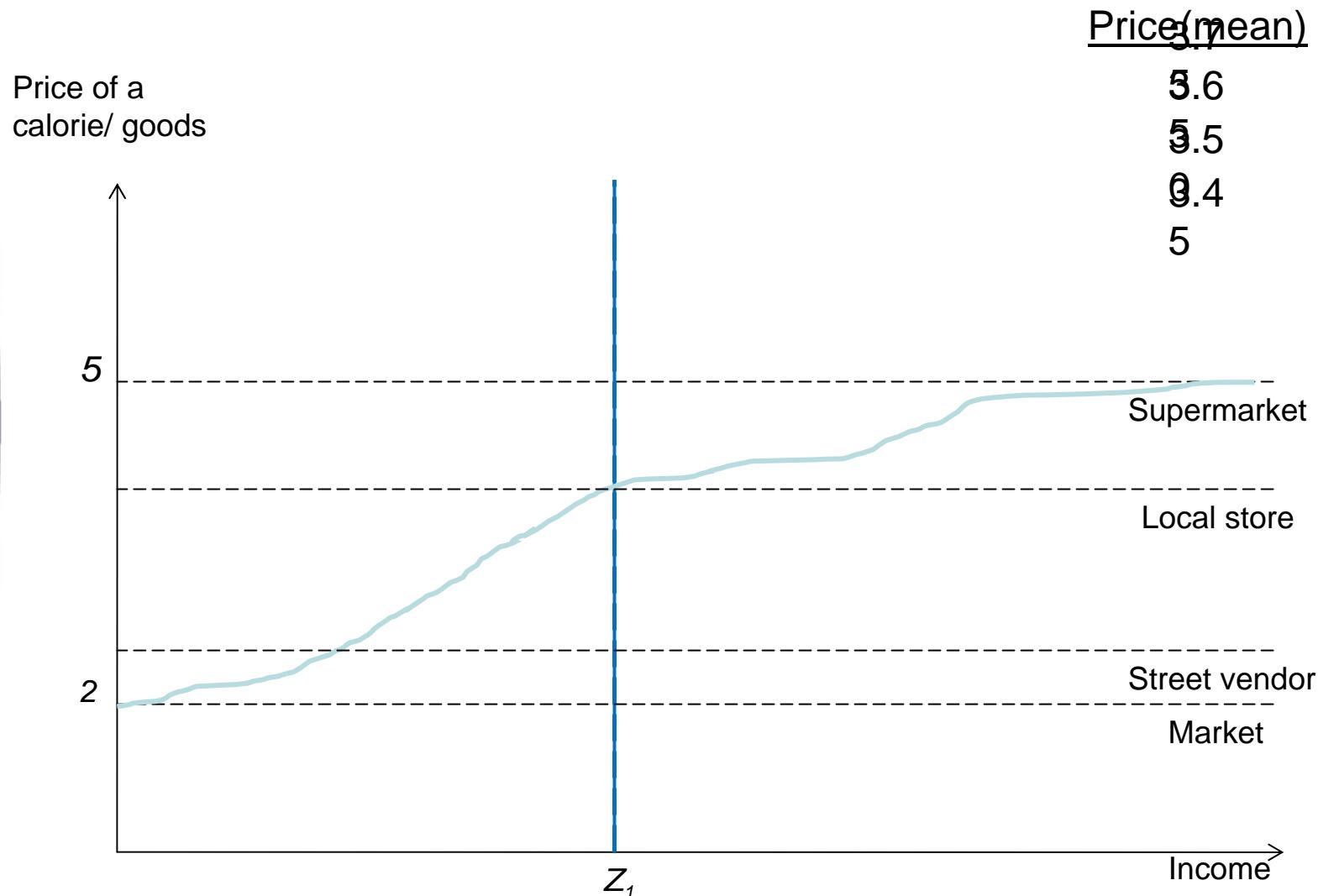
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Is the width of the band important? Case of multiple prices



“World Bank” Method: Lower poverty line

- Adjust Food Poverty Line for non-food expenditures
- **LPL:** Select a group of households whose **total expenditure** is equal (close) to Food Poverty Line
- Estimate average share of non-food consumption S_L in their total consumption expenditure
- Calculate: $LPL = FPL/(1 - S_L)$
- Example:

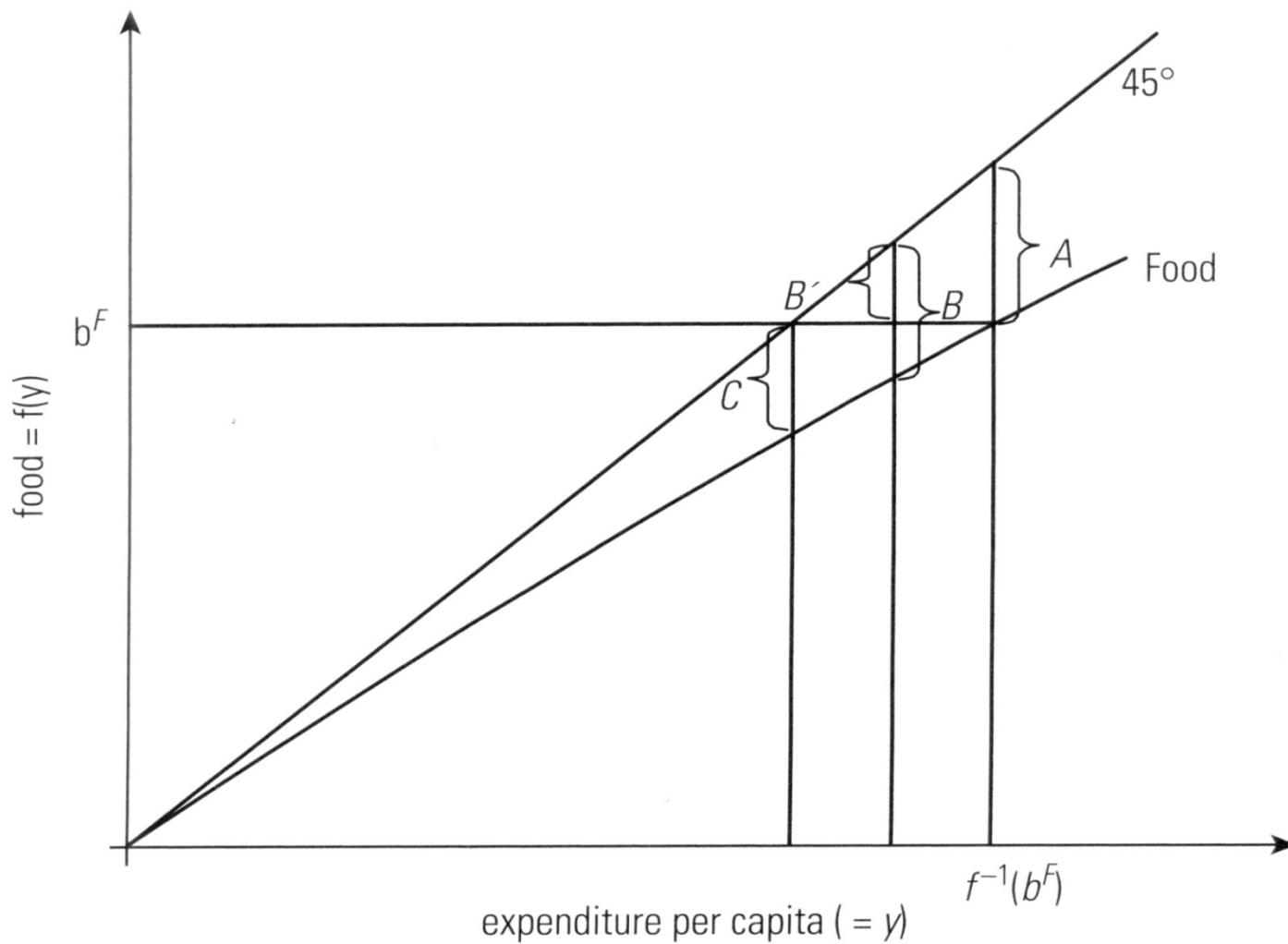
$$FPL = \$50, S_L = 0.2 \rightarrow LPL = \$50/(1 - 0.2) = 62.5$$

“World Bank” Method: Upper poverty line

- **UPL:** Select a group of households whose **food expenditure** is equal to Food Poverty Line
- Estimate average share of non-food consumption in their total consumption expenditure S_U
- Calculate: $UPL = FPL/(1 - S_U)$
- Example:

$$FPL = \$50, S_u = 0.35 \rightarrow UPL = \$50/(1 - 0.35) = 76.9$$

Non-food adjustment diagram



Updating poverty lines over time

- Once poverty line is established, it is important to update it correctly for the new time period
- It is incorrect to recalculate poverty lines every year: by doing that we would use relative poverty lines (similar to urban/rural example)
- Two ways to go:
 - update old poverty line using new prices. That would answer the question: How many people can afford the old basket now?
 - update new poverty line using old prices. That would answer the question: How many people could afford the new basket in the past?

Recommendations

- The WB recommends using objective, absolute poverty lines in developing countries
- Usually, several poverty lines are calculated. For example, Lower and Upper poverty lines in the WB method
- Always conduct sensitivity analysis. Test the degree to which the results are sensitive to the choice of poverty lines. This can be done by repeating the calculations for different lines and comparing results