Changes over Time in the Global Multidimensional Poverty Index

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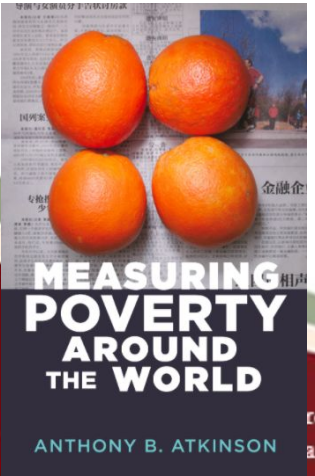
Agenda

1. Background and motivation
2. Methodology
    - Global MPI
    - Estimation of trends
3. Data
    - Global MPI and harmonisation
    - Supplementary data
4. Key findings
        - Understanding poverty reduction
        - Drivers of Changes
        - Triangulation of poverty trends
5. Conclusion

Why should you read this book?

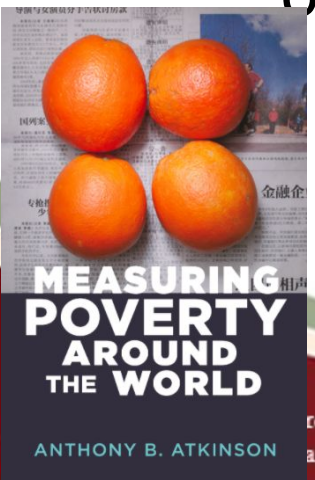
it seeks to provide the evidence about the extent and nature of poverty that is necessary to spur action and to design effective policies. Greater understanding of what is meant by 'poverty' and its relation to action worldwide is, I believe, essential to keep the challenge high on the agenda of governments and citizens at a time when there is a risk that we become inward-looking and dismissive of the urgent need to work together.

Introduction, page 1 paragraph 2.



Why Multidimensional Poverty?
Ch 2: Participatory views:

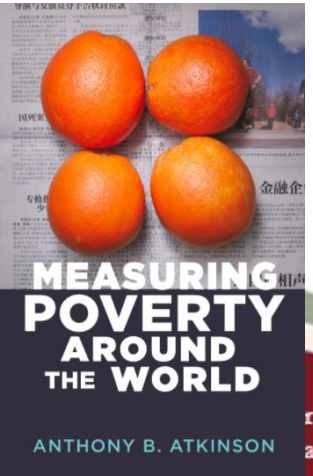
The findings of the 'Voices of the Poor' study suggested that poverty was seen as consisting of many interlocking dimensions, where lack of food, poor health and illness, lack of access to public goods, and powerlessness were judged to be more important than monetary poverty. This underlies the significance of introducing nonmonetary poverty and of applying multidimensional indicators. p 32



And why this paper on poverty trends?

Ch 2: Political action & assessing performance

Statistical evidence about the extent and nature of poverty has been a major factor influencing political action in part because the existence of poverty reveals policy failure. <u>The statistics are a performance indicator.</u> P30



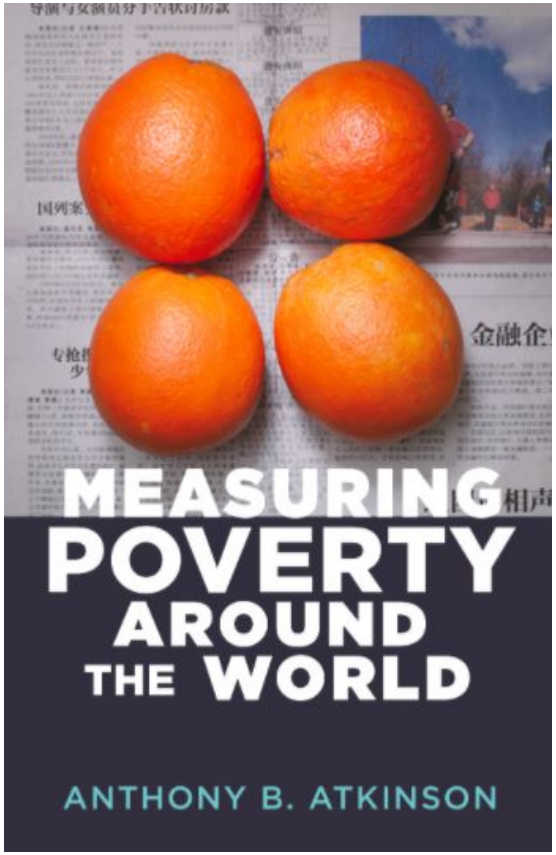
Motivation

Follow Atkinson's call

- Need for complementary measures
- Complex poverty profiles to better understand poverty

Go beyond a single time point

- Important to analyse trends and assess progress on SDGs (Goal 1)
- Showcase positive examples
- Identify barriers to reduction in MPI (population growth, shocks)



Contribution

Largest study of MPI trends to date

- 80 countries and 5 billion people
- Subnational regions, urban/rural area and age group disaggregation
- Includes additional global MPI measures: destitution, vulnerability, severity

Triangulating poverty trends

- Monetary and multidimensional
- Global and national

Background

MPI and monetary often identify different populations and levels of poor (Evans, Nogales and Robson 2020)

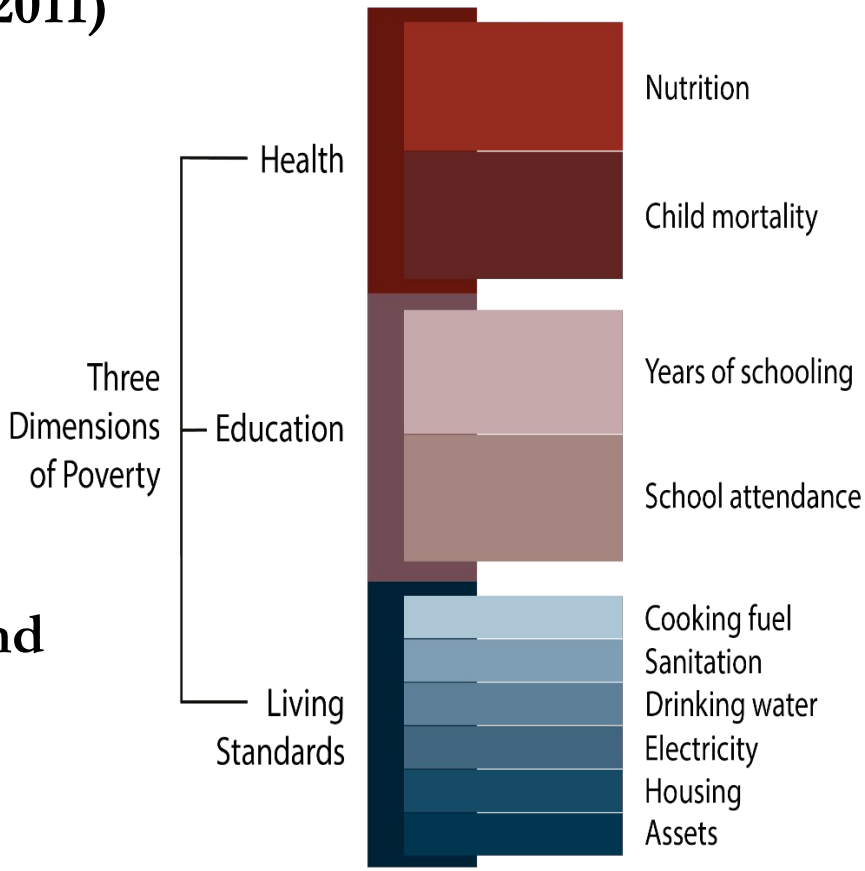
- Report on different aspects of poverty (Suppa 2016)
- Use different measures added benefit of intensity in MPI

Build on earlier analysis on mismatches and trends in MPI

- Alkire, Roche and Vaz 2014 – 34 countries
- Alkire, Oldiges and Kanagaratnam 2018 – India

Methodology – Global MPI

- Based on Alkire-Foster method (2011)
- Acute measure of poverty in a developing country context
- DHS, MICS and national surveys
- 100+ countries
- Disaggregated by region, area, and age group
- Fix set of indicators



 Cross-country comparability

Estimation: changes in MPI

Notation

- t^1 and t^2 denote initial and final periods
- X_{t^1} and X_{t^2} are the achievement matrices for both periods

- The same set of parameters is used across the two periods (deprivation cutoffs, weights, poverty cutoff)

- Expressions are equally applicable to:
  - incidence (H),
  - intensity (A),
  - censored headcount ratios ($h_j(k)$), and
  - uncensored headcount ratios (h_i).

Estimation: changes in MPI

Annualized Absolute Rate of Change

$$\bar{\Delta}MPI = \frac{MPI(X_{t^2}) - MPI(X_{t^1})}{t^2 - t^1}$$

Annualized Relative Rate of Change

$$\bar{\delta}MPI = [(\frac{MPI(X_{t^2})}{MPI(X_{t^1})})^{\frac{1}{t^2 - t^1}} - 1] \times 100$$

Estimation: Demographic Shifts

The interpretation of changes in poverty estimates can be influenced by demographic changes

- Population growth
- Rural-urban migration
- Internal and international migration
- Shocks (disaster, war, epidemics)
- Demographic patterns (aging)

Demographic shifts affect:

- Comparisons across time
- Comparisons across population subgroups

Data and Countries

80 countries selected from global MPI according to set criteria

- Periods between 3 and 12 years (min. 3 years)

DHS, MICS and national surveys

- Data from 2000 to 2019

Covers all developing world regions

- Arab States
- East Asia and the Pacific
- Europe and Central Asia

Harmonizing data

Guarantees rigorous comparisons of changes in MPI and its associated statistics over time

Indicators harmonized using the same specification in both years

- Eligible subsample and reference population
- Information included (e.g. birth history data)
- Deprivation cutoffs (e.g. classifications)

Also applies to disaggregations

- Region comparability

Supplementary data

Triangulations include trends using additional measures

- Global and national
- Multidimensional and monetary

- $1.90/day and $3.20/day (extrapolated)
- National poverty line
- National MPI (if applicable)
- Trends in global MPI
- Trends in associated measures – destitution, vulnerability, severity

Understanding poverty reduction

MPI captures two ways of reducing poverty

- Lowering the proportion of people in poverty (H)
- Lowering the average deprivation share of the poor (A)

Drivers of change

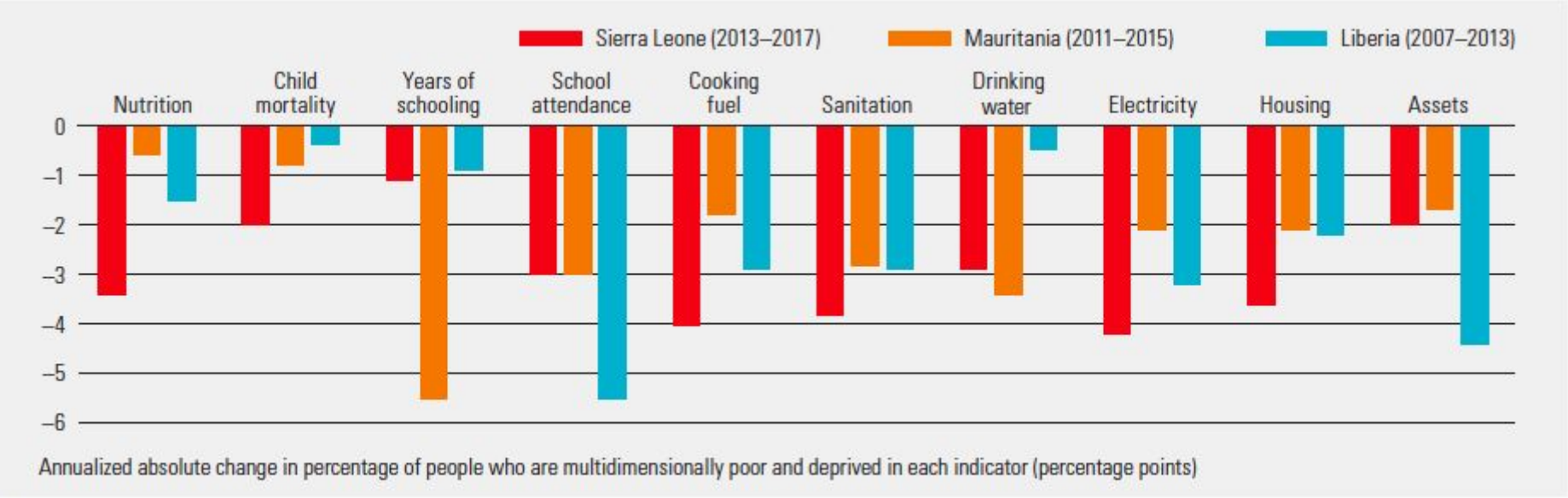
- Censored and uncensored headcount ratio of indicators
- Changes in number of poor

Leaving No One Behind – pro-poor reduction?

- Did the poorest countries reduce the fastest?
- Did the poorest subnational regions perform well?
- Did the poorest age group progressed fastest?

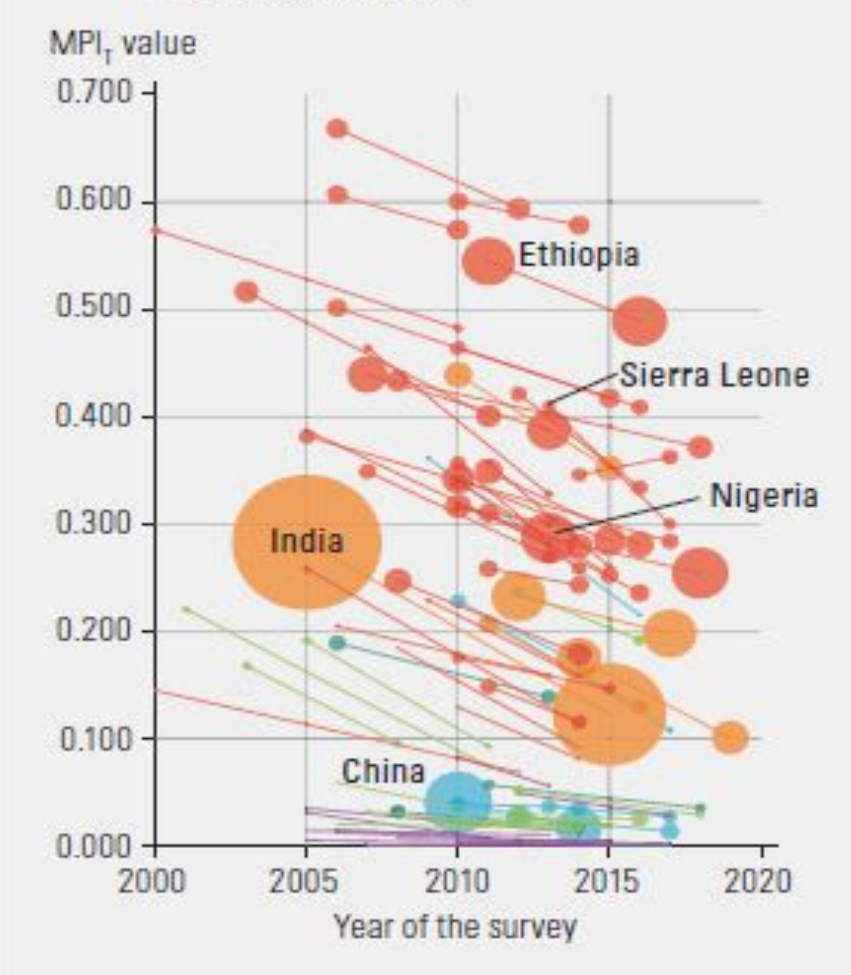
Key findings

Fastest absolute progress:
Sierra Leone (2013-2017), Mauritania (2011-2015), Liberia (2007-2013)



In relative terms, countries with lowest level of poverty reduce the fastest: North Macedonia (2005/06-2011), China (2010-2014), Armenia (2010-2015/16)

Key findings



67 countries significantly reduced MPI (α=0.05)

- These countries are home to 98% of the poor in *t1* and 97% in *t2*

64 countries with significant reduction in H (α=0.05)

68 countries with significant reduction in A (α=0.05)

- Arab States
- East Asia and the Pacific
- Europe and Central Asia
- Latin America and the Caribbean
- South Asia
- Sub-Saharan Africa

Annualised absolute reduction in MPI

MPI more sensitive to changes in headcount ratios

	MPI data source				MPI		Annualized ch.	
Country	Survey	Year 1	Survey	Year 2	Year 1	Year 2	Abs. ch.	Sig.
Sierra Leone	DHS	**2013**	MICS	**2017**	0.409	0.300	-0.027	***
Mauritania	MICS	**2011**	MICS	**2015**	0.357	0.260	-0.024	***
Liberia	DHS	**2007**	DHS	**2013**	0.464	0.328	-0.023	***
Timor-Leste	DHS	**2009/10**	DHS	**2016**	0.362	0.215	-0.023	***
Guinea	DHS	**2012**	MICS	**2016**	0.421	0.334	-0.022	***
Rwanda	DHS	**2010**	DHS	**2014/15**	0.357	0.259	-0.022	***
Lao PDR	MICS	**2011/12**	MICS	**2017**	0.211	0.108	-0.019	***
Afghanistan	MICS	**2010/11**	DHS	**2015/16**	0.439	0.352	-0.017	***
Sao Tome and Principe	DHS	**2008/09**	MICS	**2014**	0.185	0.092	-0.017	***
Côte d'Ivoire	DHS	**2011/12**	MICS	**2016**	0.310	0.236	-0.017	***

- **Top 10 fastest (H and A)**
- **Not in any Top 10 fastest**
- **Top 10 fastest (H only)**
- **Top 10 fastest (A only)**

Annualised relative reduction in MPI

MPI more sensitive to changes in headcount ratios

	MPI data source				MPI		Annualized ch.	
Country	Survey	Year 1	Survey	Year 2	Year 1	Year 2	Rel.. ch.	Sig.
North Macedonia	MICS	**2005/06**	MICS	**2011**	0.031	0.008	-0.004	***
China	CFPS	**2010**	CFPS	**2014**	0.041	0.018	-0.006	***
Armenia	DHS	**2010**	DHS	**2015/16**	0.001	0.001	0.000	*
Kazakhstan	MICS	**2010/11**	MICS	**2015**	0.003	0.002	0.000	**
Indonesia	DHS	**2012**	DHS	**2017**	0.028	0.014	-0.003	***
Turkmenistan	MICS	**2006**	MICS	**2015/16**	0.013	0.004	-0.001	***
Mongolia	MICS	**2010**	MICS	**2013**	0.083	0.056	-0.009	***
Sao Tome and Principe	DHS	**2008/09**	MICS	**2014**	0.185	0.092	-0.017	***
Lao PDR	MICS	**2011/12**	MICS	**2017**	0.211	0.108	-0.019	***
Kyrgyzstan	MICS	**2005/06**	MICS	**2014**	0.035	0.013	-0.003	***

- Top 10 fastest (H and A)
- Not in any Top 10 fastest
- Top 10 fastest (H only)
- Top 10 fastest (A only)

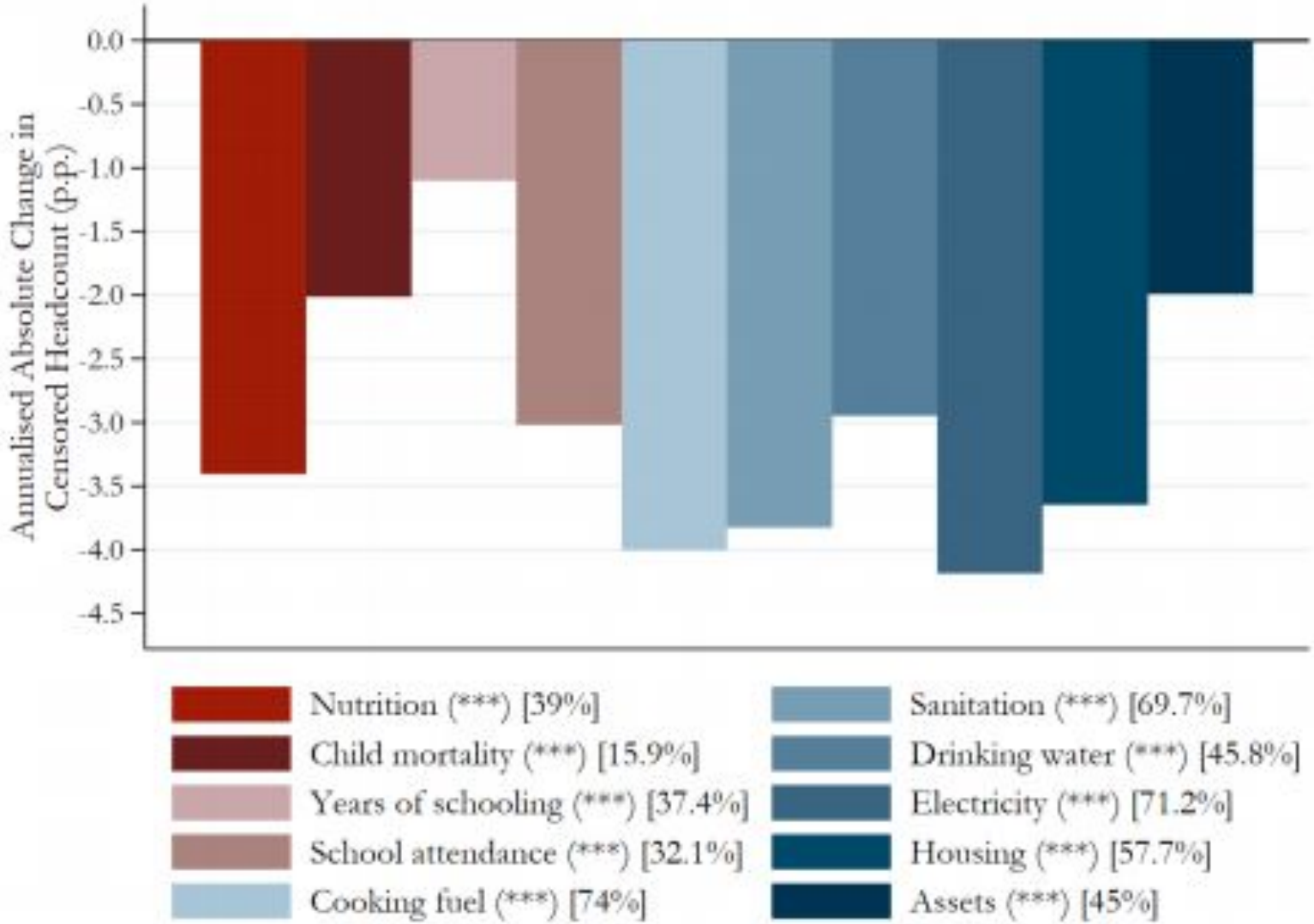
Case Study: Sierra Leone

- **Fastest absolute reduction in MPI (2013-2017)**
- **Progress despite the Ebola epidemic**
- **Some of the fastest reducing subnational regions**

	2013	2017	Annualised absolute change	Annualised relative change
MPI(T)	0.409	0.300	-0.027 ***	-7.5%
H	74.1%	58.3%	-3.9% ***	-5.8%
A	55.3%	51.5%	-0.9% ***	-1.8%

Case Study: Sierra Leone

Figure 2. Changes in censored headcount ratios (absolute) between 2013 and 2017



Leaving No One Behind

Absolute reduction in MPI(T) across subnational regions between 2013 and 2017

Some of the poorest regions had large reduction
But no definite pro-poor trend

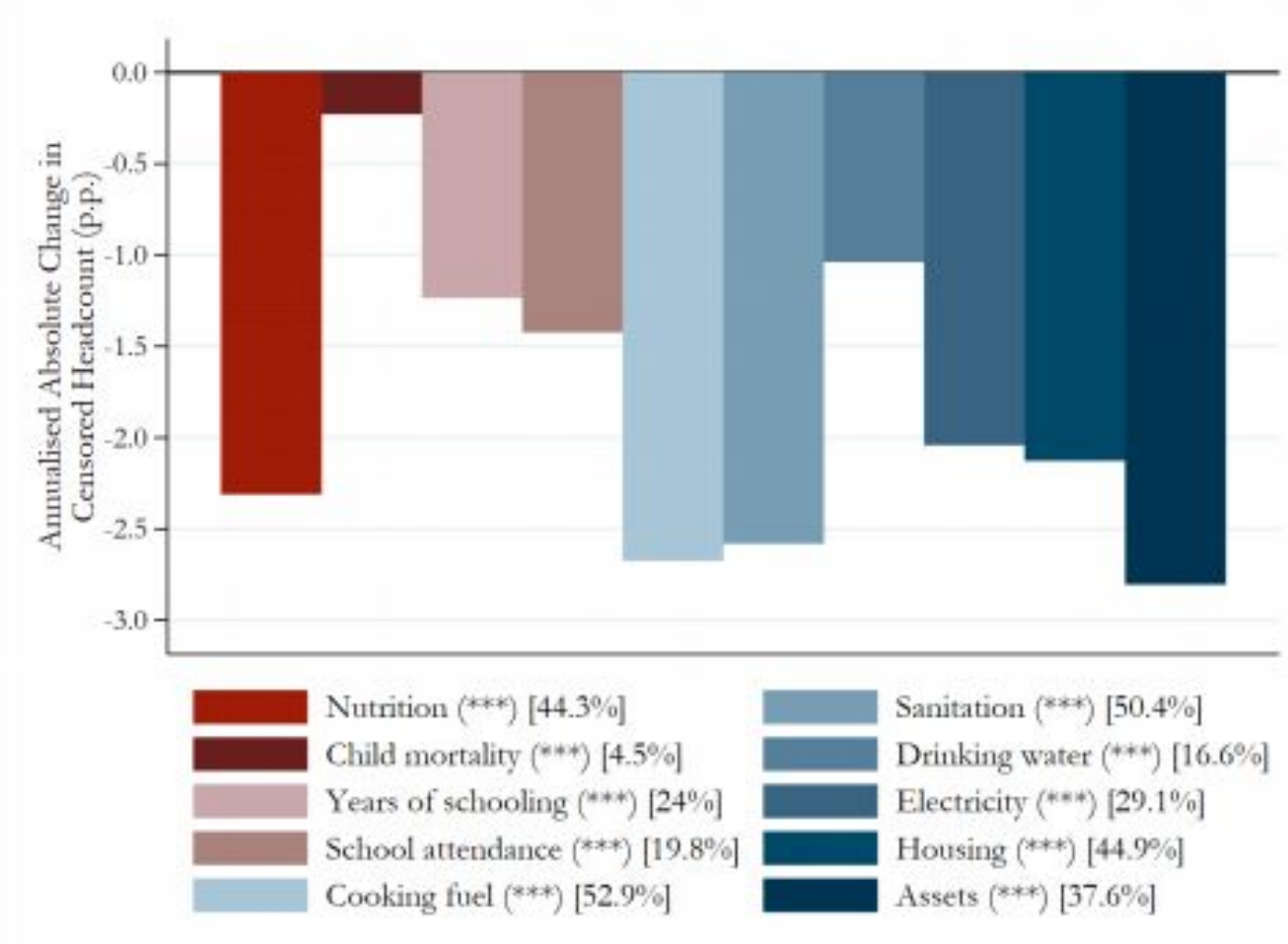
Case Study: India

- **Halved poverty according to MPI in 10 years**
- **Over 270 million people moved out of poverty**
  Reduction in all subnational regions

	2005/06	2015/16	Annualised absolute change	Annualised relative change
MPI(T)	0.283	0.123	-0.016 ***	-8.0%
H	55.1%	27.9%	-2.7% ***	-6.6%
A	51.3%	43.9%	-0.7% ***	-1.5%

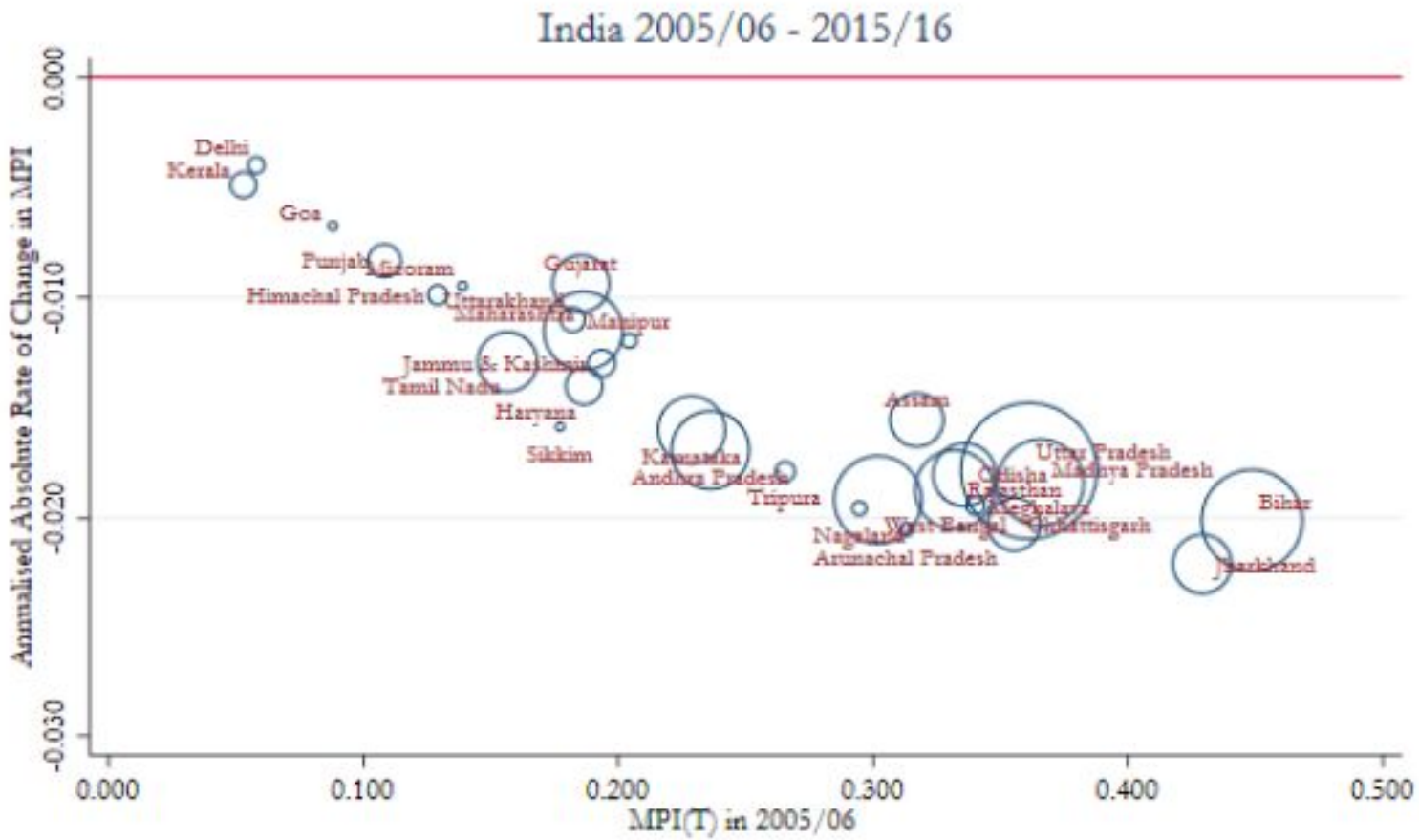
Case Study: India

Changes in censored headcount ratios (absolute) between 2005/06 and 2015/16



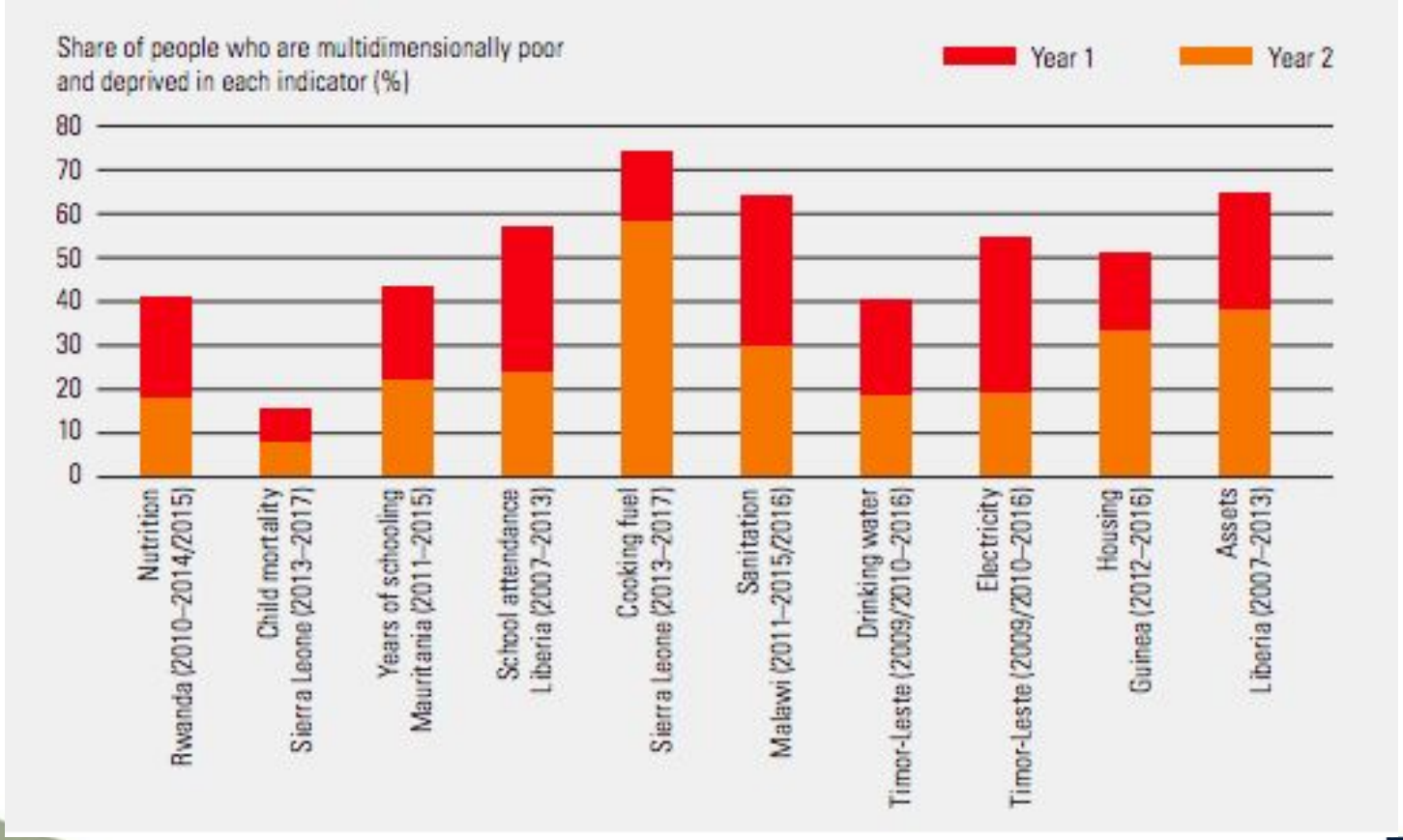
Case Study: India

Absolute reduction in MPI(T) across subnational regions between 2005/06 and 2015/16



Drivers of Changes - Indicators

20 countries with significant reduction across all indicators with 11 of them in Sub-Saharan Africa



Drivers of Changes – Population growth

Successful poverty reduction was hindered by high population growth, especially in Sub-Saharan Africa

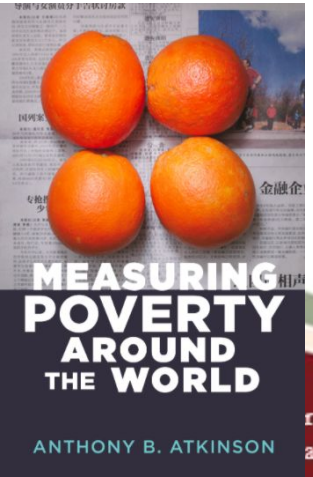
- Ethiopia reduced MPI from **0.545 to 0.489** between 2011-2016
- Despite, the number of people in poverty increased by 9% relative to its starting level

- Niger, the poorest country in *t1* reduced MPI from 0.688 to 0.594 between 2006-2012
- However, the number of poor increased, albeit only marginally (<1%)

Ch 3: Multidimensional poverty

When it comes to the national case studies, I shall be asking how far the evidence from the World Bank monetary poverty indicator—applying the International Poverty Line of $1.90—is coherent with the evidence regarding non-monetary poverty, making use of national as well as international studies. p81

Multidimensionality has been at the heart of the European concept of social inclusion, and when the member states of the EU came to agree on an overarching portfolio of indicators, it was multidimensional. p81



Triangulation of Trends

"In studying the global poverty estimates, it became increasingly clear to me that there was a worrying gulf between the measures of global poverty and the measurement of poverty at the level of the individual country"

Sir Antony B. Atkinson,
"Measuring Poverty Around the World"
Chapter 1. 2019

Triangulation of trends

Three monetary measures

- National monetary poverty headcount ratio
- $3.20 a day monetary poverty headcount ratio
- $1.90 a day monetary poverty headcount ratio

National + 4 global multidimensional measures

- Official National MPI headcount ratio
- Incidence of MPI (H_T)
- Incidence of destitution
- Incidence of vulnerability to multidimensional poverty
- Incidence of severe multidimensional poverty

Triangulation of trends

More than half the countries reduced

- Incidence of multidimensional poverty (64)
- Destitution headcount ratio (60)
- Severe poverty headcount ratio (59)
- Vulnerability headcount ratio (25)

Some mismatches with global or national poverty trends

Sierra Leone

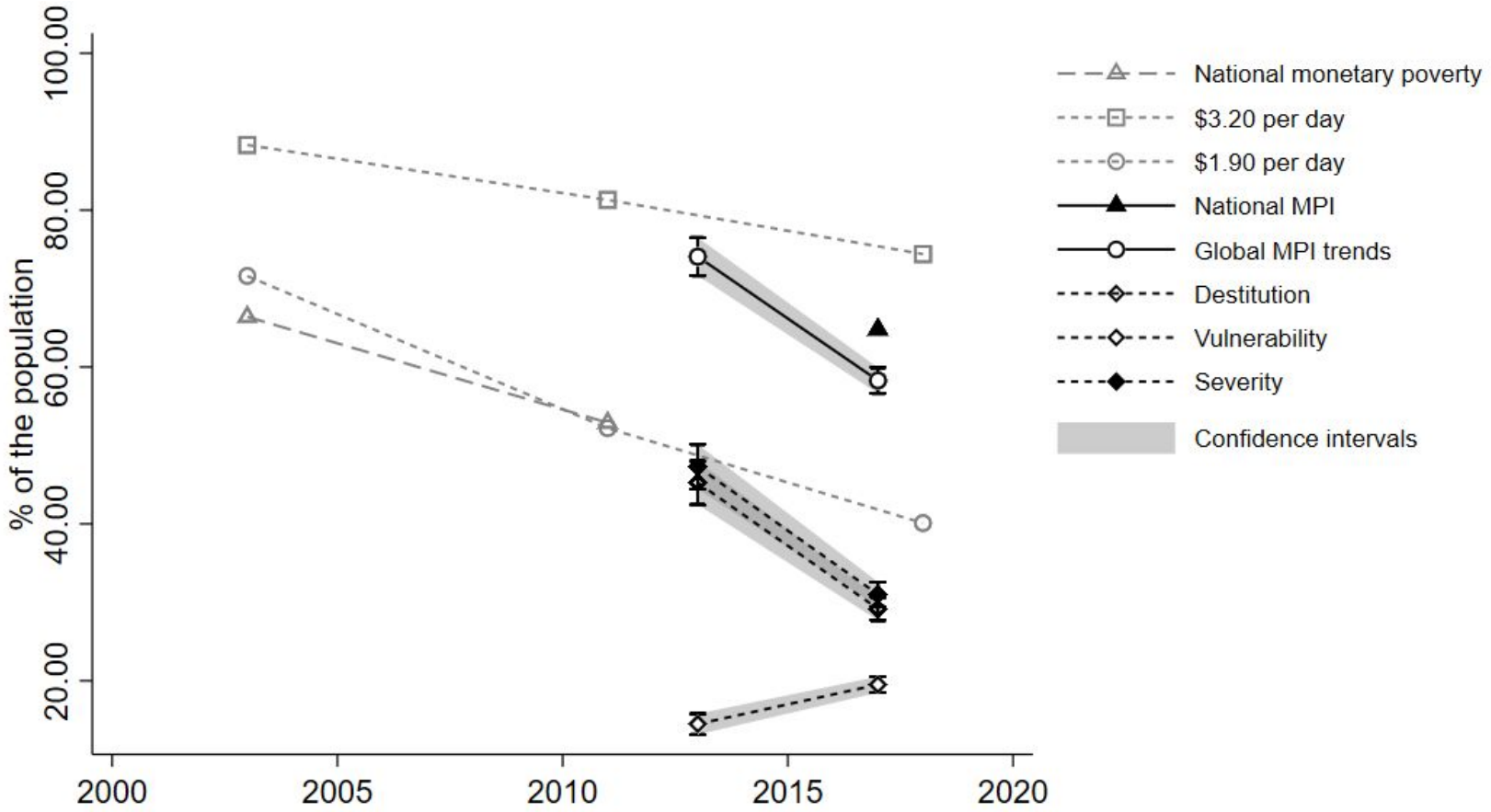


Figure:
Sierra Leone

- Fastest absolute reduction in MPI and severity
- Increase in vulnerability – fragile gains

Timor-Leste

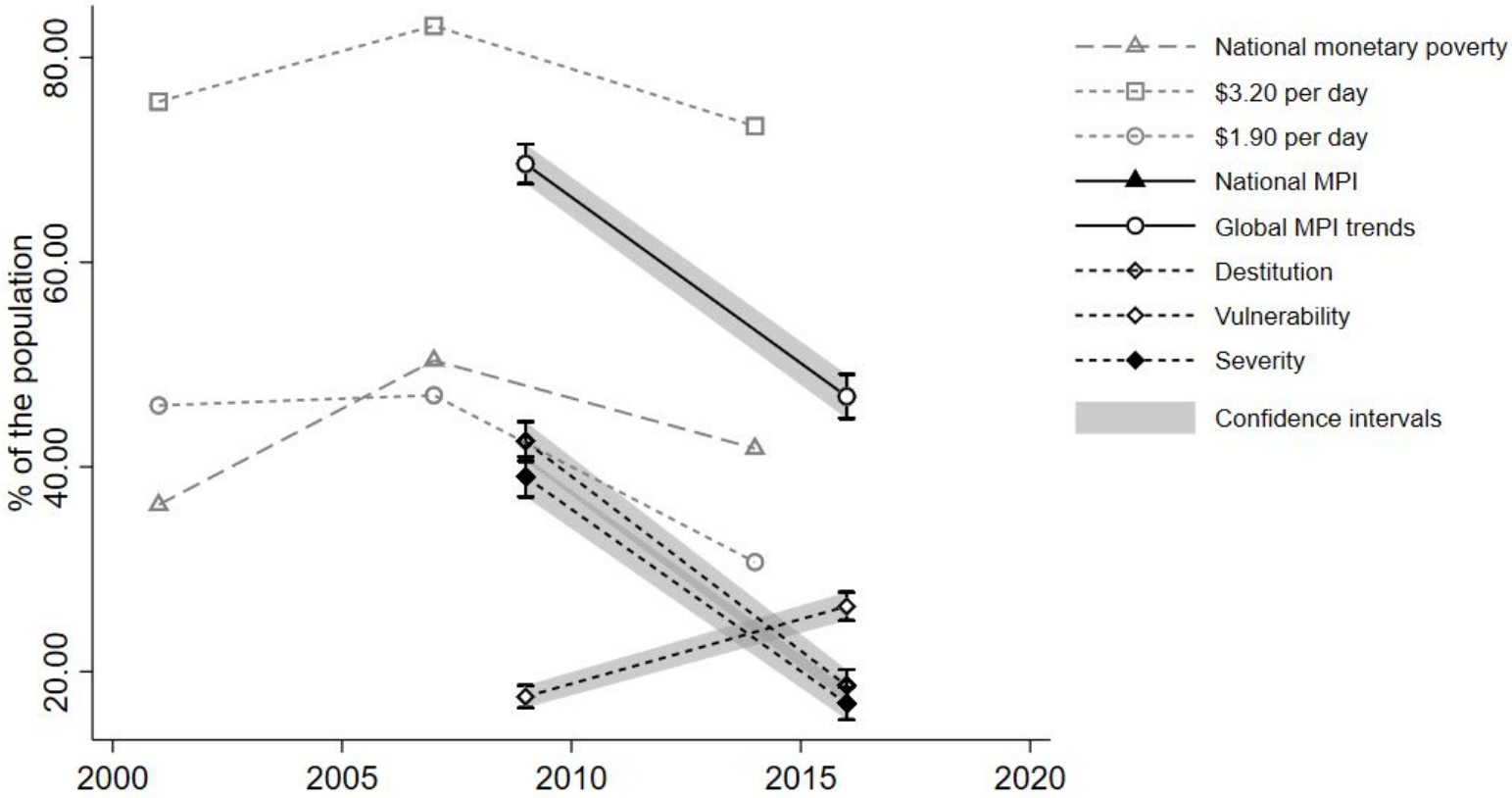
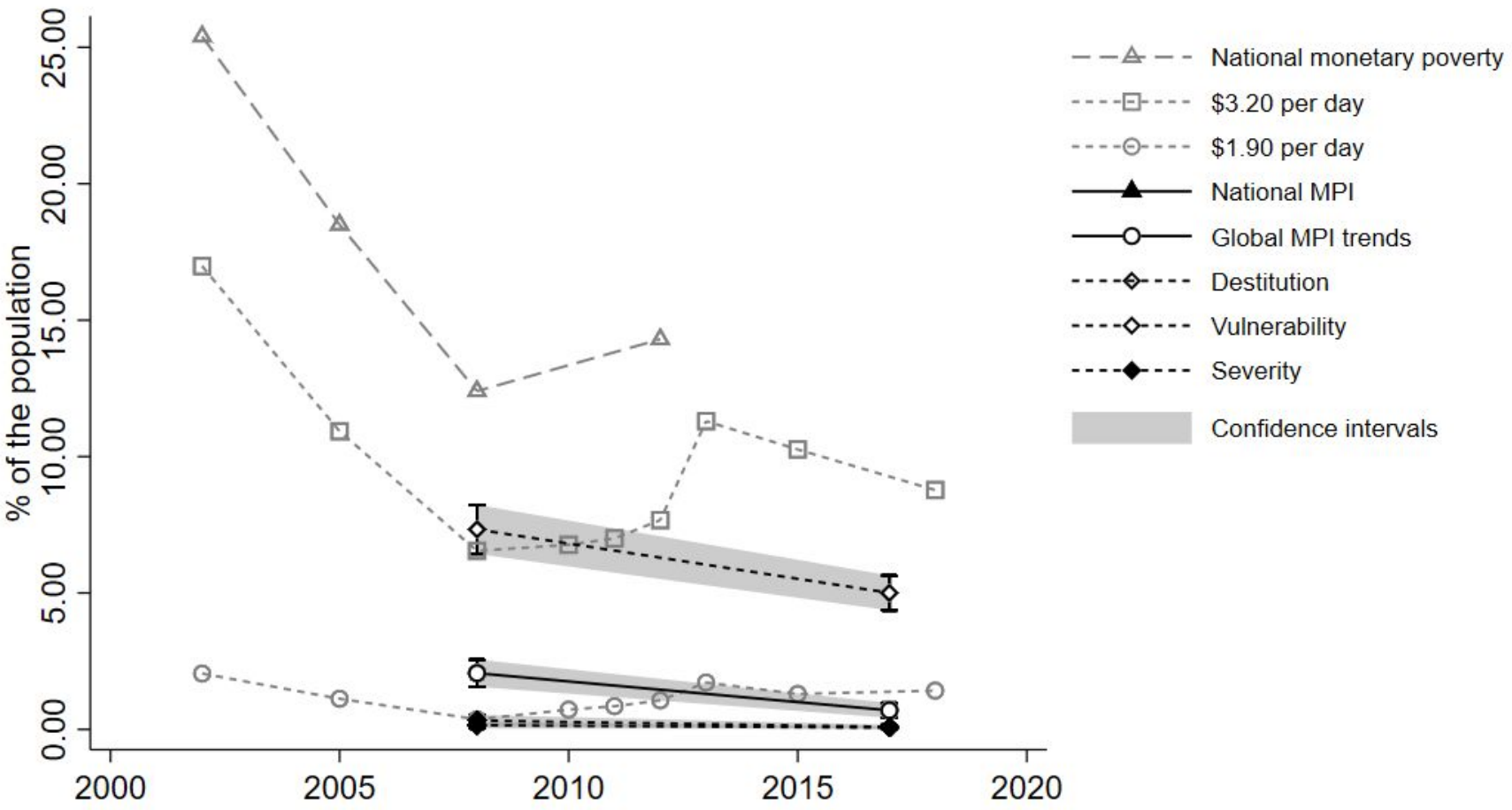


Figure:
Timor-Leste

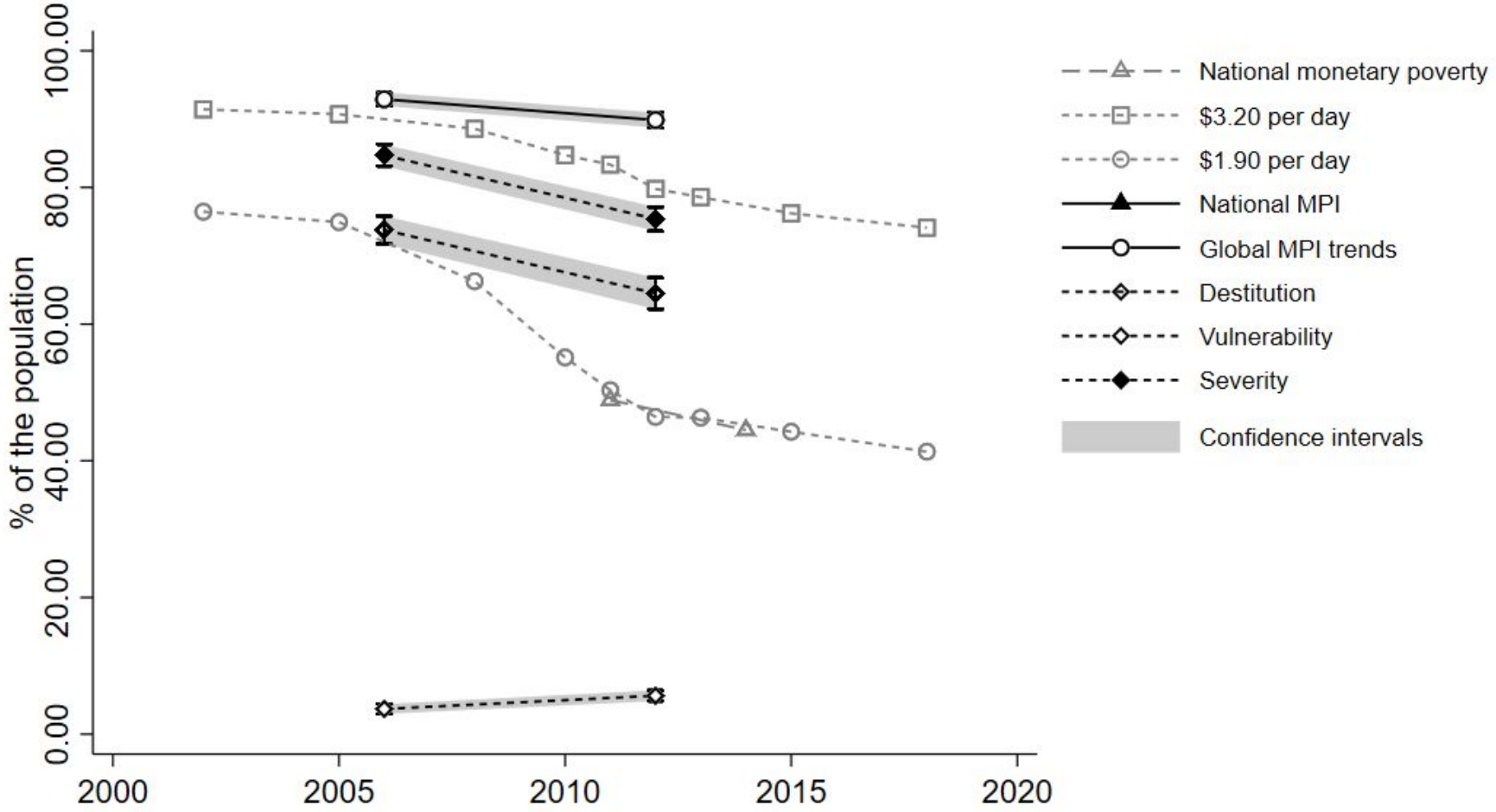
- One of the fastest absolute reduction in MPI
- Halved population in severe poverty

Diverging Trends – Albania (2008/09-2017/18)



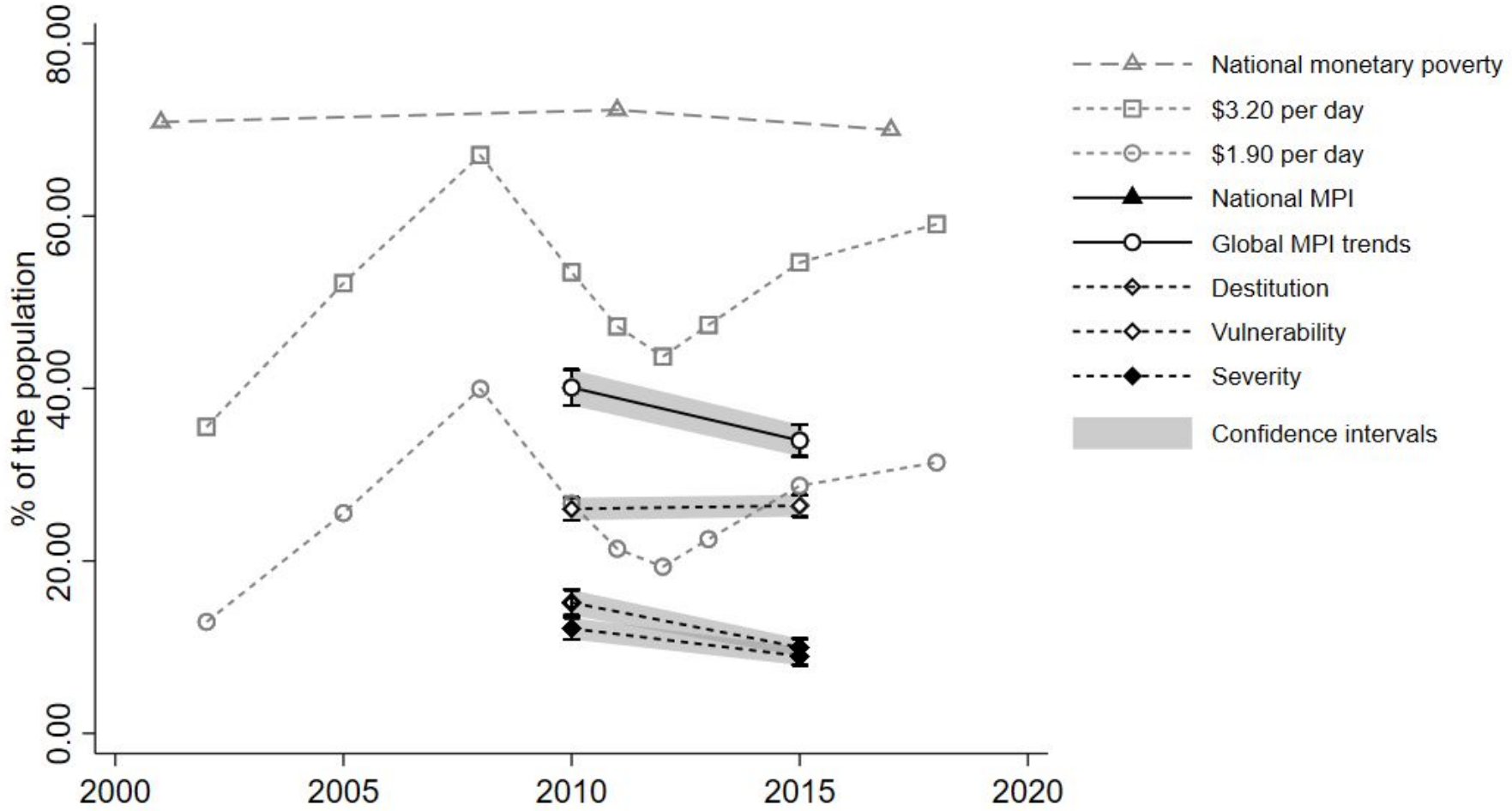
- Monetary poverty measures show **increase**
- MPI measures show **decrease**

Diverging Trends – Niger (2006-2012)



- **Steep drop** in $1.90 headcount
- MPI shows more **modest reduction**

Diverging Trends – Zimbabwe (2010/11-2015)



- MPI and national poverty measures show **decrease**
- $1.90 and $3.20/day show **increase**

Conclusion

Important to analyse the **where and how poverty has changed**

- **Absolute and relative reductions differ**
- **Population growth** impacted poverty reduction, especially in Sub-Saharan Africa
- **MPI is not equally sensitive to changes** in headcount ratio and intensity
- Composition of poverty varies across countries

Conclusion

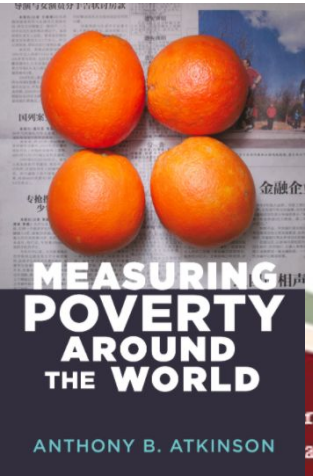
Significant achievements

- 67 countries reduced MPI
- 59 countries reduced destitution MPI
- Severity also reduced in 59 countries

Monetary and multidimensional poverty trends may not coincide but must be analysed together for a **more complete picture of poverty trends**

Ch 10: On a lighter note…

Many years ago there was an advertising campaign for a well-known beer that claimed to refresh the parts that other beers could not reach. To a significant extent, <u>this is the role of nonmonetary indicators of poverty</u>. p214



rd Poverty &
an Development Initiative

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THANK YOU!

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