# More Relatively-Poor People in a Less Absolutely-Poor World

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# Outline

1. Alternative approaches to measuring global poverty.

2: Taking <u>social effects on welfare</u> seriously in global poverty measurement.

3. New measures of <u>absolute</u> poverty are interpreted as providing a lower bound, assuming no social effects

4. New measures of <u>relative</u> poverty provide an upper bound, allowing for social effects

5. A truly global  perspective on poverty

6. Conclusions

# 1. Alternative approaches to measuring global poverty

*What do we mean by "poverty"?*

Rich and poor countries use very different definitions

# Definition 1: Absolute poverty in the developing world

- Developing countries have favored poverty lines that aim to have the same real value at different dates and places.

- Typically anchored to nutritional requirements for good health and normal activities.

- However, there are infinitely many commodity bundles that can attain any given set of nutritional requirements.

# "Poor" by whose standard?

- 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.

- The bulk of the World Bank's poverty analysis is at <u>national</u> level.

- But how do we talk meaningfully about "<u>global</u> poverty"?

- Poverty lines across countries have a strong <u>economic gradient</u>, such that richer countries tend to adopt higher standards of living in defining poverty =>

# The "relativist gradient:" Higher lines in richer countries, but with a lower bound
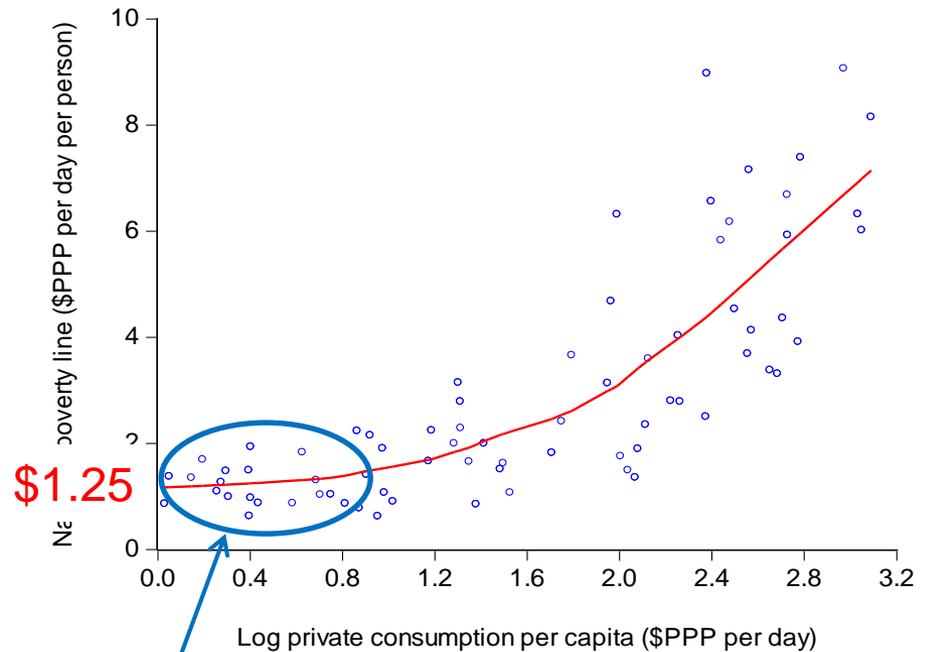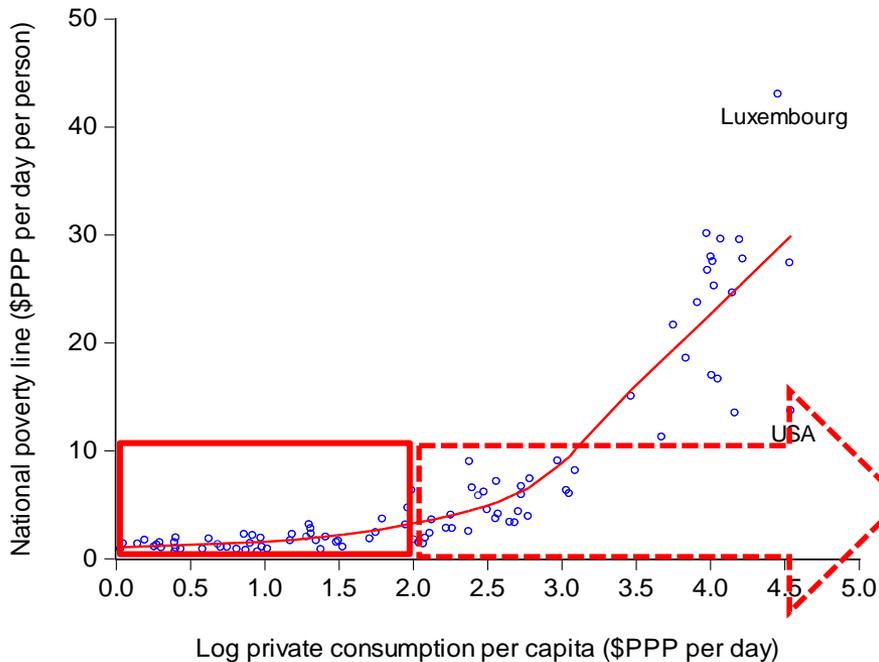


Malawi, Mali, Ethiopia, Sierra Leone, Niger, Uganda, Gambia, Rwanda, Guinea-Bissau, Tanzania, Tajikistan, Mozambique, Chad, Nepal, Ghana

# The "$1.25 a day" global poverty measures

- To measure poverty in the world as a whole, the "$1.25 a day" measures apply a common standard, anchored to <span style="color:red">what "poverty" means in the world's poorest countries.</span>

- Two people with the same purchasing power over commodities are treated the same way—both are either poor or not poor—even if they live in different countries.

- By focusing on the standards of the <u>poorest countries</u>, the $1.25 a day line gives the global poverty line a <span style="color:red">salience in focusing on the world's poorest</span>.

- It is a <u>conservative</u> definition; a lower line is hard to accept, but one might easily defend a higher line.

# Definition 2: Relative poverty in the developed world

The more common practice in most OECD countries and Eurostat has been to set the poverty line as a constant proportion—typically around 50%—of the (date and country-specific) mean or median income:

$$Z_i = kM_i \ (0 < k < 1)$$

Poverty line

Mean

One can call this a <u>strongly relative poverty line</u>

# Do strongly relative measures make sense?

1. <u>Welfarist justification</u> claims that (i) the value people attach to their consumption depends on its level relative to the mean in a given society—<span style="color:red">relative deprivation</span>—and (ii) that the poverty line should be interpreted as a <span style="color:red">money metric of utility</span>.

2. <u>Non-welfarist</u> ("capabilities") justification: poverty lines should allow for differences in the <u>cost of social inclusion</u> that rise with the mean.

   - This can be defined as the expenditure needed to assure that a person can participate without shame in customary social and economic activities.

<u>Further reading</u>: Martin Ravallion and Shaohua Chen, "Weakly Relative Poverty", *Review of Economics and Statistics*, 2011, 93(4): 1251-1261.

# Welfarist interpretation:
# Disutility of relative deprivation

- By this view, a person's welfare evaluation of their own income depends on its value relative to society's mean:

  Welfare = $U$(Own income, Relative income)

  $$= U(Y,\ Y\ /\ M)$$

- The poverty line is then the level of income ($Z$) at which some fixed reference utility is reached.

  $$U(Z, Z\ /\ M) = \mathit{fixed}$$

- However, this implies strongly relative poverty lines if (and only if) people care only about relative income.

- That is surely implausible except (possibly) in very rich countries.

# Non-welfarist interpretation: Capabilities and the cost of social inclusion

- Amartya Sen: "capabilities" should be seen as absolute;

  *"…an absolute approach in the space of capabilities translates into a relative approach in the space of commodities"*.

- We can think of poverty as having both absolute and relative aspects (Atkinson and Bourguignon):

  - The former is a failure to attain <u>basic survival needs</u>: capabilities of being adequately nourished and clothed for meeting the physical needs of survival and normal activities.

  - On top of this, a person must also satisfy <u>social needs</u>, which depend on prevailing living standards in the place of residence.

- To be non-poor one needs to be <u>neither absolutely poor</u> ("survival" capabilities) <u>nor relatively poor</u> (social inclusion capabilities).
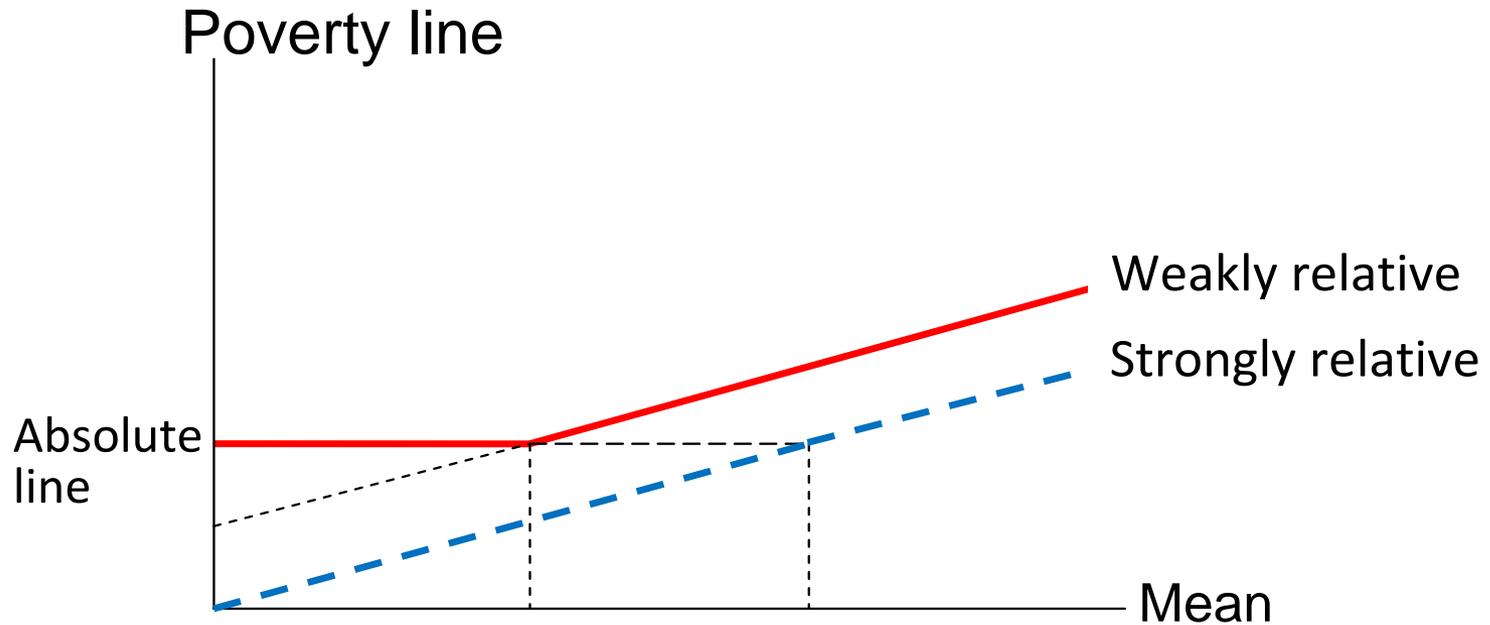
# It can be agreed that certain forms of consumption serve an important <u>social</u> role

- Famously, Adam Smith pointed to the social-inclusion role of a linen shirt in eighteenth century Europe:

  *"..a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty which, it is presumed, nobody can well fall into without extreme bad conduct."*

- Anthropologists have often noted the social roles played by festivals, celebrations, communal feasts, clothing:
  - High spending on celebrations and festivals by very poor people in survey data for a number of countries (Rao, Banerjee-Duflo).
  - Clothing can also serve a social role; conspicuous "designer label," which he interpreted as status-seeking behavior.
  - Qat in Yemen *"refusing to take qat is tantamount to accepting ostracisation"* (Milanovic, 2008, p.684)
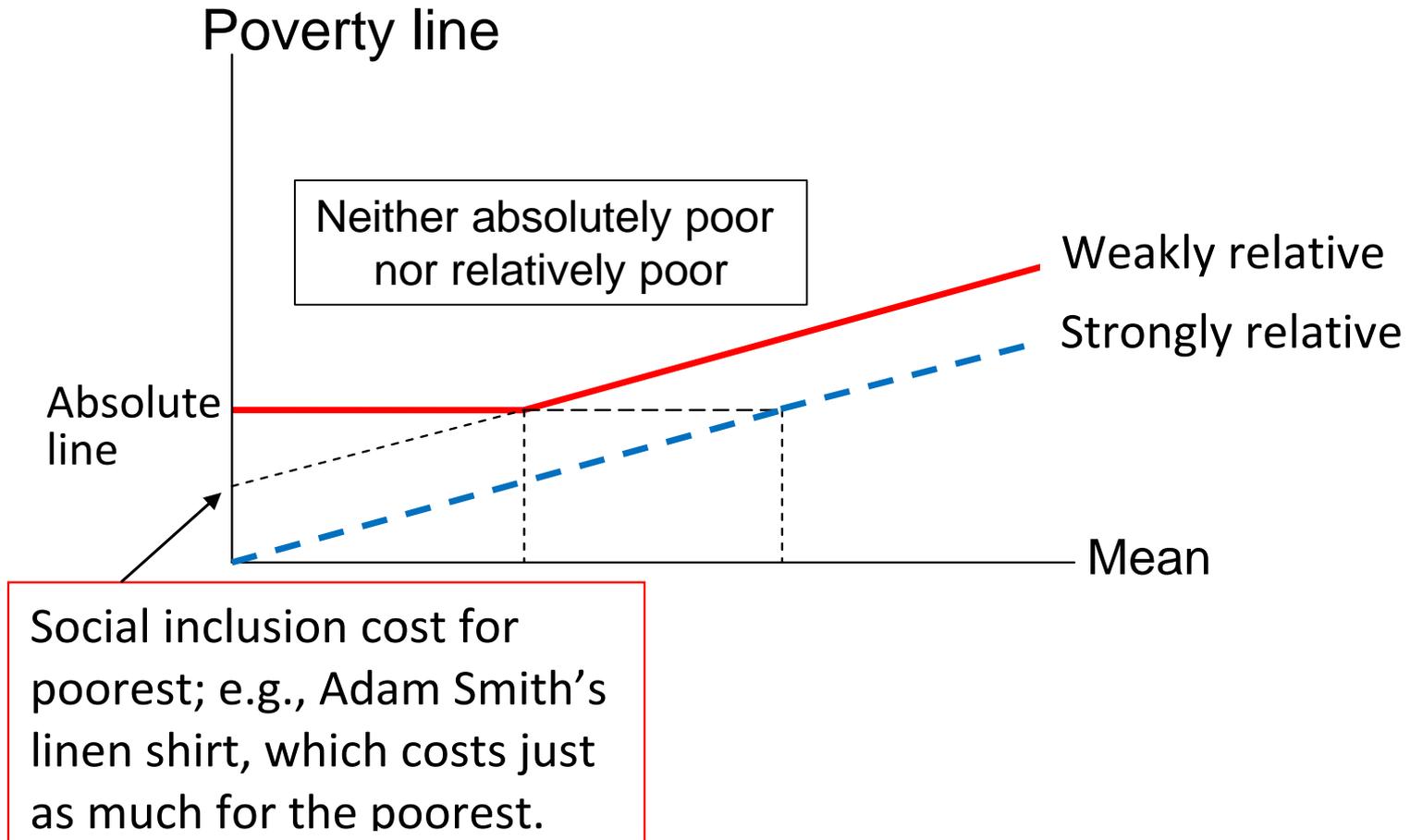
# However, the social role of consumption does <u>not</u> imply strongly relative poverty lines

- <span style="color:red">The key assumption of strongly relative measures: the <u>cost of inclusion is a constant proportion of the mean</u>.</span>

- That is hardly plausible. The social-inclusion needs of very poor people may well be low, but it is difficult to see why they would go to zero in the limit.

  - A socially acceptable linen shirt would not have cost any less for the poorest person as for someone living at the poverty line.

  - Very poor people are highly constrained in spending on things that facilitate their social inclusion, but that does not mean that their inclusion needs are negligible!

- Generalized Atkinson-Bourguignon lines allow for a positive lower bound to the costs of social inclusion

  => <span style="color:red">"weakly relative lines"</span> (Ravallion-Chen).

# Weakly vs. strongly relative lines



Poverty line

Weakly relative

Strongly relative

Absolute line

Mean

# Weakly vs. strongly relative lines

**Poverty line**

Neither absolutely poor
nor relatively poor

Weakly relative

Strongly relative

Absolute
line

Mean

Social inclusion cost for
poorest; e.g., Adam Smith's
linen shirt, which costs just
as much for the poorest.
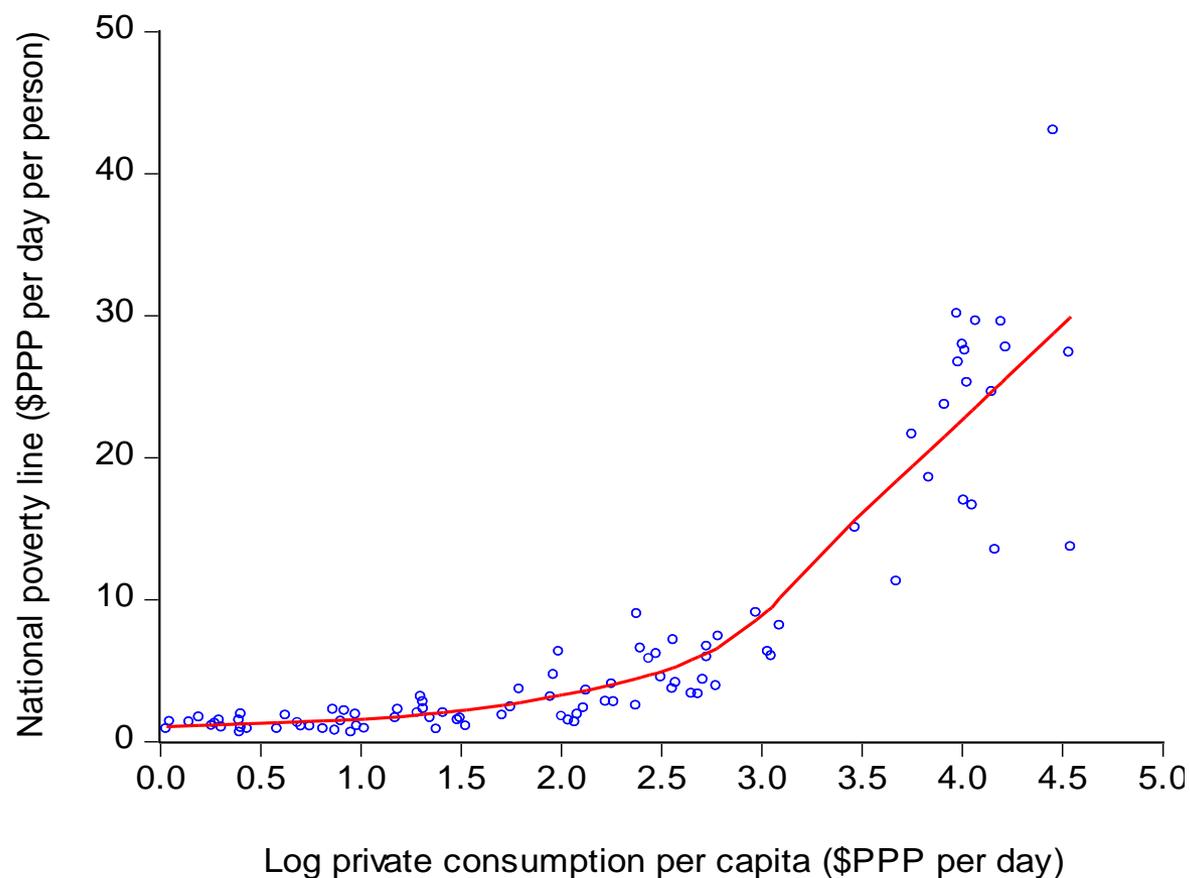
# 2. Social effects on welfare or social norms?

# Stepping back: Why do we see higher (real) poverty lines in richer countries?



Log private consumption per capita ($PPP per day)

# Two possible reasons for the relativist gradient

1. **Social norms:** Richer countries implicitly use a higher reference level of welfare for defining poverty. Then we would want to use a <span style="color:red">common social norm</span> ➔ an absolute line in terms of real income.

2. **Social effects:** Relative deprivation or rising costs of social inclusion (avoiding shame). Then a relative line is called for if we are to be absolute in terms of welfare.

<span style="color:red">Can we say which is right?</span>

# The big uncertainty about global poverty!

- The problem is that we do not know which of these two interpretations—differing social norms or social effects—is right.

- And we may never resolve the matter from conventional empirical evidence.

  - There have been many claims about the existence of various social effects on subjective welfare responses, though problems remain in credibly identifying such effects.*

- This uncertainty makes it compelling to consider both approaches when measuring global poverty.

* Martin Ravallion, 2012, "Poor or Just Feeling Poor?" Policy Research Working Paper 5968.

# Proposed bounds to global poverty

- Absolute poverty measures can be interpreted as the lower bound to the true welfare-consistent measure.
  - The lower bound assumes that the relativist gradient only reflects differing social norms.

- A weakly relative measure of poverty provides its upper bound, allowing for social effects on welfare.
  - The upper bound assumes that the relatavist gradient stems solely from social effects on welfare—extra spending needed to attain the same level of welfare in richer countries.

# 3. The lower bound: New global <u>absolute</u> poverty measures

# Steps in measuring global absolute poverty

1.  The international line is converted to local currencies at Purchasing Power Parity in 2005—the latest International Comparison Program benchmark year

2.  It is then converted to the prices prevailing at the time of the relevant household survey using the best available price index for that country.

3.  Then the poverty rate is calculated from that survey using the micro data or specially commissioned tabulations.

4.  Interpolation/extrapolation methods using national accounts data are used to line up the survey-based estimates with these reference years, including 2008.

Further reading: Shaohua Chen and Martin Ravallion, 2010, "The Developing World is Poorer than we Thought, but no Less Successful in the Fight Against Poverty", *Quarterly Journal of Economics*, 125(4): 1577-1625.
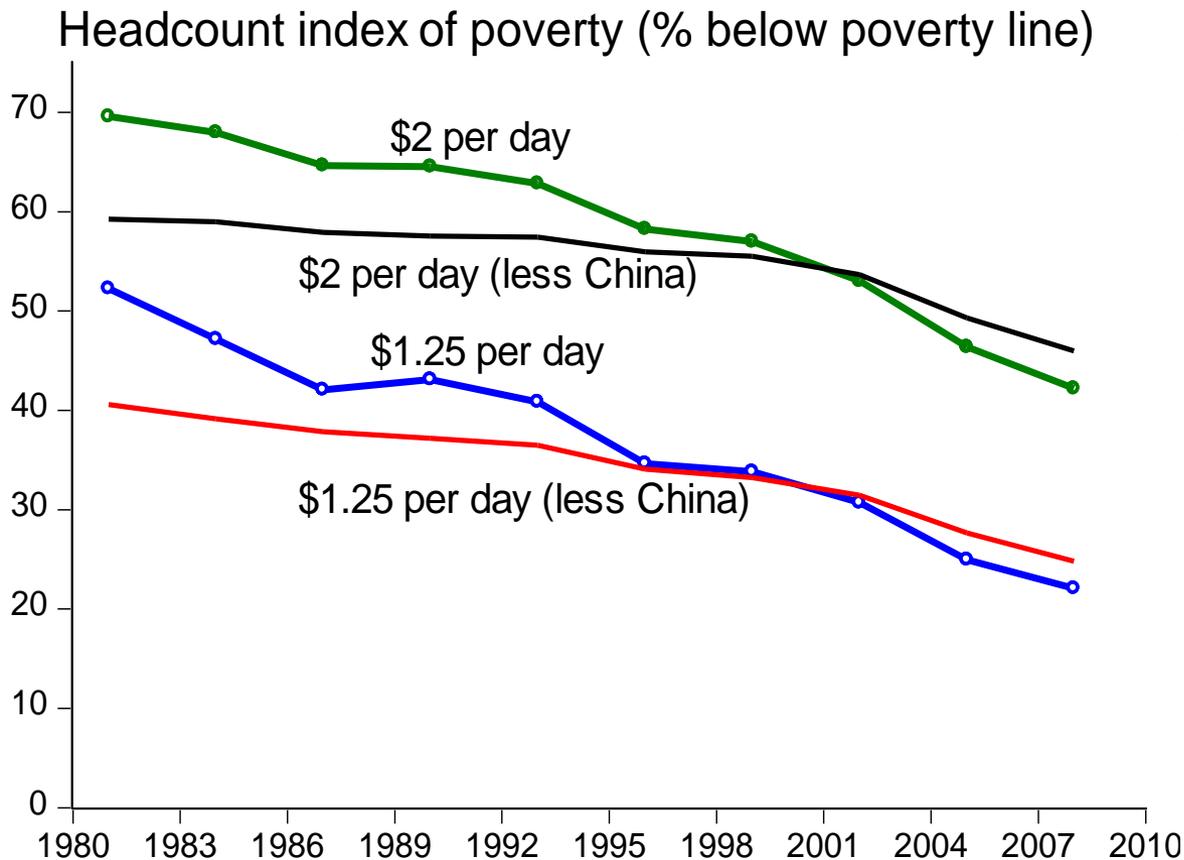
# Huge expansion in survey coverage since 1980s

- 22 countries in the original "$1 a day" measures for 1985 with one survey per country

- Today: 125 countries; over 900 surveys; 6+ per country

- Latest surveys: Sample of 2.1 million households

- Consumption preferred to income

- Comprehensive consumption aggregate

- But not complete welfare metric: Need to supplement with other measures to capture <u>non-market goods</u> and <u>intra-household inequality</u>.

# But many data challenges remain

- Lags and uneven coverage
  - 90% of population represented for developing world as a whole (94% East Asia)
  - But only 50% for Middle-East and North Africa
  - Declining coverage back in time
- Comparability over time and across countries
  - Differences in questionnaire design and definitions (consumption or income aggregates)
- Under-reporting and selective compliance
  - But not valid to replace survey means by national accounts aggregates, holding inequality (Lorenz curve) constant
  - The problems are unlikely to be distribution neutral

# Progress for the poorest in the aggregate

Over 1981-2008, the % of the developing world's population living below $1.25 a day was halved, from 52% to 22%.



Headcount index of poverty (% below poverty line)

$2 per day

$2 per day (less China)

$1.25 per day
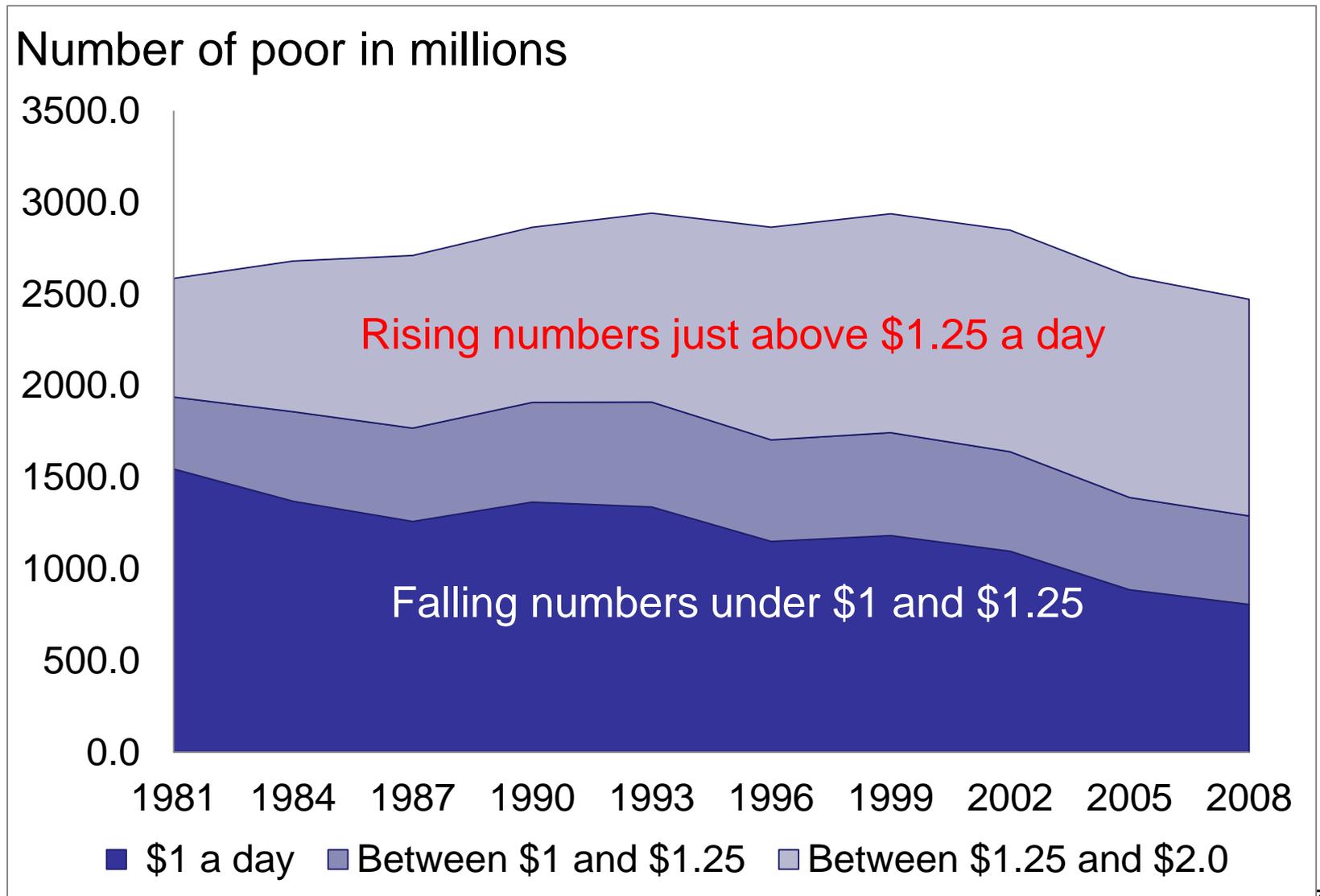
$1.25 per day (less China)

- Number of poor fell by nearly 700 million, from 1.9 billion to 1.3 billion.
- Aggregate poverty rate fell in all years.
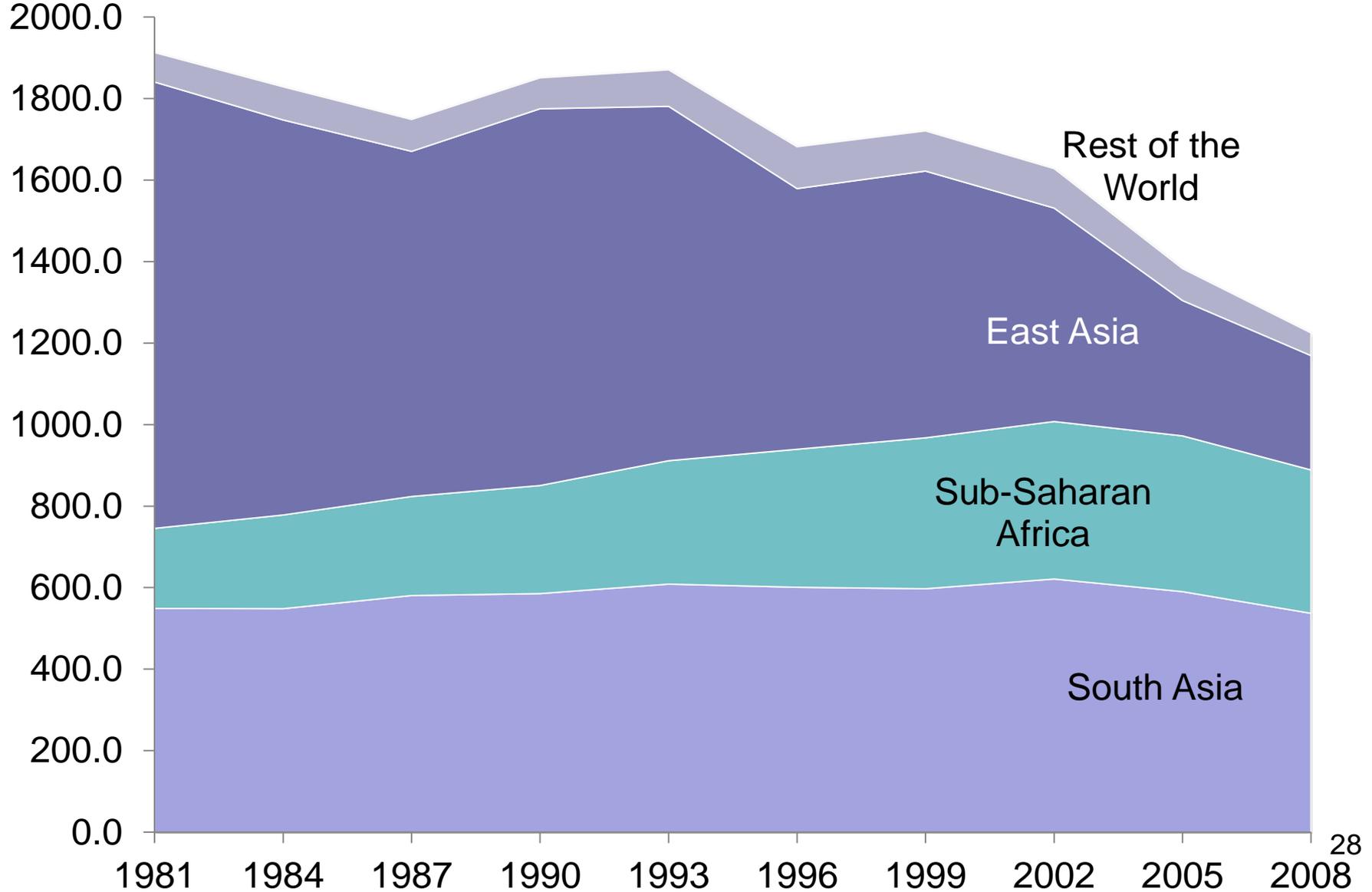
# Millennium Development Goal 1?

- MDG1: To halve the 1990 "extreme poverty" rate by 2015.

- Using $1.25 a day as the line, the 1990 rate was 43.1%.

- Estimates for 2010 (representing 80% of population): 21% living below $1.25.

- So MDG1 was attained by 2010—5 years ahead of the target date—despite the crises.

- But we did not attain MDG1 for developing world outside China.

# Less progress in getting over $2 a day

Number of poor in millions



Rising numbers just above $1.25 a day

Falling numbers under $1 and $1.25

Legend: ■ $1 a day  ■ Between $1 and $1.25  ■ Between $1.25 and $2.0

X-axis: 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005, 2008

Y-axis: 0.0, 500.0, 1000.0, 1500.0, 2000.0, 2500.0, 3000.0, 3500.0

# And uneven progress across regions

Millions living < $1.25



Rest of the World

East Asia

Sub-Saharan Africa
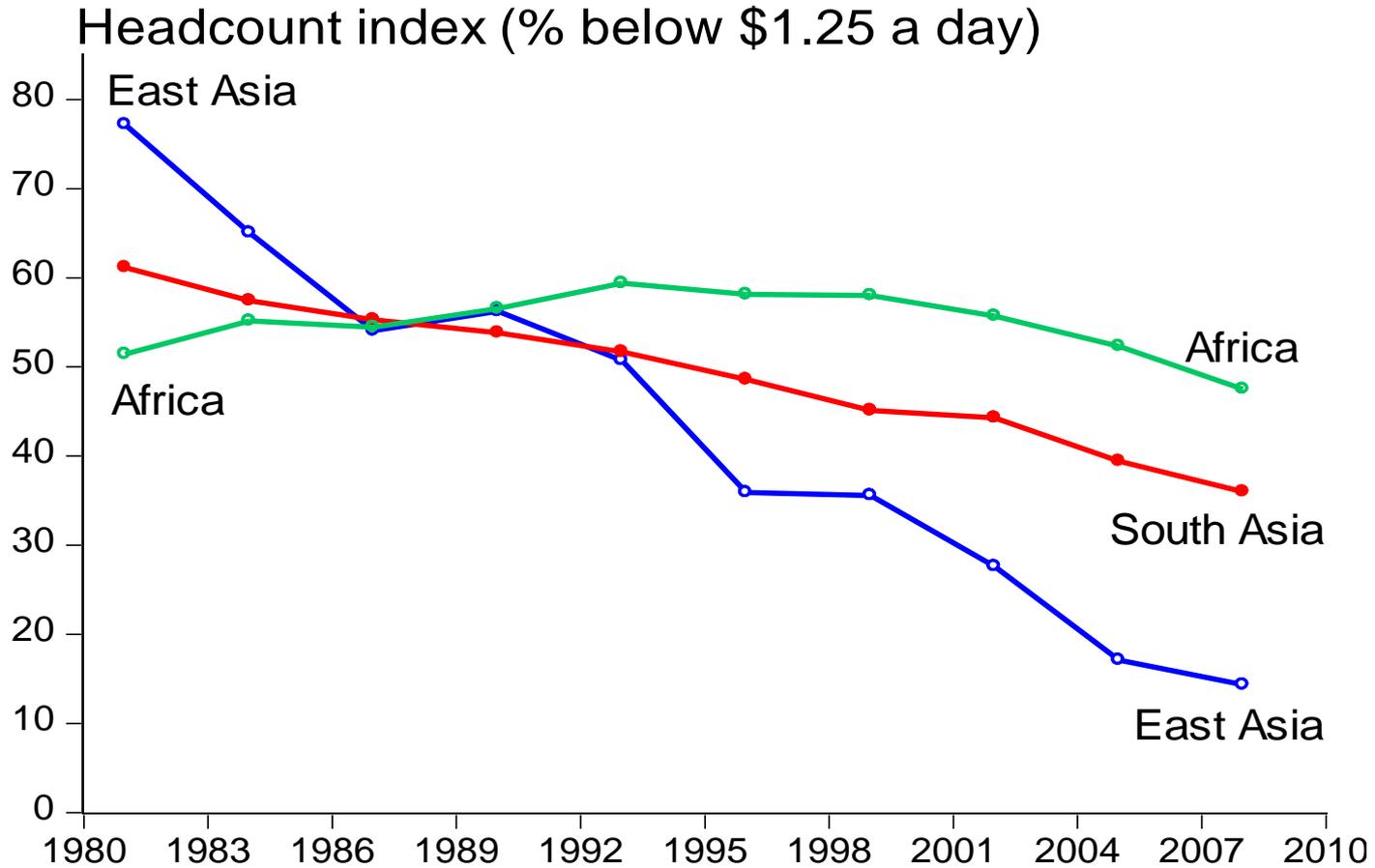
South Asia

# Not just about success in China!

- Since 2000 we have seen a marked acceleration in poverty reduction outside China.

- Ratification of MDGs at *Millennium Summit* of 2000? Maybe, but very hard to say.

Headcount index (% below $1.25 a day; excluding China)

0.4% point per year

MDGs?

1.0% point per year

# A tale of three regions



Headcount index (% below $1.25 a day)
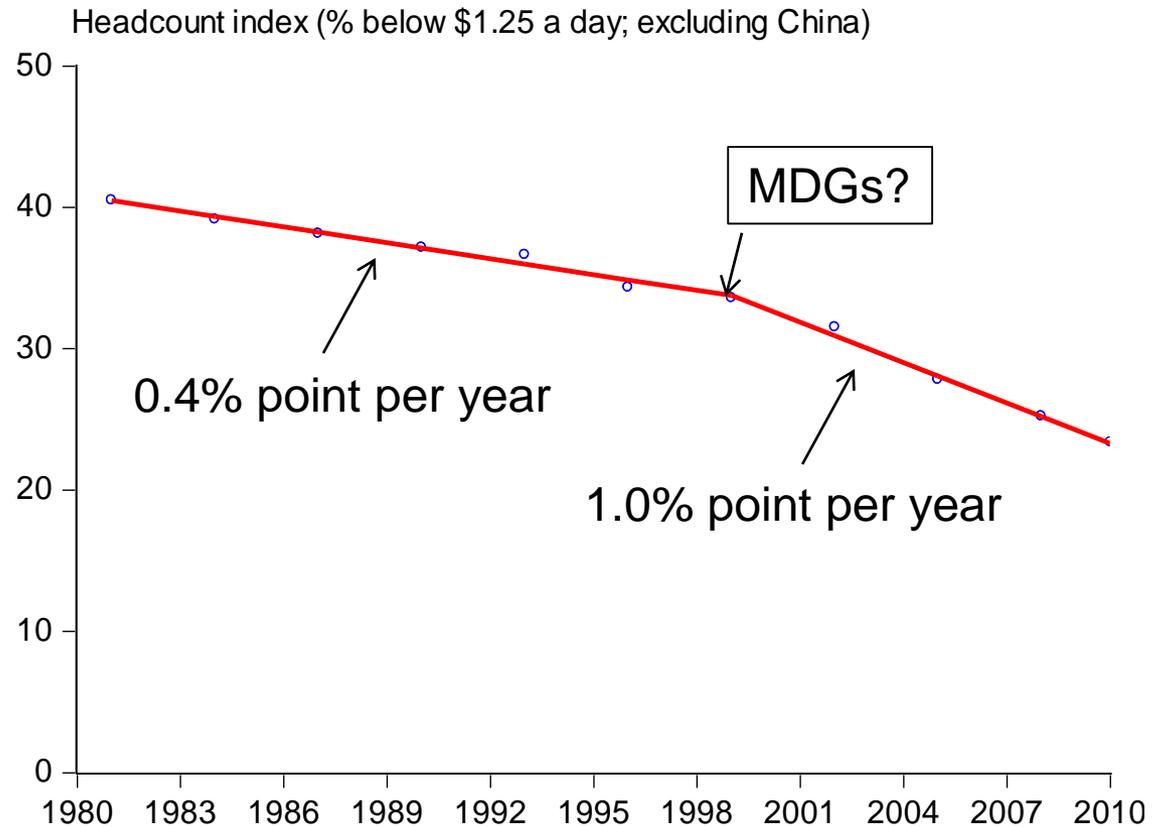
# 4. The upper bound: New global <u>relative</u> poverty measures

# Weakly relative lines calibrated to national lines

- For the upper bound, we use the line that is expected for each country/date according to its level of mean consumption.

- So to be not judged "poor" globally a person must be neither poor according to the fixed international line nor poor according to the line expected in the country of residence.

# Global (weakly) relative poverty lines

The average relative line in a country with mean $M$ is:

$$Z(M_{it}) \equiv \$1.25 + \max[M_{it} - \$1.25, \, 0]/2$$

Poverty line (



Weakly relative

Slope=1/2

$1.25/day

$1.25/2
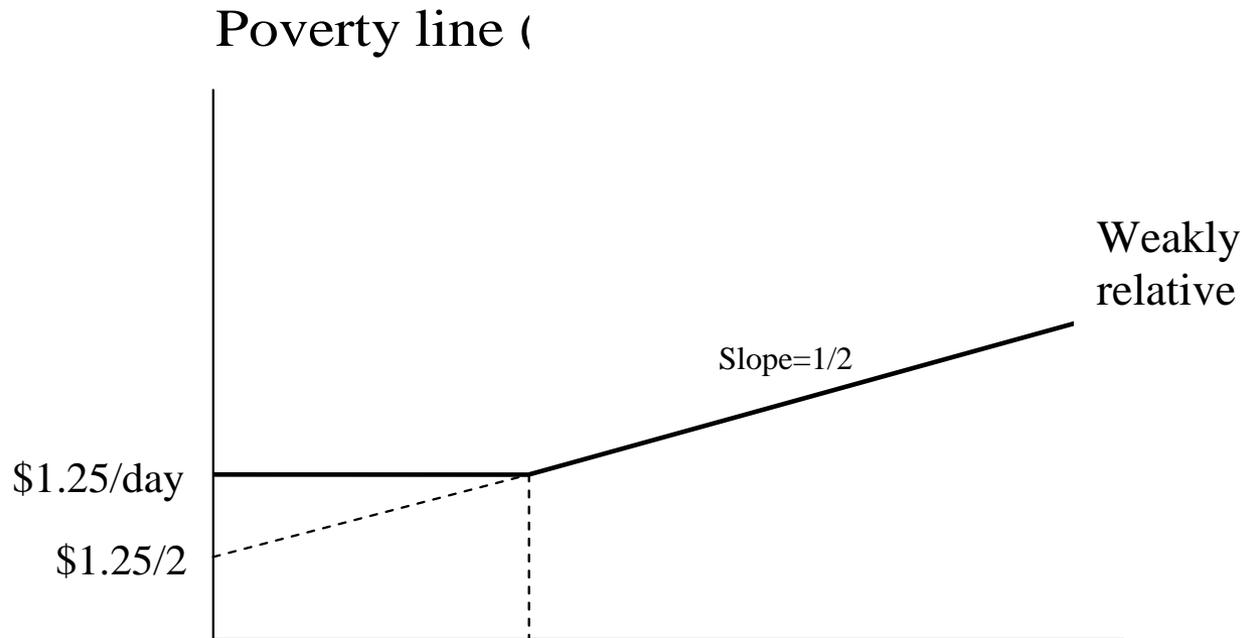
Excellent fit with data on national lines

# Average relative poverty lines ($/day)

| Region | 1981 | 2008 |
|---|---|---|
| East Asia and Pacific | 1.36 | 2.72 |
| China | 1.26 | 2.81 |
| Eastern Europe and Central Asia | 4.19 | 6.71 |
| Latin America and Caribbean | 4.51 | 5.93 |
| Middle East and North Africa | 2.84 | 3.24 |
| South Asia | 1.30 | 1.58 |
| Sub-Saharan Africa | 1.71 | 1.78 |
| **Total** | **2.09** | **2.94** |

# Absolute and relative poverty in the developing world

Headcount index (% below poverty line)



Upper bound: absolute + relative

Lower bound: absolute poverty

Rising proportion of relatively poor:
80% of the relatively poor in 1981
were absolutely poor, but by 2008 the
proportion had fallen to under half.
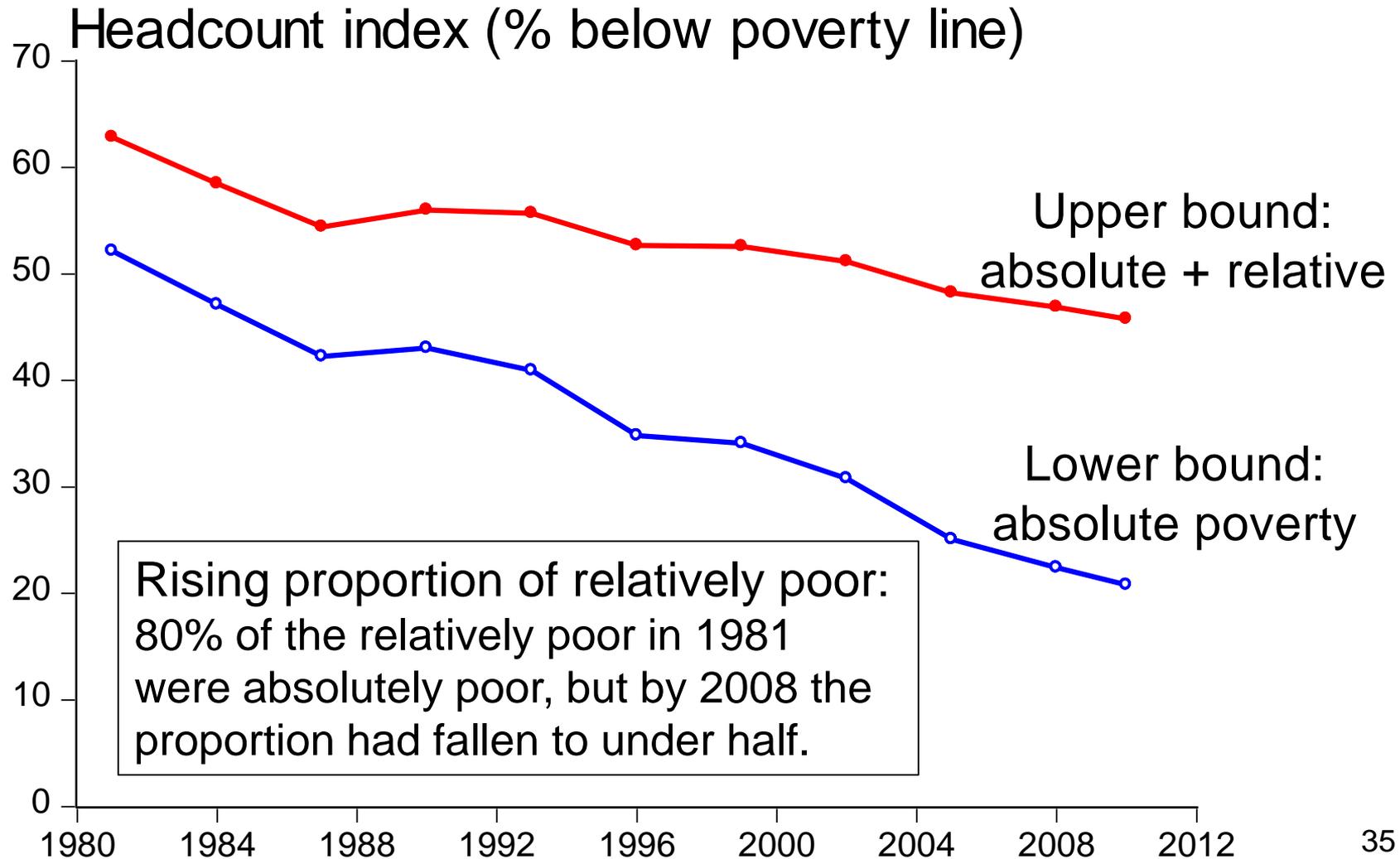
# Numbers of absolutely and relatively poor

Number of poor in millions
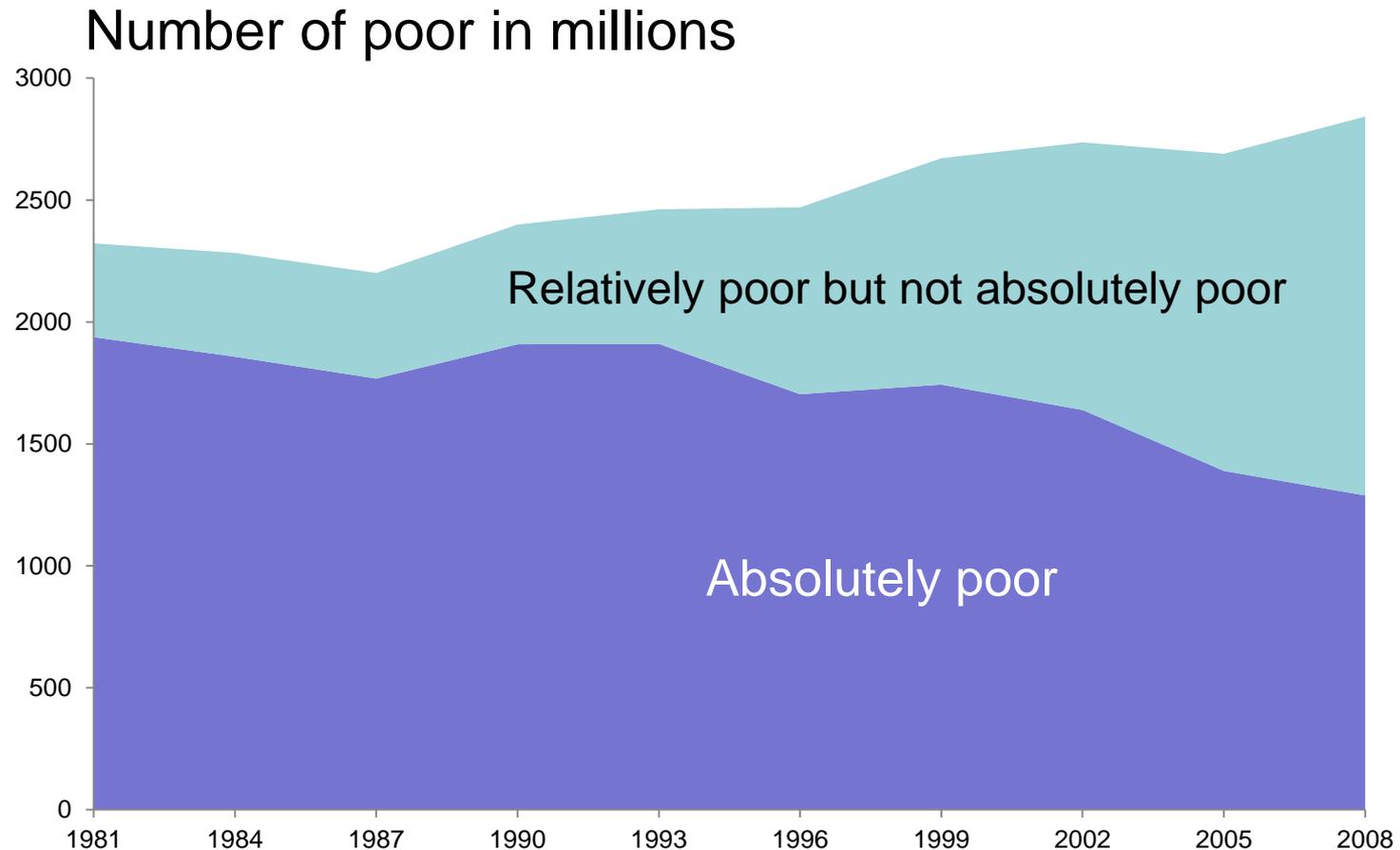


Two-thirds of the increase in the number of people who are relatively poor but not absolutely poor is accountable to the decrease in the number of absolutely poor.

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# Poor by region in 2008

| Poverty rate (% of population deemed to be poor) | Relatively + absolutely poor | Of whom absolute poor |
|---|:---:|:---:|
| East Asia and Pacific | 42.4 | 14.3 |
| Europe and Central Asia | 28.2 | 0.5 |
| Latin America and Caribbean | 45.9 | 6.5 |
| Middle East and North Africa | 35.0 | 2.7 |
| South Asia | 53.5 | 36 |
| Sub-Saharan Africa | 61.1 | 47.5 |
| **Total** | **46.9** | **22.4** |

# 5. A global  perspective on poverty

# Truly global poverty

- Weakly relative lines applied to all countries.
- World Bank data base (Chen-Ravallion) for developing countries + Luxembourg Income Study for High-Income Countries (HICs)
- Virtually no absolute $1.25 a day poverty in HICs.
- Relative poverty in HICs, but rising relative poverty in middle-income countries.

# Truly global poverty rates and the differences between rich and poor countries
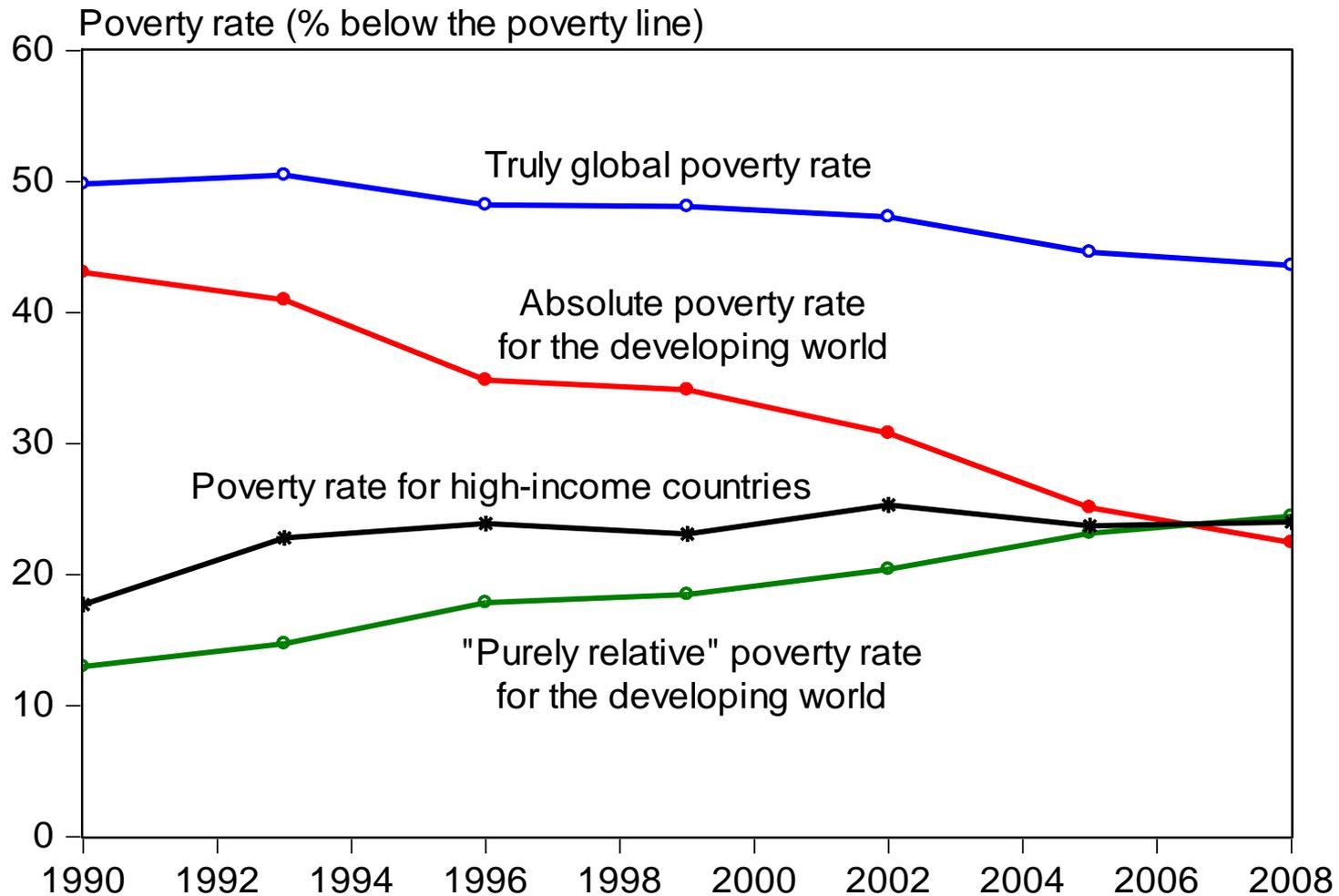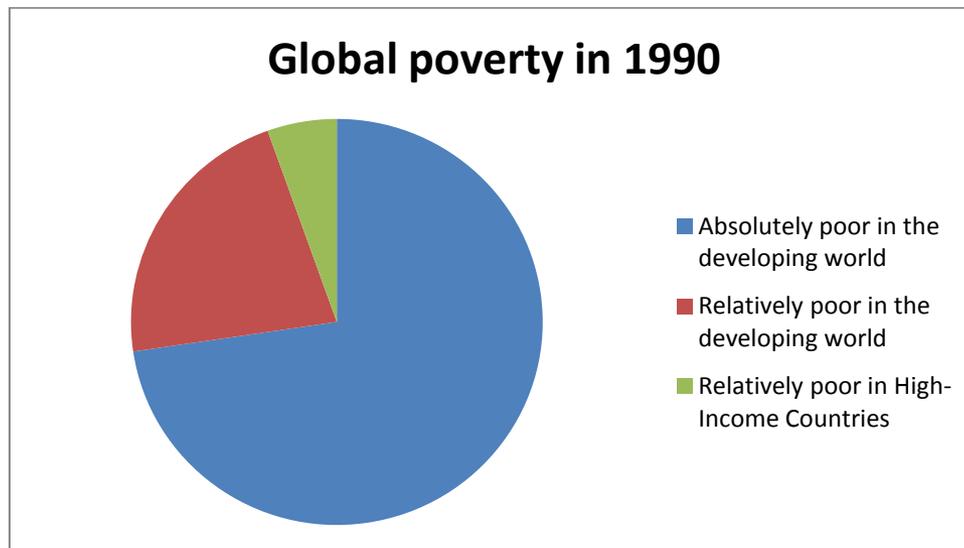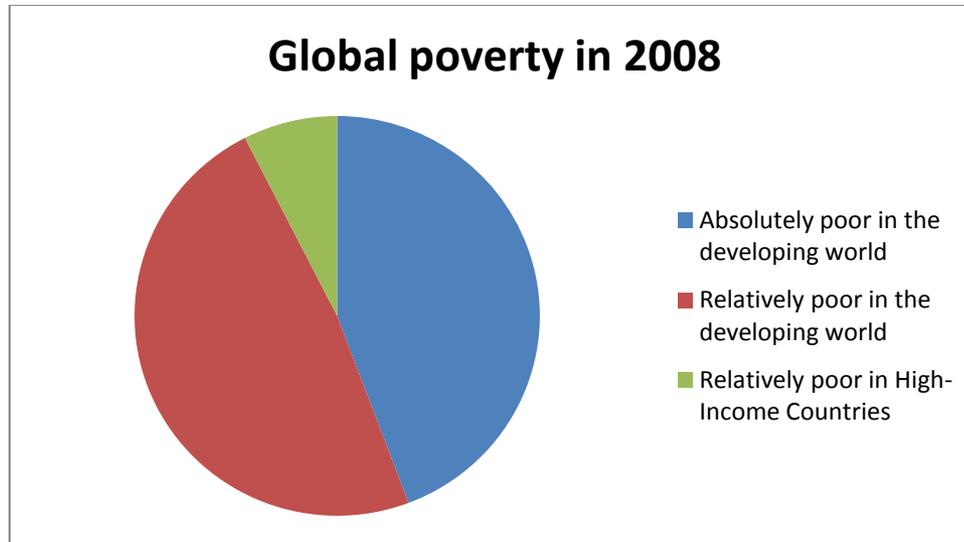
# Poverty measures for the world 1990-2008

| | 1990 | 1993 | 1996 | 1999 | 2002 | 2005 | 2008 |
|---|---|---|---|---|---|---|---|
| **Poverty rate (% of population who are poor either absolutely poor or relatively)** | | | | | | | |
| Global total | 49.8 | 50.5 | 48.2 | 48.1 | 47.3 | 44.6 | 43.6 |
| For those in high-income countries | 17.7 | 22.8 | 23.9 | 23.1 | 25.3 | 23.7 | 24.0 |
| For those in the developing world | 56.0 | 55.7 | 52.7 | 52.6 | 51.2 | 48.2 | 46.9 |
| Of whom absolutely poor | 43.1 | 41.0 | 34.8 | 34.1 | 30.8 | 25.1 | 22.4 |
| Of whom relatively poor only | 13.0 | 14.7 | 17.9 | 18.5 | 20.4 | 23.1 | 24.4 |
| **Number of poor (millions)** | | | | | | | |
| Global total | 2626.5 | 2786.5 | 2778.9 | 2887.7 | 2949.0 | 2883.4 | 2912.1 |
| For those in high-income countries | 143.5 | 188.9 | 201.8 | 199.0 | 222.4 | 212.4 | 219.2 |
| For those in the developing world | 2483.0 | 2597.6 | 2577.1 | 2688.7 | 2726.6 | 2671.0 | 2692.9 |
| Of whom absolutely poor | 1908.6 | 1910.3 | 1704.0 | 1743.4 | 1639.3 | 1389.6 | 1289.0 |
| Of whom relatively poor only | 574.4 | 687.3 | 873.1 | 945.3 | 1087.3 | 1281.4 | 1403.9 |
| **Poverty gap index (%)** | | | | | | | |
| Global total | 17.9 | 18.0 | 17.1 | 17.1 | 17.1 | 15.6 | 15.2 |
| For those in high-income countries | 5.8 | 7.7 | 8.4 | 7.7 | 10.0 | 8.0 | 8.3 |
| For those in the developing world | 20.3 | 19.9 | 18.7 | 18.8 | 18.3 | 16.9 | 16.3 |

Source: Authors' calculations.

# Counts of global poverty 1990 and 2008



**Global poverty in 2008**

- Absolutely poor in the developing world
- Relatively poor in the developing world
- Relatively poor in High-Income Countries

**Global poverty in 1990**

- Absolutely poor in the developing world
- Relatively poor in the developing world
- Relatively poor in High-Income Countries

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# Observations 1

- Global poverty rate has been falling steadily from 50% in 1990 to 44% in 2008.

- But underlying this, we see sharply falling absolute poverty rates for the developing world, and rising relative poverty rates in both worlds, though less steeply for HICs.

- There are also clear signs of <u>convergence</u> in the overall poverty rates between the two worlds; in 1990, the overall poverty rate (absolute plus relative) was three times higher in the developing world, but this had fallen to double by 2008.

# Observations 2

- Possibly the most striking finding is that <u>relative</u> poverty is now overwhelmingly a problem of the developing world.

- Despite the fact that the average line in developing countries is only one eighth of that for HICs, the proportion of the population who are relatively poor is about the same at 24% in both sets of countries in 2008.

- In terms of the poverty counts, 9 out of 10 people who are poor by the typical standards of the country one lives in but not absolutely poor are now found in developing countries.

- The developing world contained 92% of the poor, and 86% of the purely relatively poor (its share of the world's total population, given that the purely relative poverty rates are about the same).

# 6. Conclusions

# Falling absolute poverty

- Socio-economic data from the developing world are improving over time, but still much work to do.

- The "$1.25 a day" poverty line aims to assess poverty in the world as a whole by the standards of what poverty means in the poorest countries.

- Robust evidence of declining overall absolute poverty across all regions. But uneven progress.

- MDG1 was reached in 2010, despite the crisis.

- But uneven progress across regions; MDG1 <u>not</u> met in developing world as a whole outside East Asia.

# Rising numbers of relatively poor

- Less progress against relative poverty—as judged by typical standards for each country.

- Rising numbers of relatively poor, though current trajectories imply stabilization of total in next decade.

- With economic growth, the relative poverty line tends to rise, and proportionately more as mean income rises.

- Deceleration in progress against relative poverty due to both the direct impact on the poverty line and the effect on the responsiveness of poverty to economic growth.

- Slower progress against relative poverty can be seen as the "other side of the coin" to success against absolute poverty.

# Implications for development-policy debates

*Absolute versus relative?*

- Policy makers should <u>not</u> frame the problem of measuring poverty as a choice between "absolute" and "relative" measures.

- Rather they should be thought of as lower and upper bounds to the (unknown) absolute measure in the space of welfare. <u>Both</u> measures are needed.

*Growth versus redistribution?*

- There has been a shift in emphasis in development thinking toward the role played by inequality in stalling growth and <u>absolute</u> poverty reduction.

- Greater attention to relative poverty will further strengthen this shift.