

Measuring Poverty and Poverty and Growth

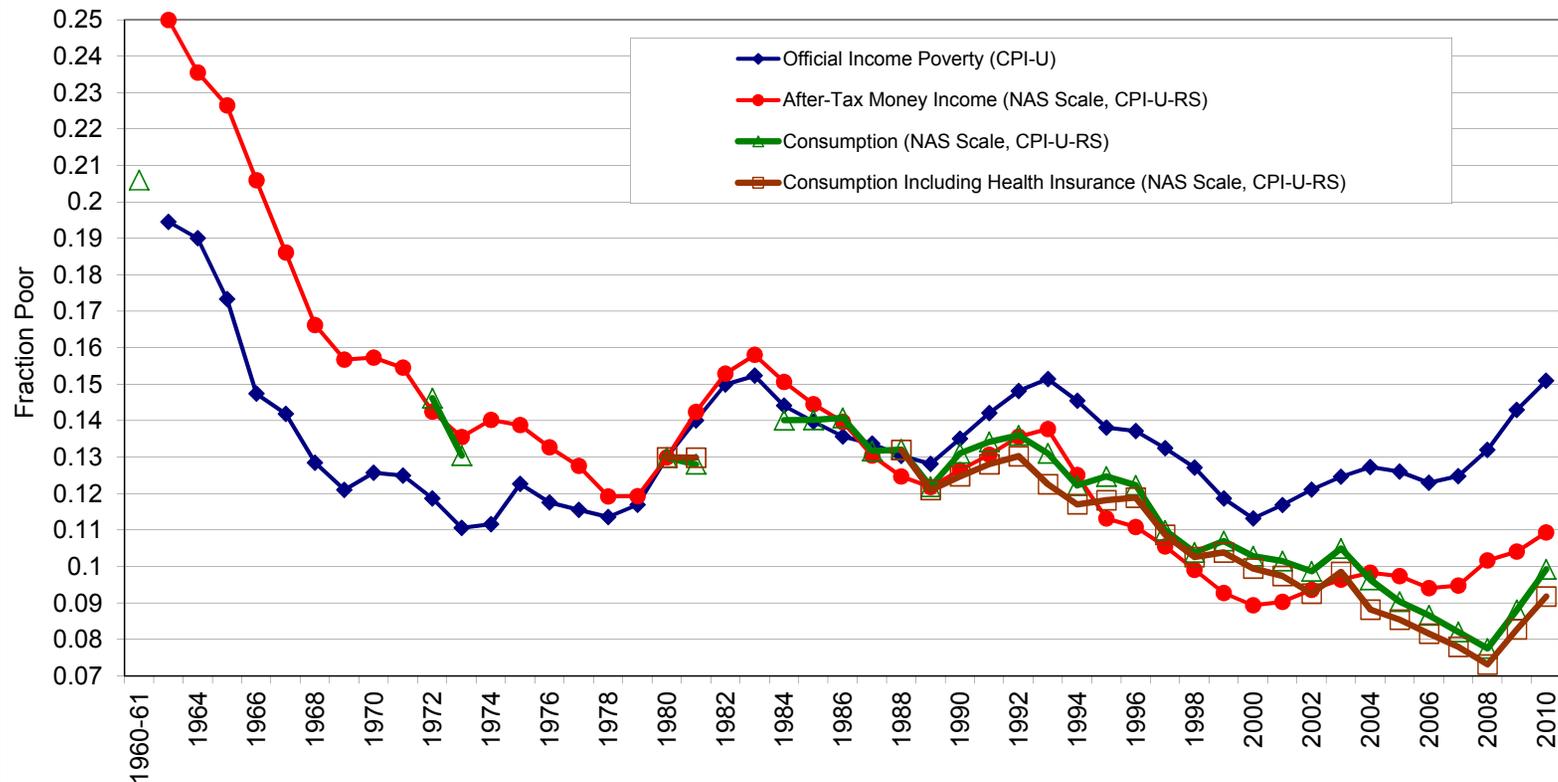
Rajeev Dehejia

A case study in controversy: India's poverty line

- The Indian government's Planning Commission set urban poverty line at 32 rupees per day (rural is 26).
 - 60-70 cents at official exchange rate.
 - About \$1 a day at PPP exchange rate.
- Last year urban poverty line reduced to 29 rupees per days.
- Poverty rate fell by 7 percentage points.
- Defining poverty away? Probably not, but you can see why there is controversy.

A non-development example: US

Figure 2: Consumption and Income Poverty Rates, 1960-2010



Notes: The rates are anchored at the official rate in 1980. Poverty status is determined at the family level and then person weighted. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Official Income Poverty and After-Tax Money Income Poverty are as in Figure 1. CE data are not available for the years 1962-1971, 1974-1979 and 1982-1983. Also, consumption data are not available for the years 1984-1987 and before 1980 for measures that include health insurance.

Dimensions of Progress: Poverty from the Great Society to the Great Recession. Bruce D. Meyer, James X. Sullivan

How do you measure wellbeing?

- Opulence (\$)
 - Neoclassical term for an abundance of material wellbeing.
- Utility (Bentham and Mill)
- Capabilities (Sen)
 - The central aspect of well-being is *functioning*: the *freedom* of choice and control over one's life.
 - A person's ability and opportunity to generate valued outcomes.
- Happiness?
- Health?
- *Relative* well being?
 - Neighbors as negatives example.

How do you measure wellbeing?

- One response is to try to create multi-dimensional measures of poverty or wellbeing.
- E.g., the Human Development Index is a geometric mean of:
 - Life expectancy.
 - Education index (measuring expected and mean ed).
 - Income index (on a log scale).
 - Strength: One number captures overall poverty.
 - Weakness: What does that one number mean? An arbitrary weighting of components.

How to operationalize measures

- Whichever definition of poverty you use, you have to figure out how to operationalize that measure.
 - Common choice is a per capita average measure (e.g., GDP, consumption, health/lifespan, etc.)
 - A common alternative is “poverty lines” and headcounts: a bright line that divides the population into poor and non-poor based on that criterion (e.g., below a certain level of income, weight, education).
 - More alternatives in a few slides, specifically when using income measures.

Focus on goods and services

- Now let's narrow our attention to resource-based poverty definitions.
- Most widely used measure historically has been GDP per capita.
 - A measure of national income
 - Sum of the value of goods and services produced within the borders of a nation
 - What's in? What's out?
 - Goods and services sold on the market
 - Excludes unpaid housework and family workers
 - But try to estimate and include farm produce that is consumed
 - If poor countries have more non-market transactions, we:
 - underestimate their income
 - overestimate their growth

Alternatives to income per capita

- Consider using consumption (or expenditure) rather than income. Why?
 - Income doesn't always match resources available to the household (you can borrow or save).
 - In developing countries, income is very hard to measure (self-employment, informal jobs, payments in kind, complex arrangements).
 - Consumption though difficult to measure in practice is at least conceptually easier to define and measure (via household surveys).
 - Consumption corresponds to what you actually have available in a time period (in principle, though rarely in practice, person specific).
 - Consumption surveys can be focused on specifics such as food / calories.
- Disadvantages of consumption:
 - Relies on recall.
 - Relies on specific time frame.
 - Relies on ability to price specific goods and services.

For now, no alternative to poverty lines

- Thresholds complicate policy.
- Poverty lines are very helpful descriptive devices.
- But their *literal* interpretation can be a hindrance.
- Argument: strive for transparency, maximize descriptive usefulness, comparability.
- Argument: map from poverty lines to household behavior and needs – not the other way round.

Poverty measures

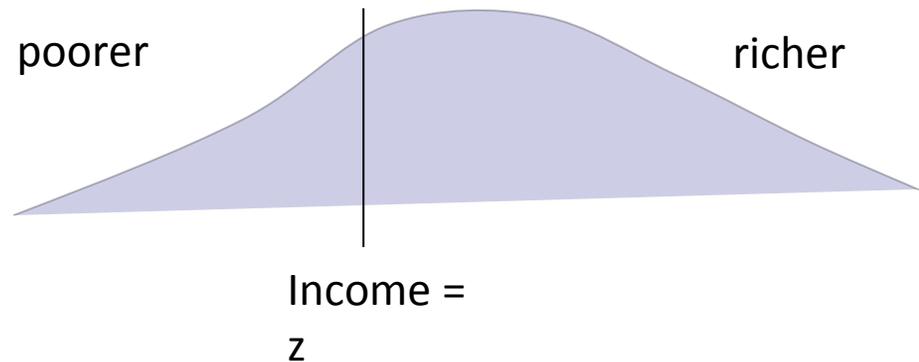
- Analytical use – characterized, hopefully
- Descriptive use – transparent, meaningful

G = poor population

N = total population

z = poverty line

y_i = income of household i (or person i)



Headcount index = G / N

Distributionally-sensitive measures

- Watts

$$\frac{1}{N} \sum_{i=1}^G (\ln(z) - \ln(y_i))$$

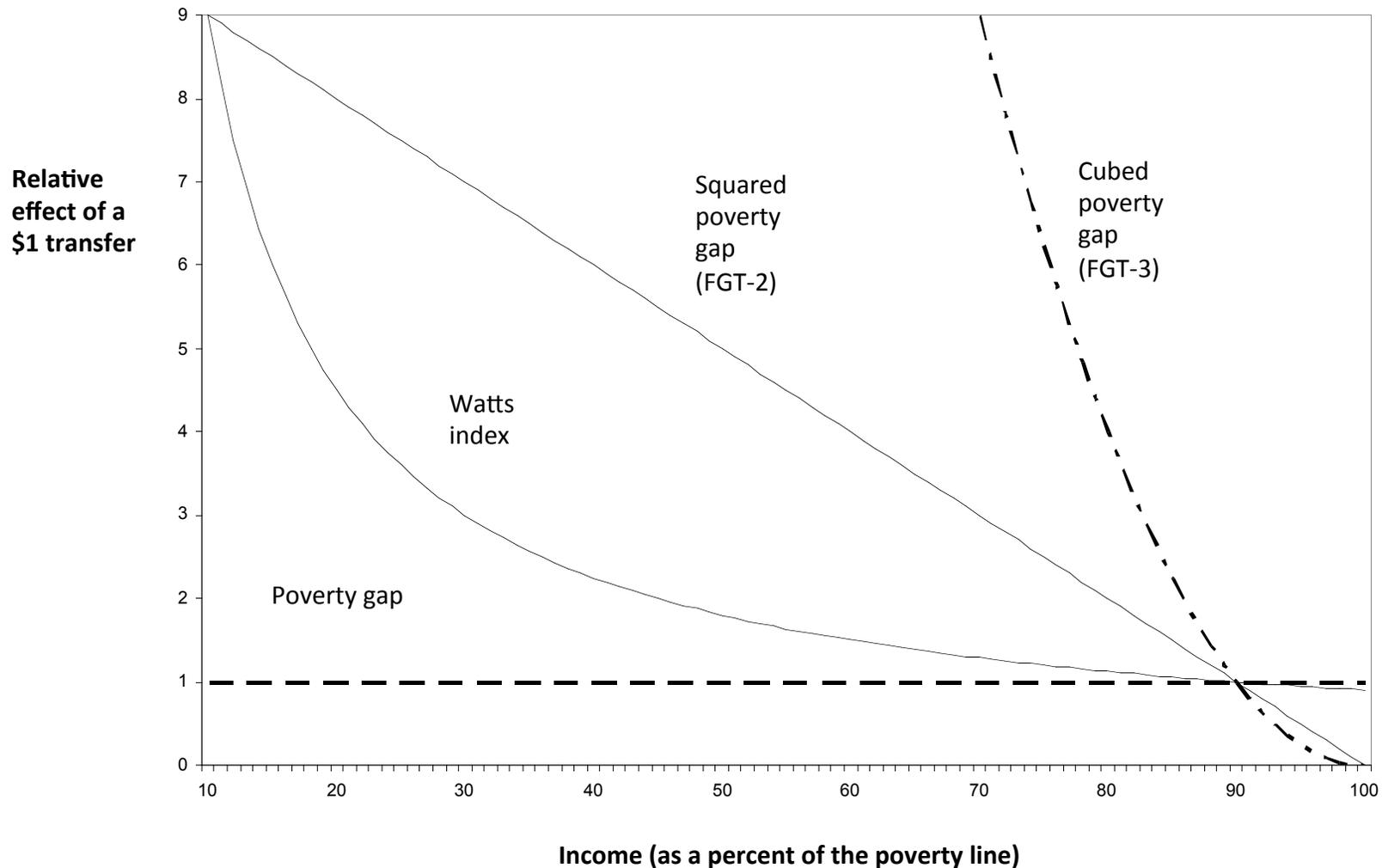
- FGT – raise the poverty gap to power α

$$\frac{1}{N} \sum_{i=1}^G \left(\frac{(z - y_i)}{z} \right)^\alpha$$

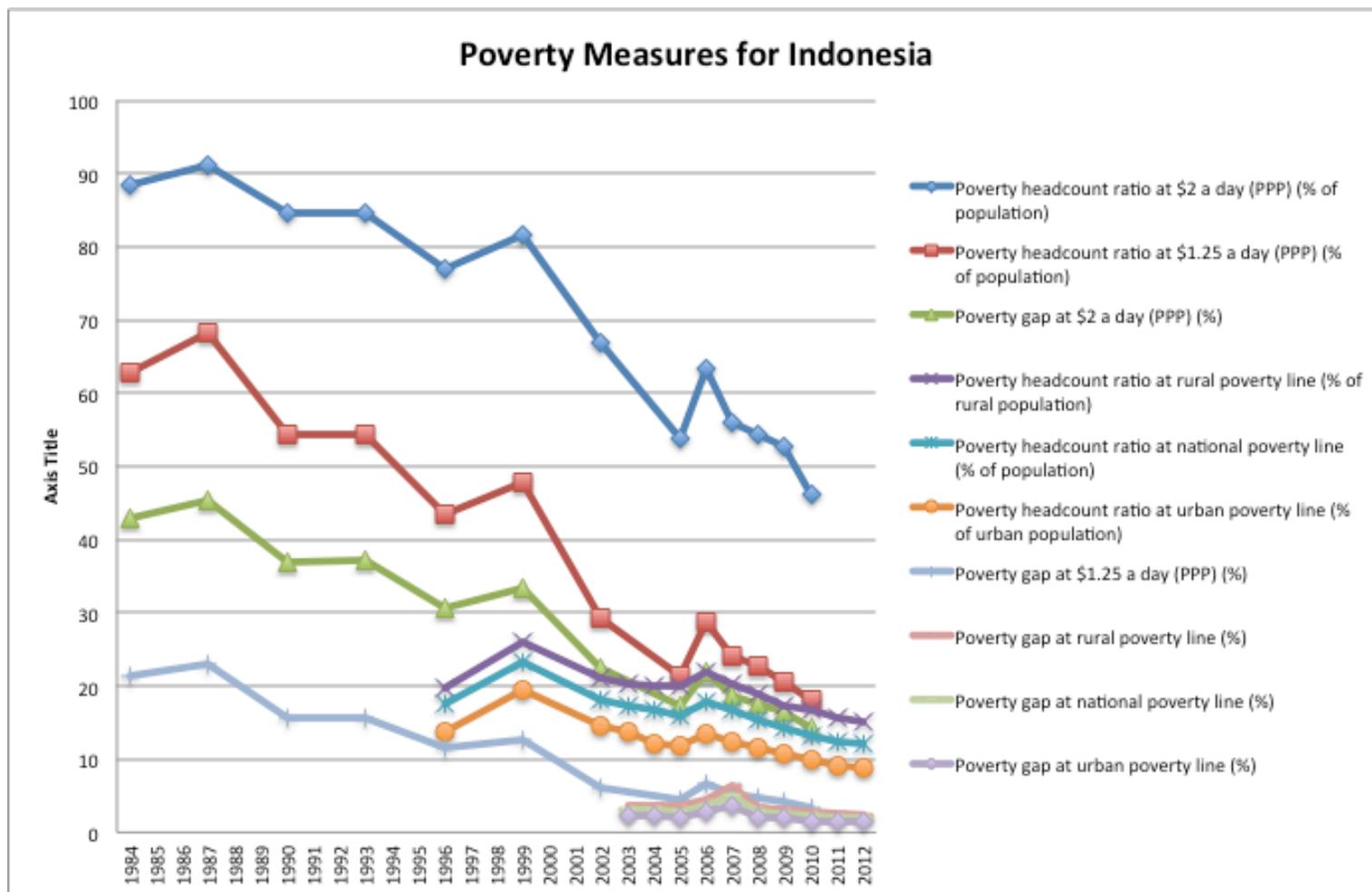
(hence put bigger weights on those farther below the poverty line).

Relative weights

Figure 1: Comparison of implicit weights in poverty measures. The weight on an additional \$1 of income for poor individuals at different levels, relative to the weight on an additional \$1 of income for individuals with income equal to 90 percent of the poverty line.



Back to the big picture: different measures matter



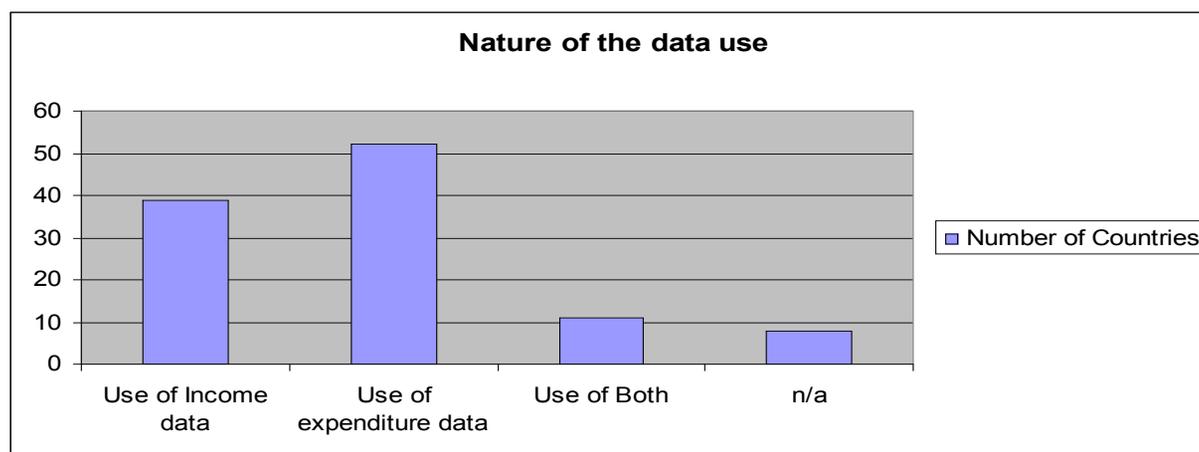
International poverty comparisons

International comparability.

- Absolute vs. relative.
- And relatedly, food/calories by age and gender and as a proportion of income.
- Are there thresholds in the data (e.g., are \$1/day)?

Use of income or expenditure data to measure poverty

Peru: If shift from income base to expenditure base, poverty falls from 51% to 43% (Szekely, et al, 2000).



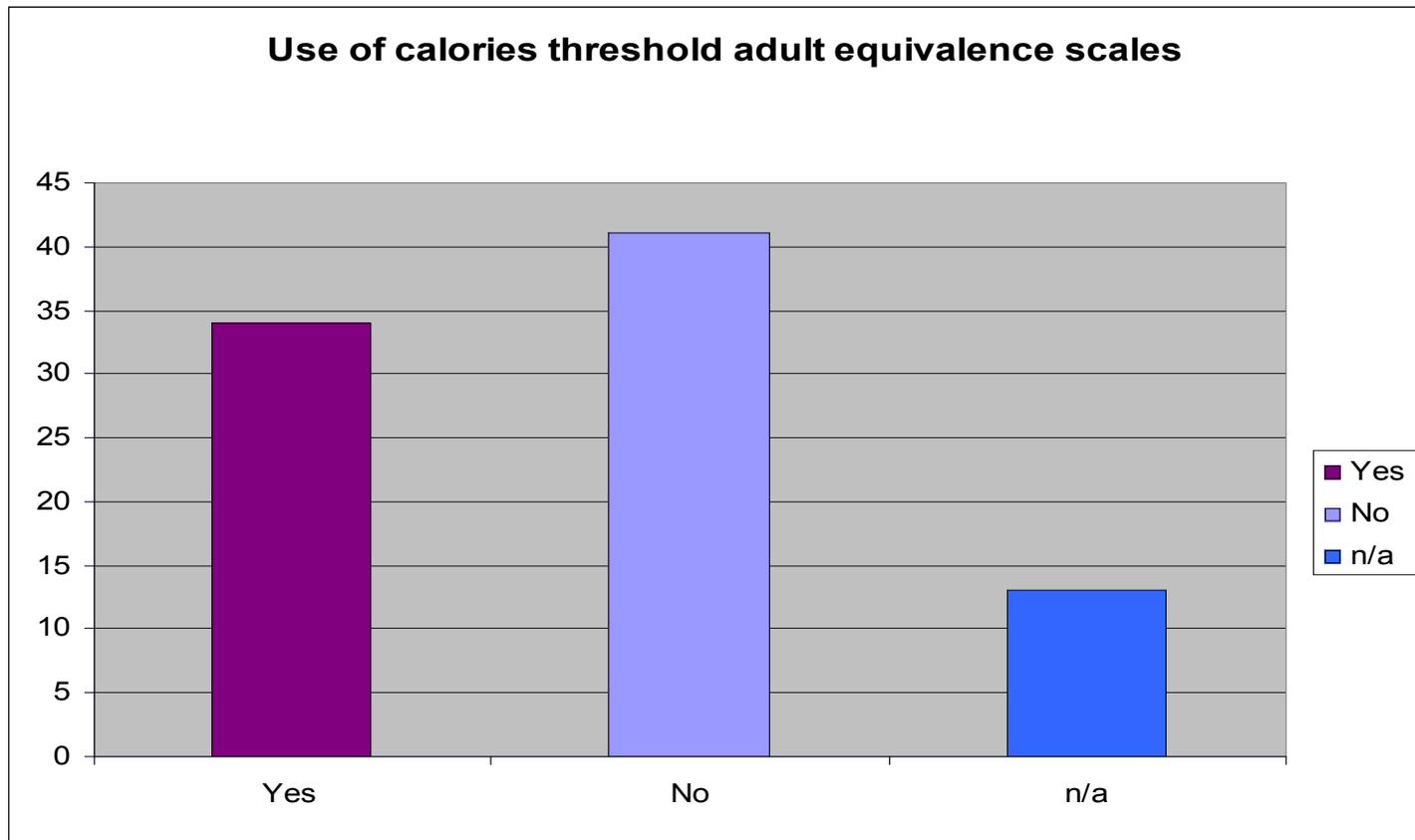
Absolute vs relative poverty lines

- Minimum necessary requirement to survive.
- vs. relative poverty line.

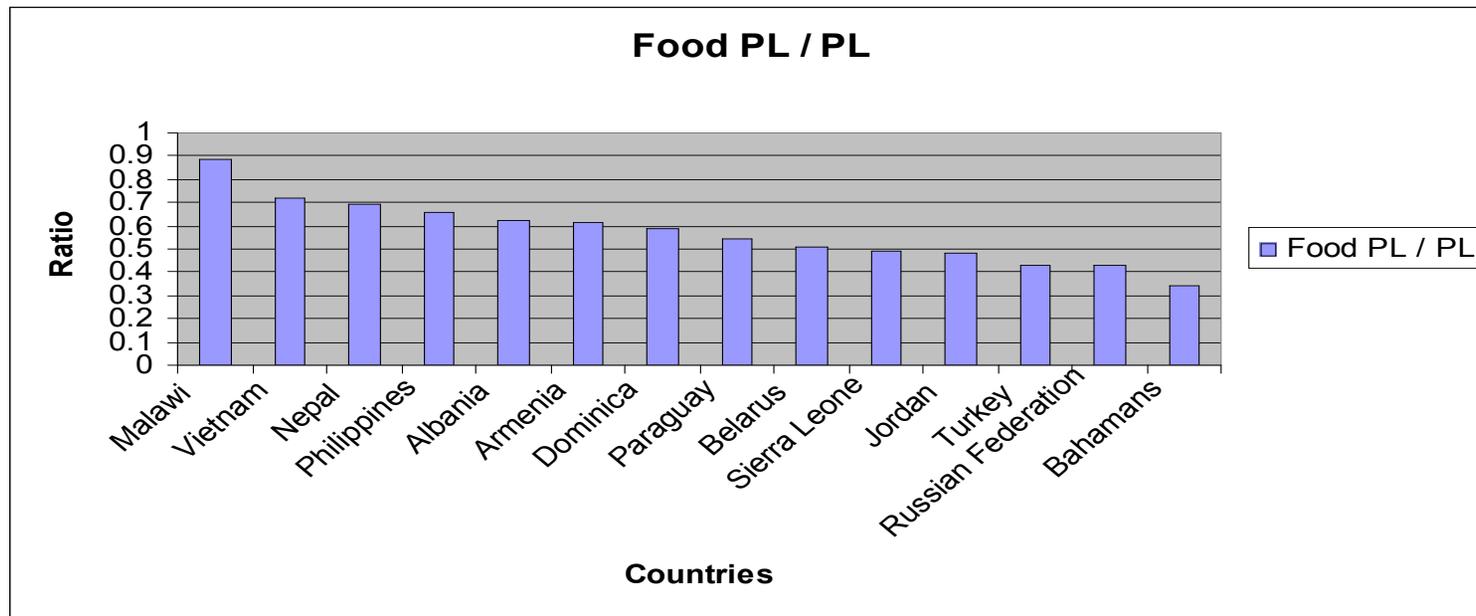
Poverty Lines	Number of countries
Absolute PL	60
Relative PL	41
Both	22

Source: Statistical addendum Oct. 2005

Adult equivalent food poverty lines



Food as a share of poverty lines



Are there thresholds in the data?

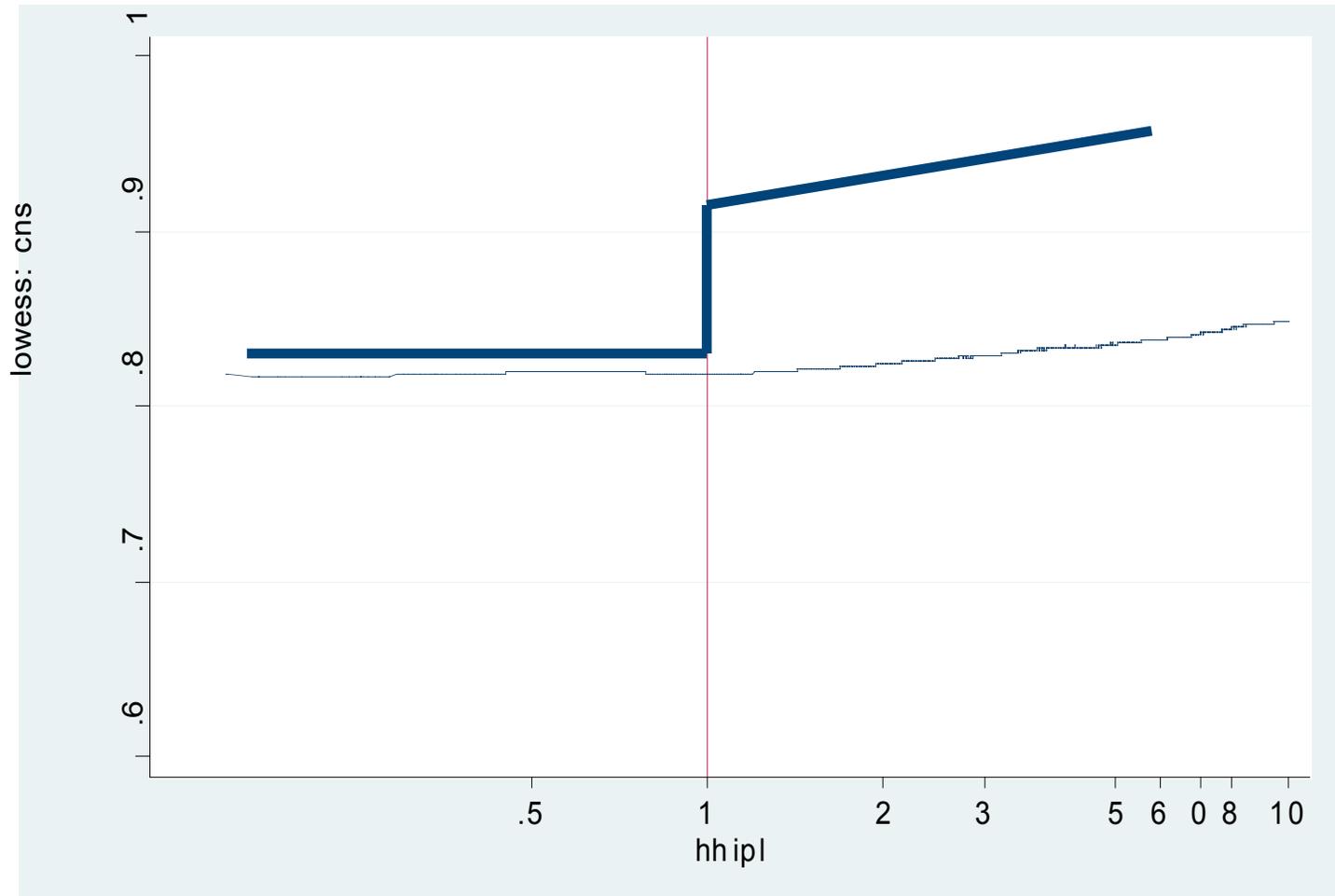
Examine this using Chilean data on income and consumption.

- “CASEN”: National socio-economic characterization survey 2003.
- National coverage survey.
- 6,400 households.
- 257,077 individuals.

- Analysis by Javier Bronfman

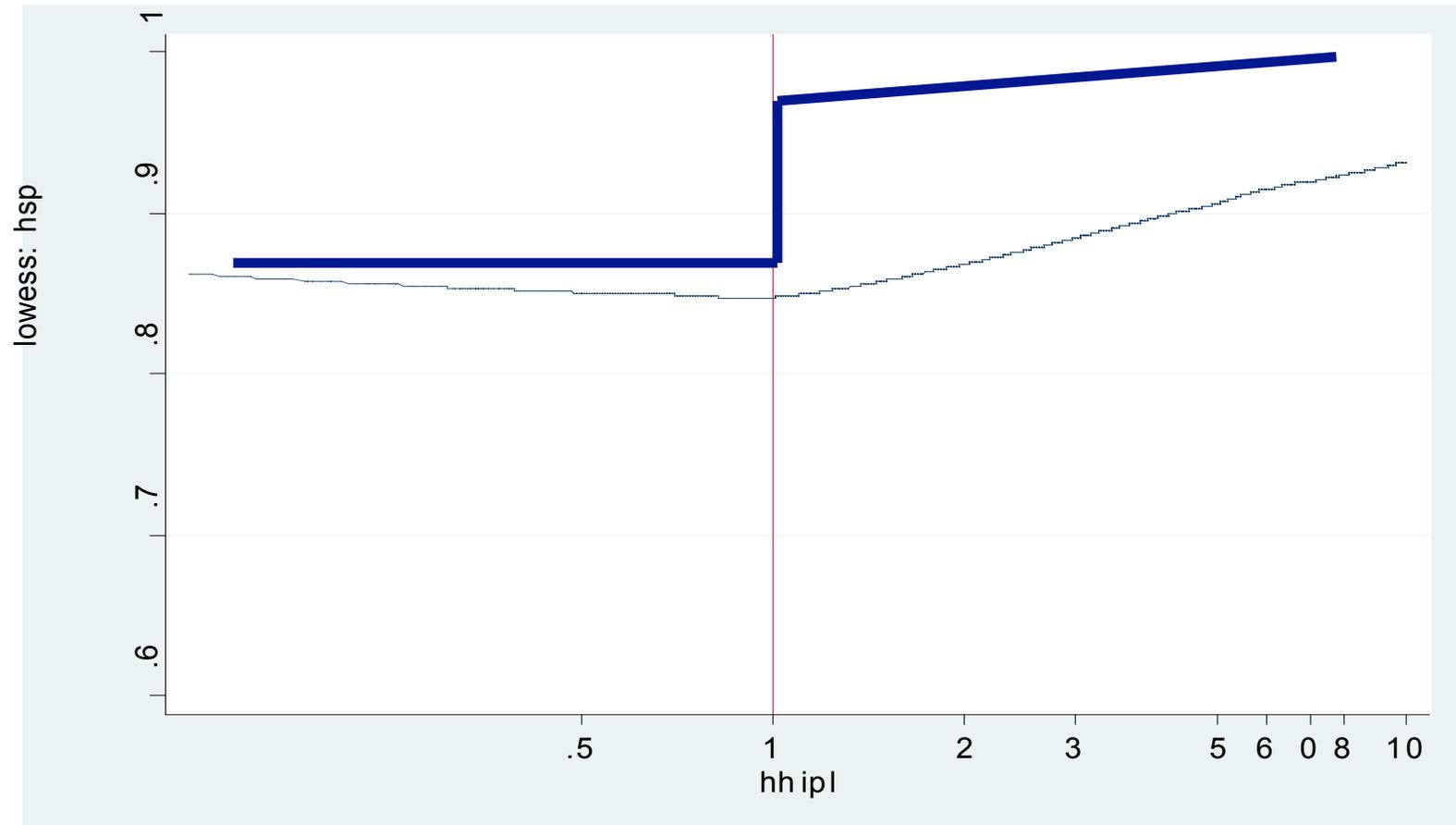
Chilean data

Child nutrition vs household income



Source: Casen 2003

Self reported health status and income



Source: Casen 2003

What does it mean to be poor?



World Bank *Voices of the Poor*

- "If you don't have money today, your disease will take you to your grave."
 - An old woman from Ghana

- "Problems have affected our relationship. The day my husband brings in money we are all right together. The day he stays at home (out of work) we are fighting constantly."
 - A woman from El Gawaber, Egypt

- It's not how much money you have on average but *when* you have it



Microfinance loan

Microfinance savings account

Life insurance

Interest free loan from neighbor

Shopkeeper credit

Remittance to home village

Savings held for neighbors

Home savings

Rent arrears

Wage advance

Cash in hand

Loans to others

Saving with a moneyguard

Hamid and Khadeja' s closing balance

November 2000, \$US = 50 taka

Financial Assets	\$174.80
Microfinance savings account	16.80
Savings with a moneyguard	8.00
Home savings	2.00
Life insurance	76.00
Remittances to the home village *	> 30.00
Loans out	40.00
Cash in hand	2.00

Financial liabilities	\$223.34
Microfinance loan account	153.34
Private interest-free loan	14.00
Wage advance	10.00
Savings held for others	20.00
Shopkeeper credit	16.00
Rent arrears	10.00
Financial net worth	-\$48.54

Small balances but large flows

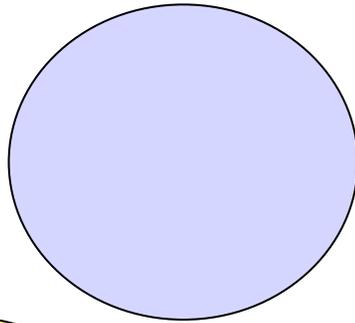
Year-end financial asset values and annual cash flows through financial instruments for the median household

US\$, converted from local currencies at market rates

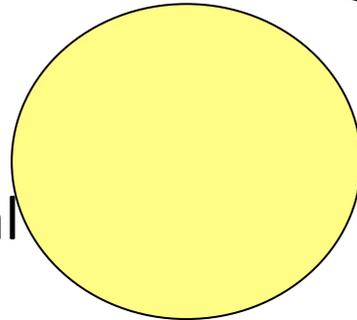
	Bangladesh		India		South Africa	
	Asset Value	Turn-over	Asset Value	Turn-over	Asset Value	Turn-over
Rural	57	568	18	590	220	3,447
Urban	74	547	169	810	792	6,264

Portfolios of the Poor: The triple whammy

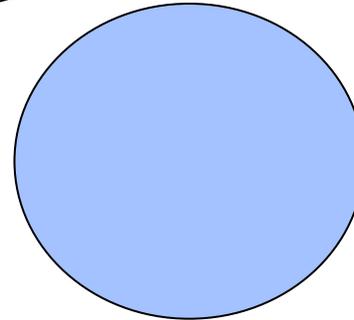
Low incomes



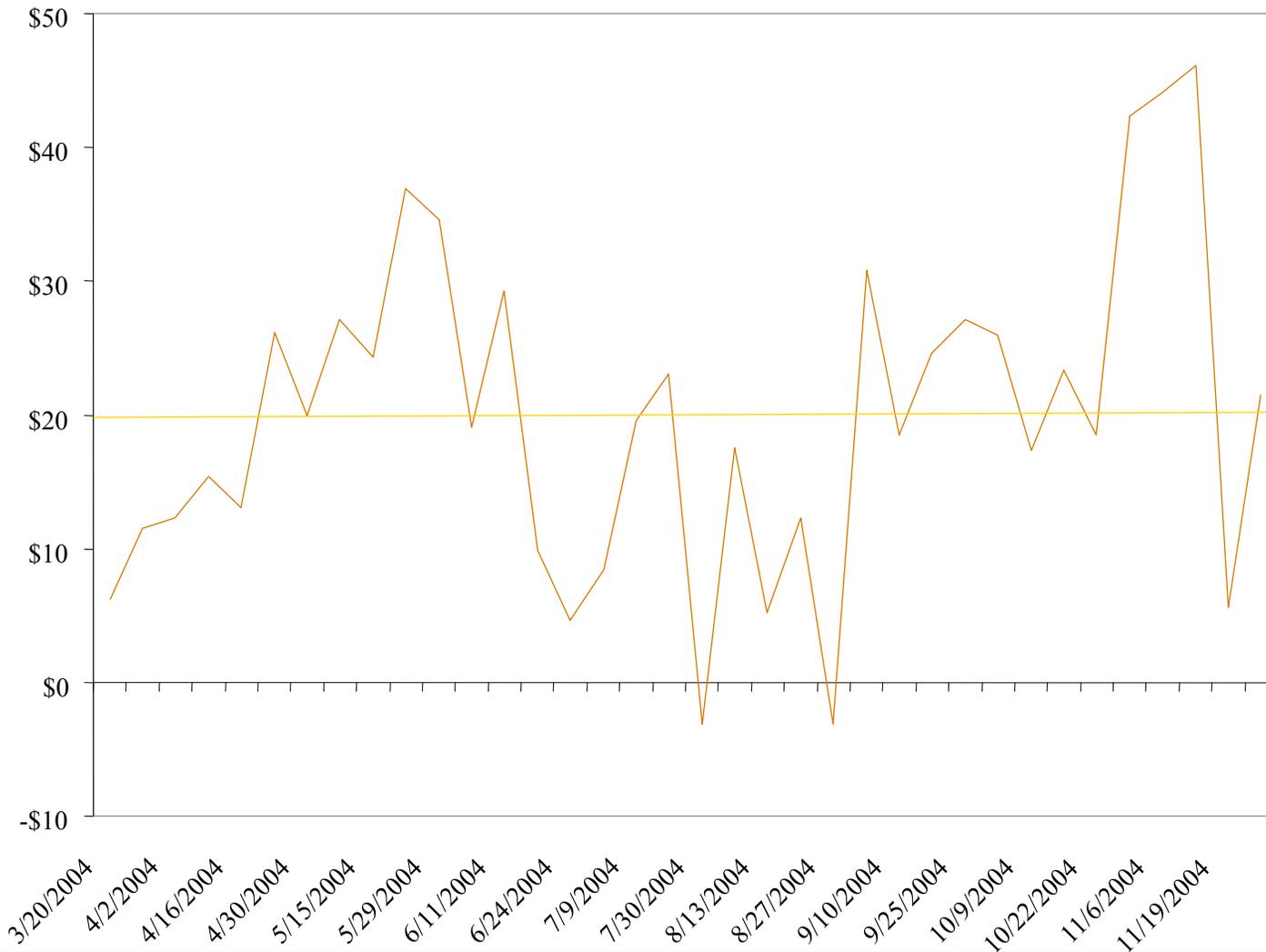
Lack of financial
tools



Irregular and
unpredictable
incomes



The challenge of living on \$2 a day is that \$2 a day is just an average

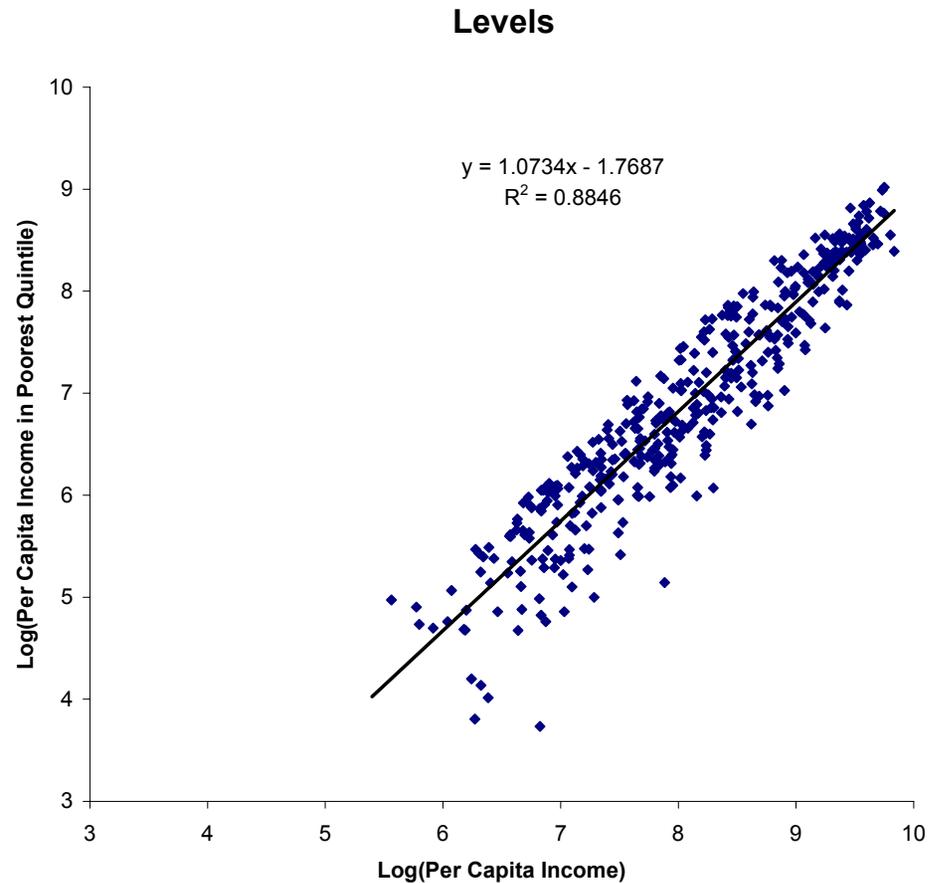


Back to the big picture: poverty and growth

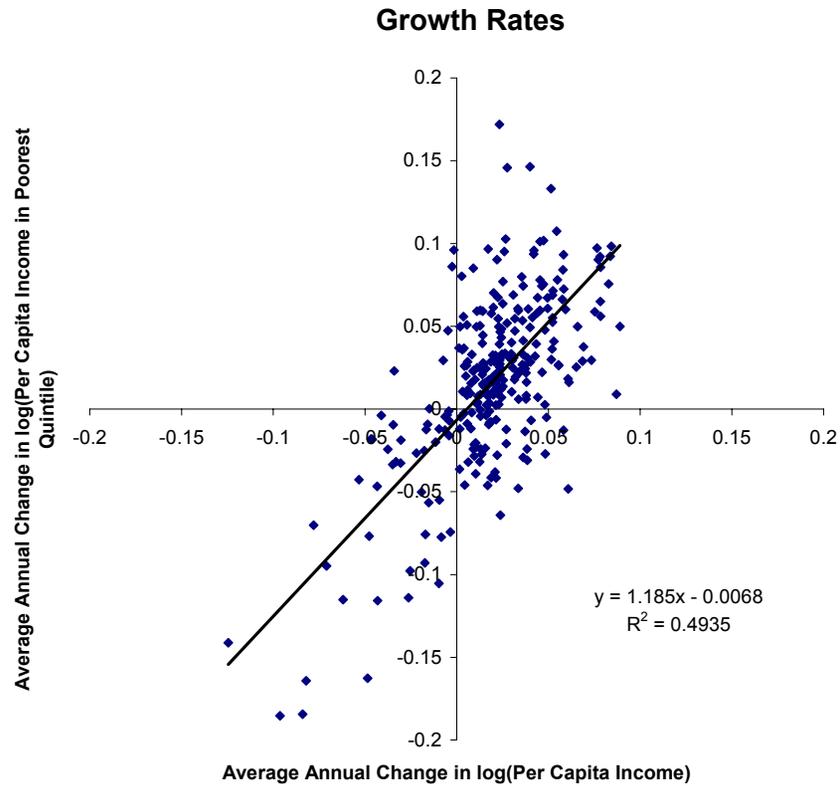
- Key question here is whether on average economic growth increases or reduces poverty?
- Theoretically each is possible.

Dollar and Kraay: linearity

Figure 1: Incomes of the Poor and Average Incomes



Dollar and Kraay



- In growth rates rather than levels

Dollar and Kraay

- So on average growth does not change the share that the poorest 1/5 command.
- It increases their income in proportion to overall growth – good news.
- Bad news: in that sense doesn't reduce inequality either.