

# OPHI

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UNIVERSITY OF  
OXFORD

## Why Multidimensional (MD) Poverty Measures?

Sabina Alkire, Oxford 2014

Tabita, Kenya



Rabiya, India



Stéphanie, Madagascar



Agathe, Madagascar



Dalma, Kenya



Ann-Sophie, Kenya

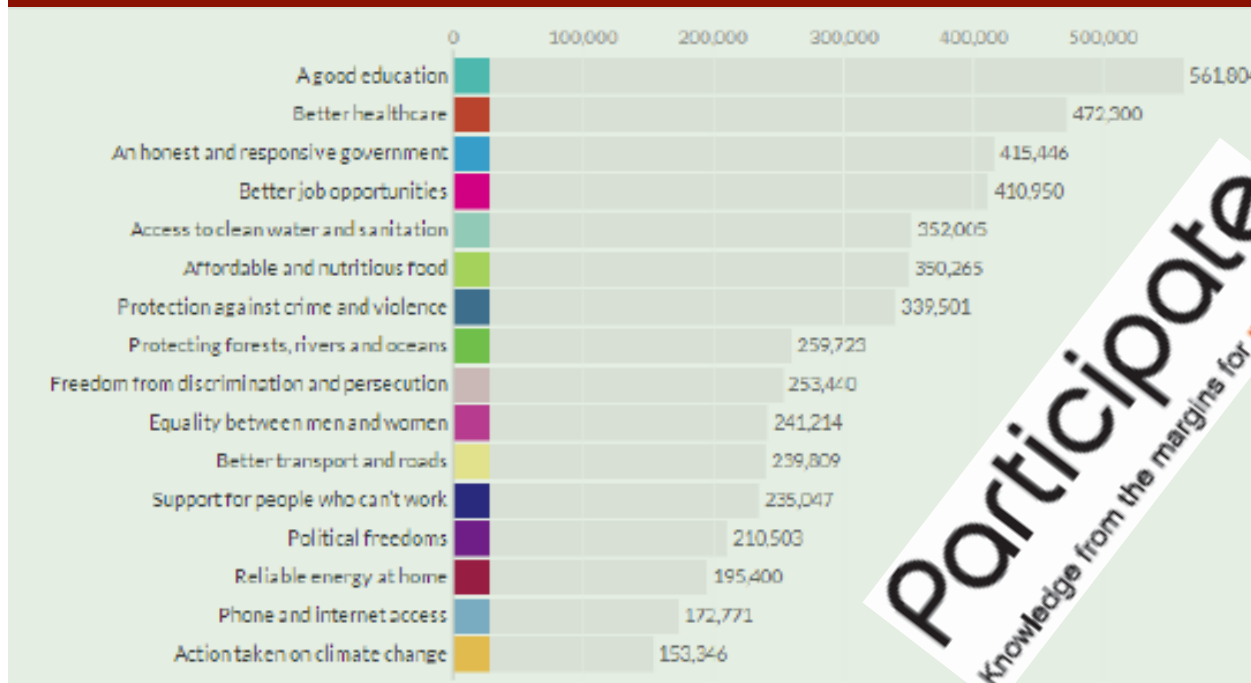


Valérie, Madagascar



“Human lives are battered and diminished in all kinds of different ways.”  
*Amartya Sen*

UNDP's *Million Voices*: “The clear message is: Eradicating poverty and hunger, achieving gender equality, and improving health and education services remain foremost in people's priorities.”  
*Helen Clark, 23 Sept 2013*



# What is Poverty? Who is poor?

- “you can’t think of the future because you can only see how to survive in the present” (Urban youth, Ecuador)
- “When food becomes scarce, we only eat once a day to allow our children and husbands to eat three times a day” (Philippino Women)
- “Those without money have to wait” (Bangladesh)
- “Our parents did not go to school and so we are poor today. Education can change this.” (Youth, Nigeria)
- “I am afraid that they might kill my son for something as irrelevant as a snack.” (Brazilian woman).

Voices of the Poor: *Can Anyone Hear Us?*

# Why MD Poverty?

This session will briefly introduce some of the reasons that multidimensional measures of poverty (and well-being) are on the upswing.

In addition to **moral or ethical** motivations, they can be divided into three types:

1. *Technical* – they can be constructed
2. *Empirical* – they add information and value
3. *Policy* – they meet policy demands



# Why the new emphasis on measurement?

*We can:*

*Technical*

- 1) Data availability
- 2) Computational and Methodological developments

*We need to:*

*Empirical*

- 3) Monetary and Non-Monetary Household Deprivation Levels
- 4) Income poverty trends
- 5) Associations across non-monetary deprivations
- 6) Economic Growth and Non-income Deprivations

*We are willing to:*

*Policy*

- 7) National and international policy 'demand'
- 8) Political space for new metrics

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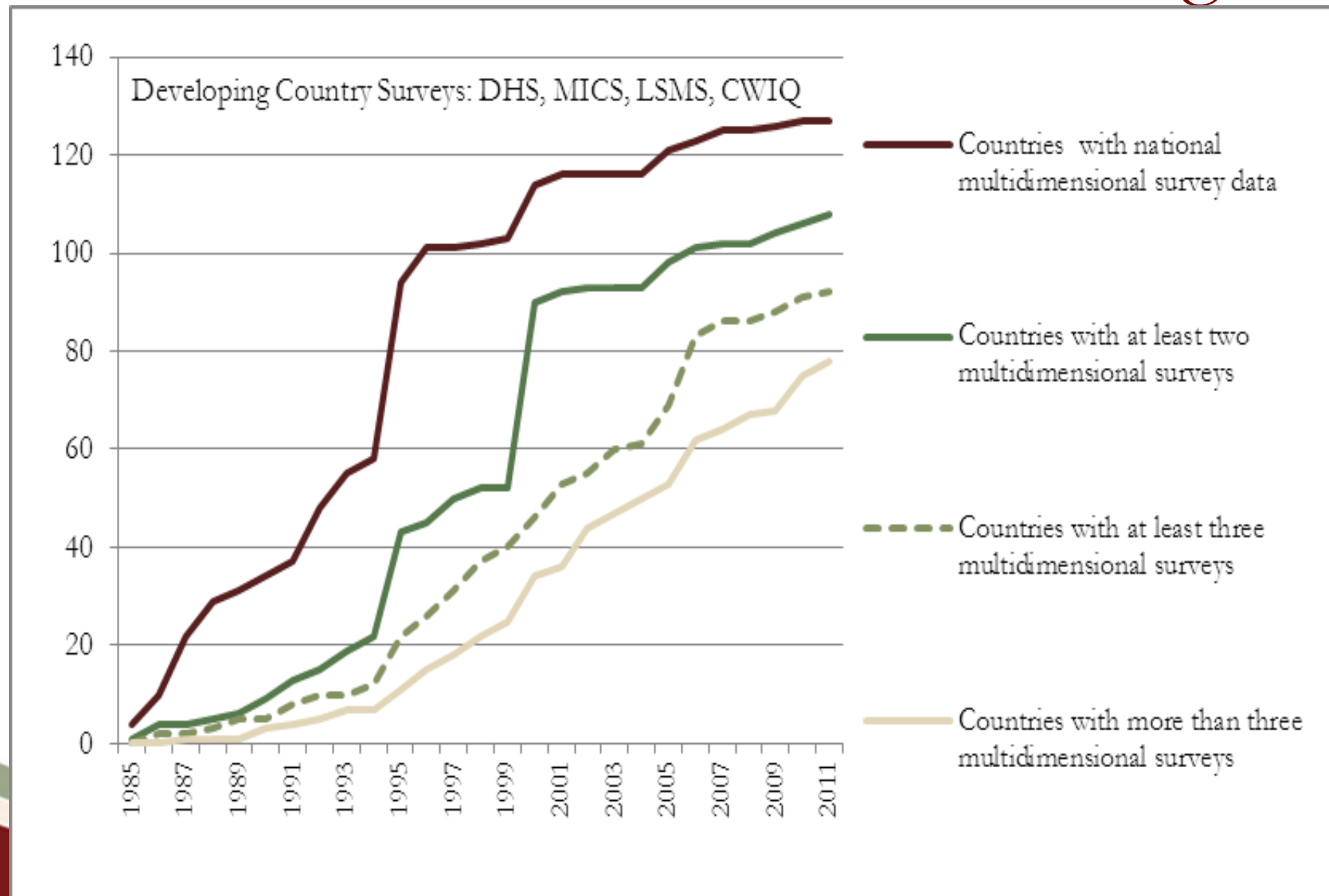
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# 1. Relevant Data are Increasing

- Since 1985, the multi-topic household survey data has increased in frequency and coverage
- Similarly significant increases have occurred with income and expenditure data, censuses
- Other data sources can sometimes be merged
- Technology now exists to process and analyse these data immediately

# 1. Relevant Data are Increasing





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## 2. Computational and methodological developments

Increases of data availability together with increased computational power have led to the generation of new indices

- HDI, IHDI, Canada Index of Well-being, etc.
- Doing Business Index,
- Good Governance,
- Global Peace Index & related,
- SIGI & other gender-related
- CDI Index
- Social Protection, Global Hunger,

## 2. Computational and methodological developments

The appealing axiomatic properties of new methodologies have created new possibilities as well – for poverty but also other indices

Over 50 published articles cite the AF methodology at present.

Applications of AF go beyond poverty and also include energy, resilience, time use, well-being, empowerment, and so on.

The first example: the GNH index of Bhutan is based on  $(1-M0)$ .





**Bhutan**

**Gross  
National  
Happiness**

**Nine  
Domains,  
33  
indicators**

**2008, 10, 12**

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## **3) Monetary and Non-Monetary Household Deprivation Levels**

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### 3. Income poverty is not a proxy for key non-income deprivations

Katzman (1989) found that 13% of households in Montevideo, Uruguay, were income poor but did not experience unsatisfied basic needs, whereas 7.5% were in the opposite case.

Ruggeri Laderchi (1997) concluded on the basis of Chilean data that ‘income in itself is not...conveying all of the information of interest if the aim is to provide a comprehensive picture of poverty’.

See also Klasen 2008

### 3. Income poverty is not a proxy for key non-income deprivations

**Table 5. Lack of overlaps between monetary and CA poverty**

Capability poverty measured as		Education		Nutrition/health	
		Children	Adults	Children	Adults
% of CA poor not in monetary poverty:	India	43	60	53	63
	Peru	32	37	21	55
% of monetary poor not CA poor:	India	65	38	53	91
	Peru	93	73	66	94

Source: Franco et al. (2002).

Ruggieri Laderchi Saith and Stewart 2003. 'Does It Matter That We Don't Agree on the Definition of Poverty? A Comparison of Four Approaches', *Oxford Development Studies* 31(3): 243-74



### 3. Income poverty does not closely proxy material deprivations in Europe

Table 6 Distribution across combined income poverty and deprivation persistence variable by country

	Neither persistently income poor nor deprived	Persistently income poor only	Persistently deprived only	Persistently income poor and deprived
Denmark	82.8	6.9	8.9	1.4
The Netherlands	78.8	7.1	7.3	6.8
Belgium	73.0	9.3	8.8	8.9
France	70.8	11.6	8.5	9.0
Ireland	64.8	11.4	9.7	14.0
Italy	68.8	9.2	11.3	10.7
Greece	68.8	11.2	9.9	10.1
Spain	72.7	9.2	8.7	9.4
Portugal	64.5	12.0	11.3	12.2
All	70.7	10.4	9.2	9.7

Source: Whelan Layte Maitre 2004 Understanding the Mismatch between Income Poverty & Deprivation

See Nolan and Whelan 2011 *Poverty and Deprivation in Europe* for a review of empirical studies across Europe.

### 3. Income poverty does not closely proxy material deprivations in Europe

In Europe, while 20% of people are persistently income poor, and 20% are persistently materially deprived, ONLY 10% of people are BOTH persistently income poor and materially deprived.

This observation motivated the move in Europe to a multidimensional poverty measure EU 2020. Income doesn't tell the full story – even of material deprivation in industrial economies

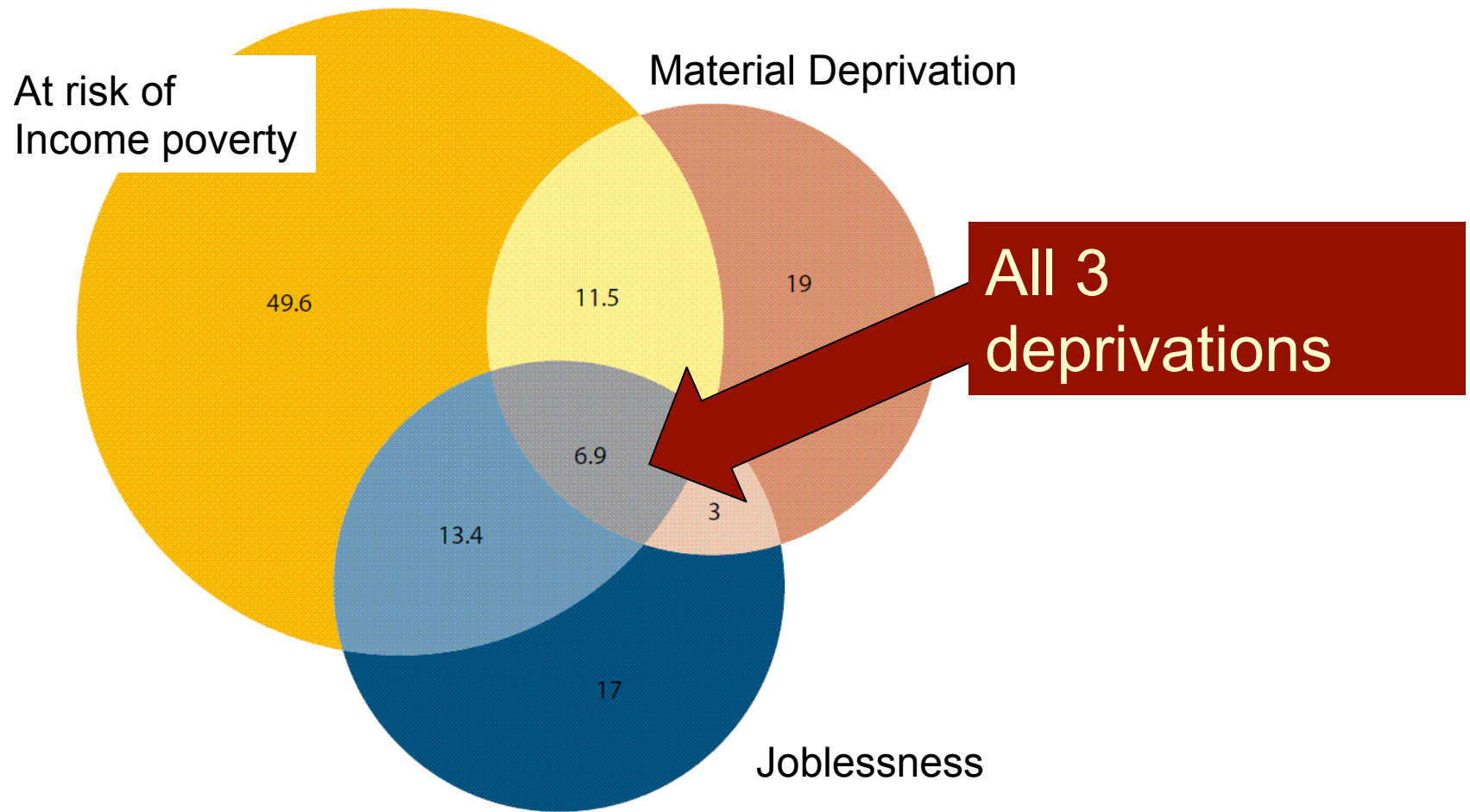
the poverty and deprivation persistence variable by country

	Persistently income poor only	Persistently deprived only	Persistently income poor and deprived
	6.9	8.9	1.4
	7.1	7.3	6.8
	9.3	8.8	8.9
	11.6	8.5	9.0
	11.4	9.7	14.0
	9.2	11.3	10.7
	11.2	9.9	10.1
	9.2	8.7	9.4
	12.0	11.3	12.2
	10.4	9.2	9.7

Source: Whelan Layte Maitre 2004 Understanding the Mismatch between Income Poverty & Deprivation

See also: Nolan and Whelan 2011

# Europe 2020: Multidimensional Poverty



Atkinson, A. B., E. Marlier, F. Monatigne, and A. Reinstadler (2010) 'Income poverty and income inequality', in *Income and Living Conditions in Europe*, Atkinson and Marlier (eds), Eurostat.

### 3. Monetary poverty: important yet incomplete

#### Other issues:

- does not show *how* people are poor
- non-sampling measurement error (accuracy)
- time and cost of survey (data collection)
- comparability (rural-urban, international)

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## 4. xxx

François Bourguignon, Agnès Bénassy-Quéré, Stefan Dercon, Antonio Estache, Jan Willem Gunning, Ravi Kanbur, Stephan Klasen, Simon Maxwell, Jean-Philippe Platteau, Amedeo Spadaro (2010) 'Millennium Development Goals: An Assessment', in R. Kanbur and M. Spencer (eds.), *Equity and Growth in a Globalizing World*. World Bank, ch. 2.

A 2010 chapter by the above authors that reviewed trends in different MDGs 1990-2006 found that the trends of \$1/day poverty did not match trends in other MDGs:



Figure 2.3 Heterogeneity across MDGs

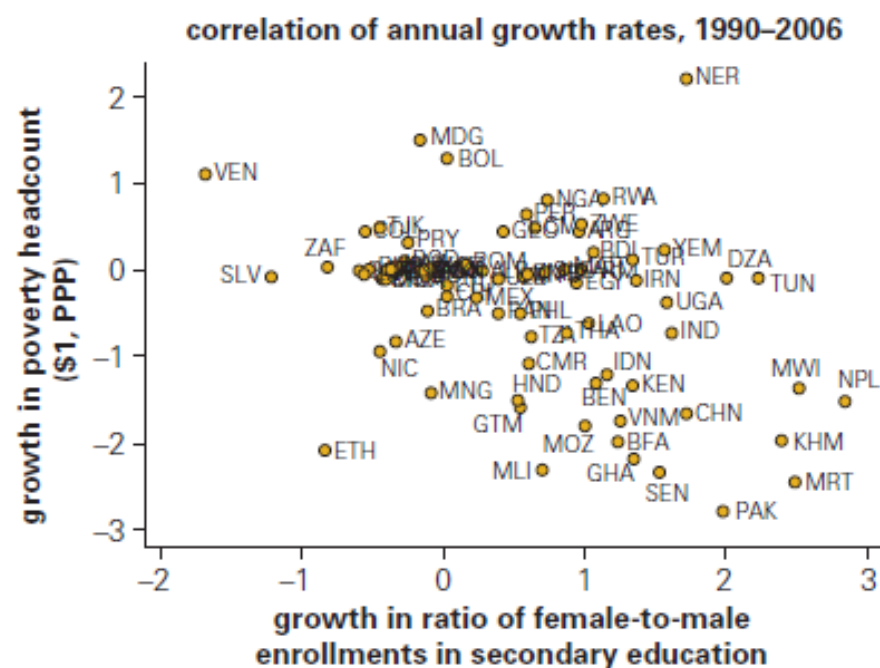
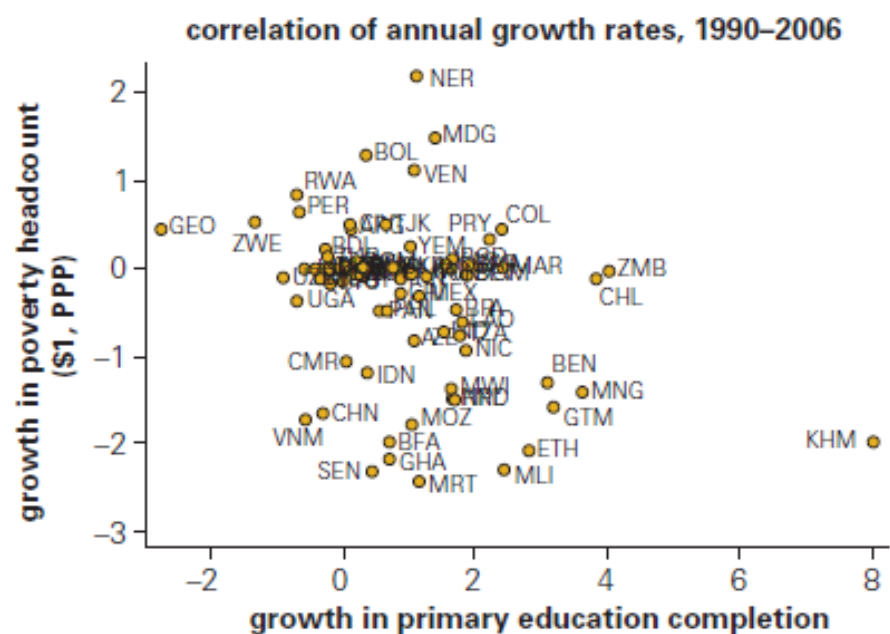
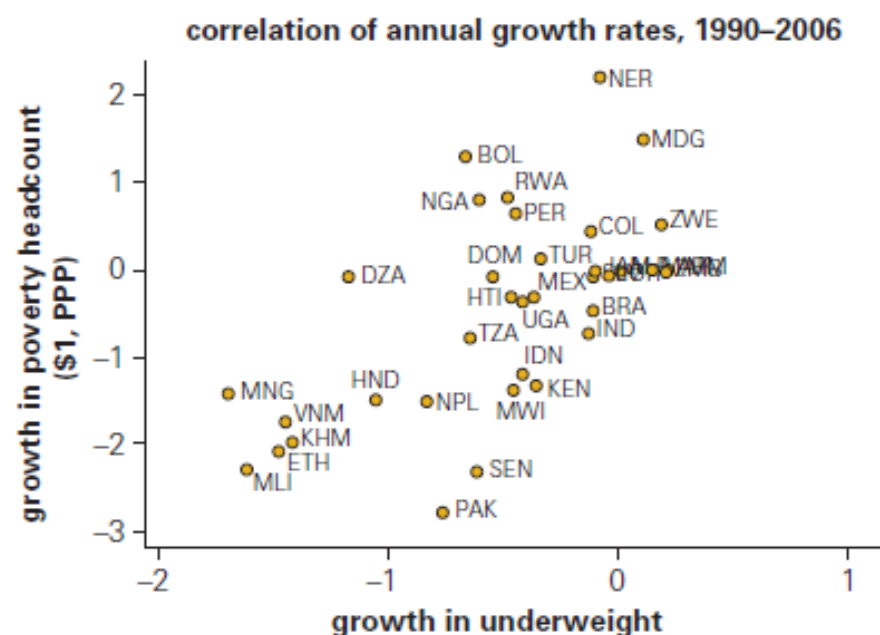
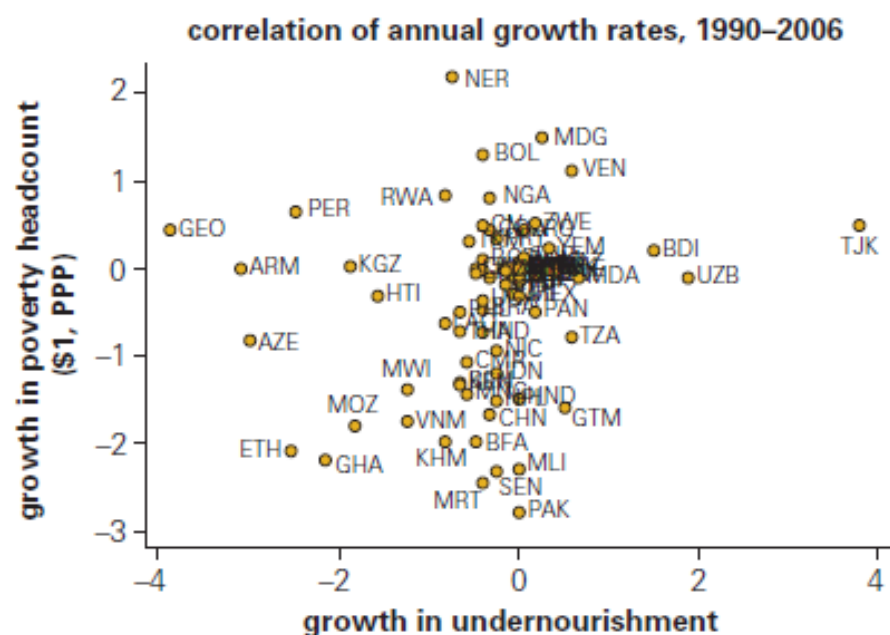
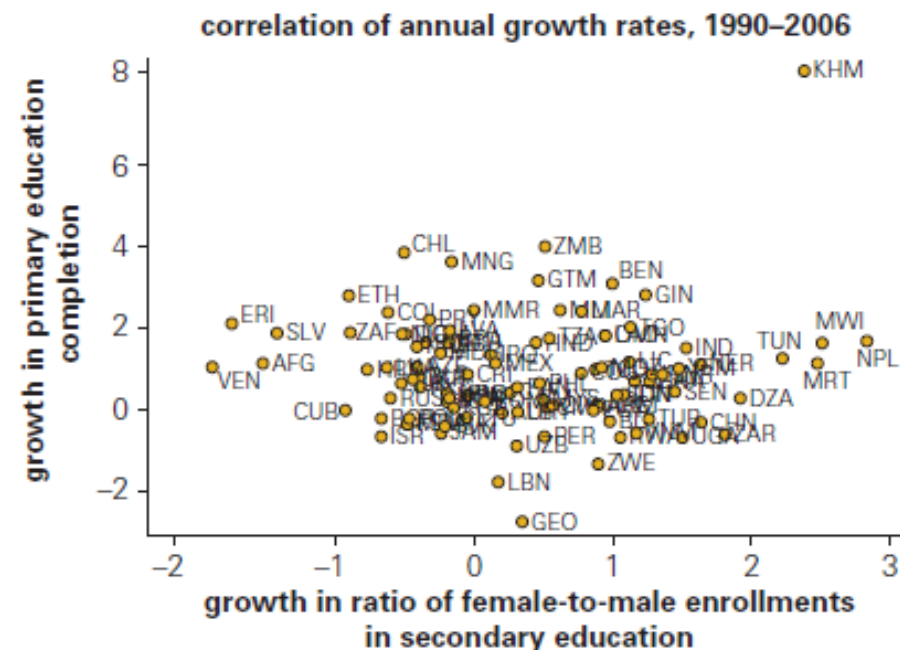
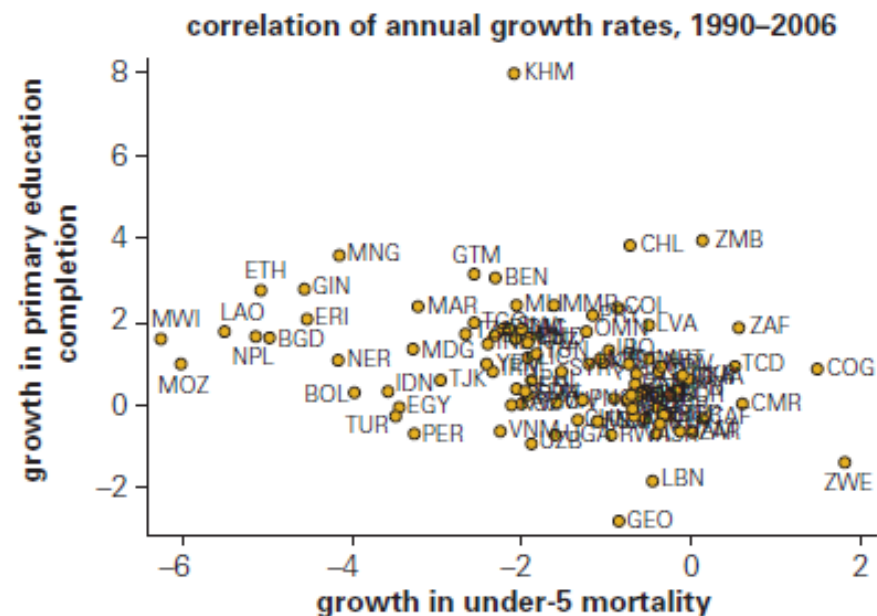
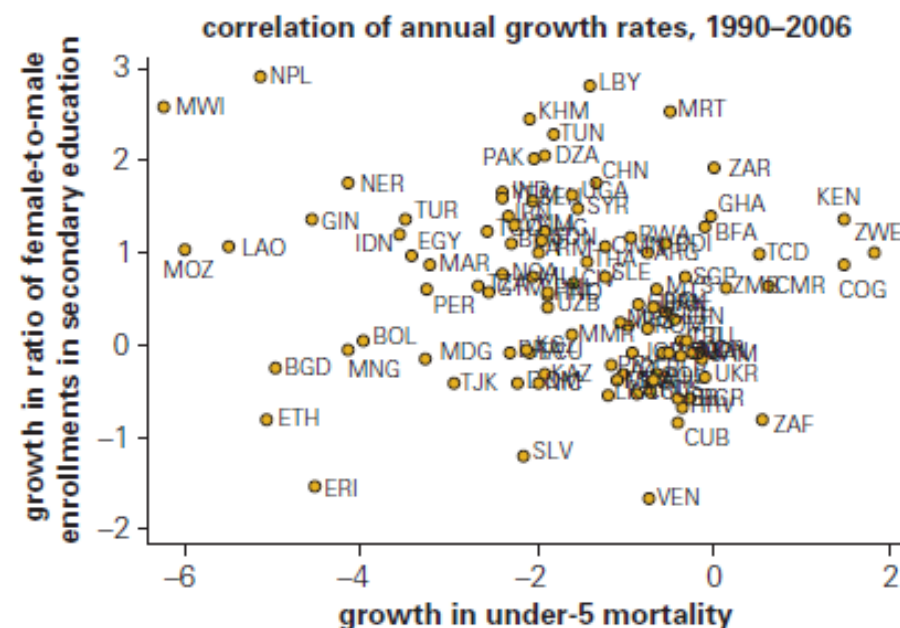
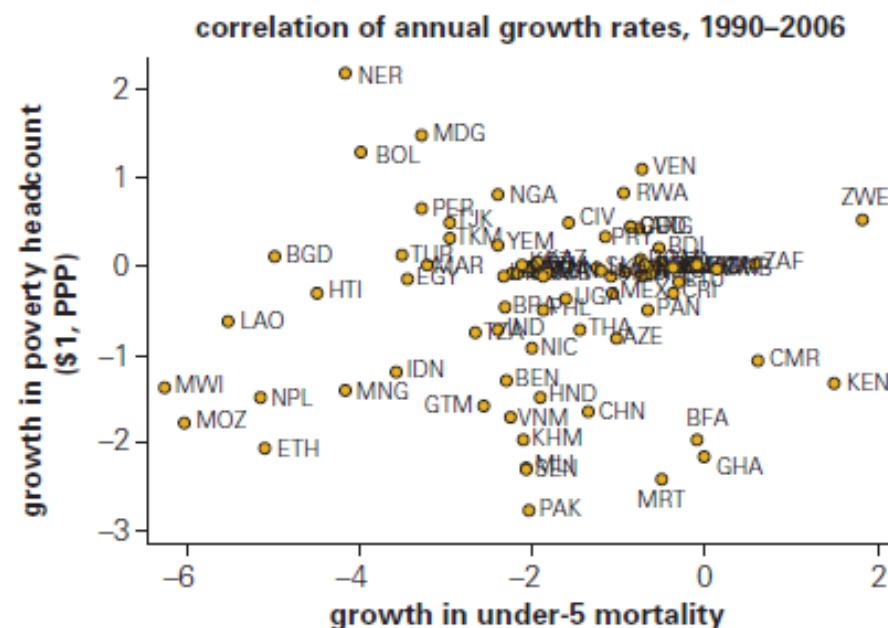




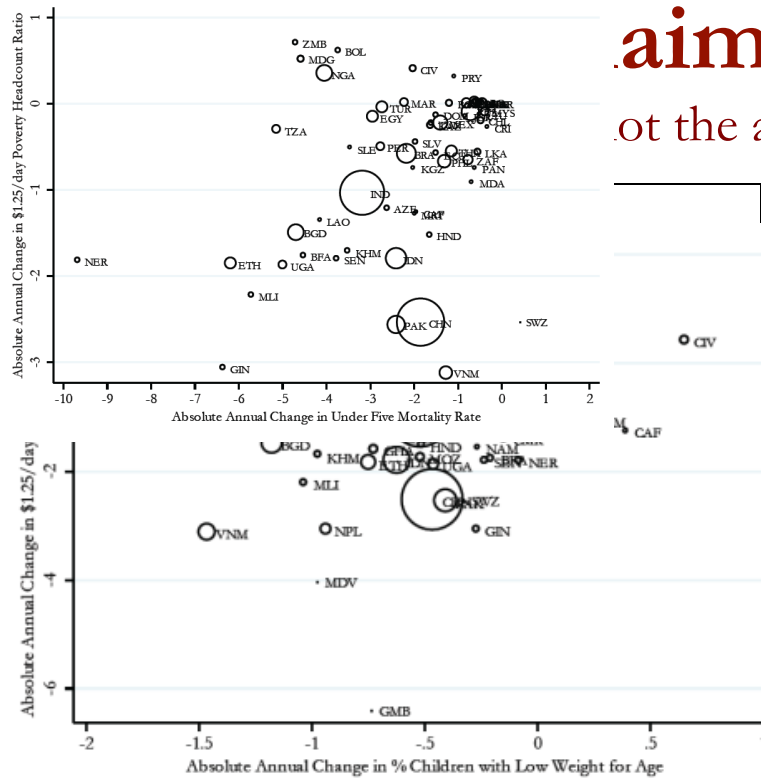
Figure 2.3 (continued)



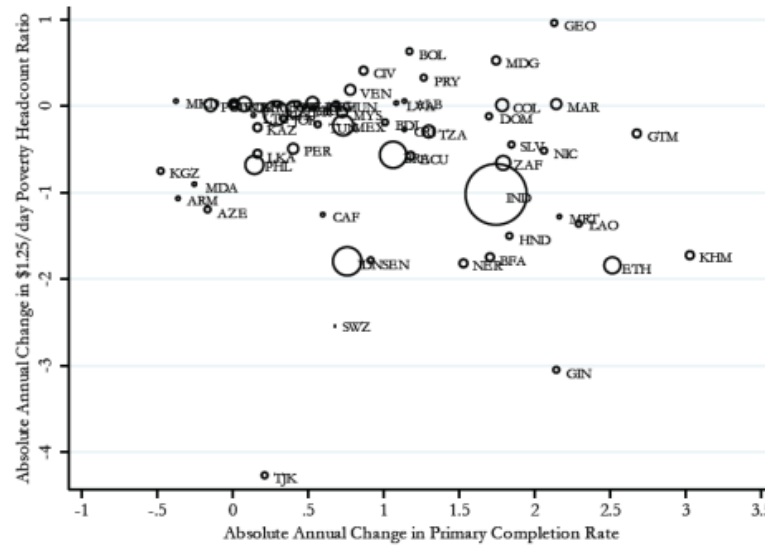
Source: Survey means from POVCAL.

# aims are strong...and debated

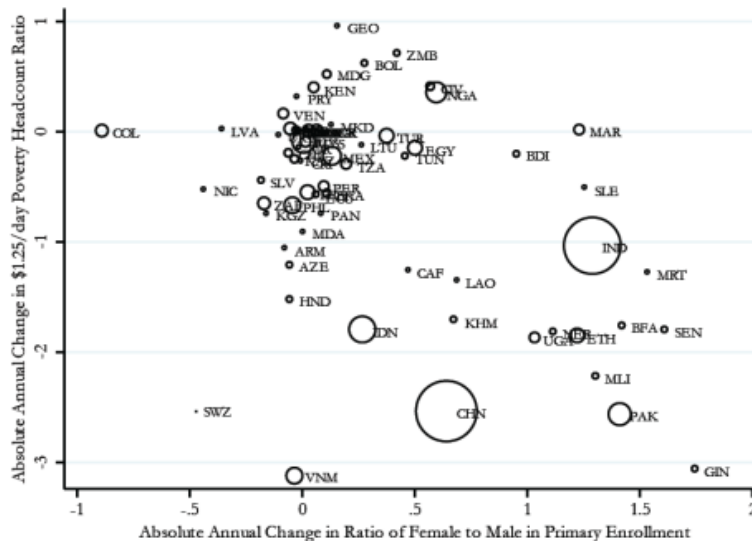
not the absolute trends of \$1.25 vs four MDGs 1990-2012:



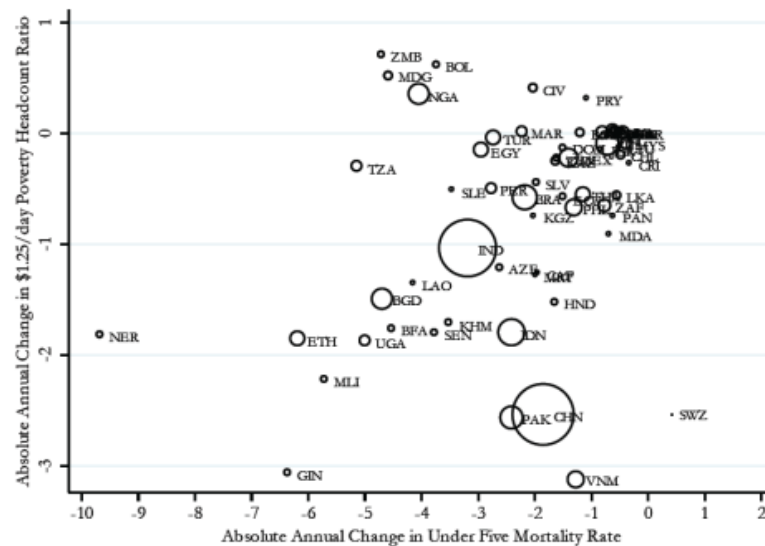
**Panel II – Primary Completion Rate**



**Panel III – Gender Parity**



**Panel IV – Under Five Mortality Rate**



Size of bubble depicts 2000 population

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## 5. Associations across indicators

Can we just choose a non-income indicator as a proxy of the main social deprivations? (*empirical question*)

## 5. Non-income deprivations

India NFHS data 2005-6, MPI set

% of people living in a hh where a child has died: **25.7%**

% of people living in a hh where no one has 5 yrs schooling: **18.2%**

**Are they mostly the same people?**

**Less than one-third of the time.**

Anyone has 5 yrs of schooling	Child mortality		Total
	Non-depr	Deprived	
Non-deprived	61.8	12.5	74.3
Deprived	20.0	5.8	<b>25.7</b>
Total:	81.8	18.2	100

## 5. Non-income deprivations

India NFHS data 2005-6, MPI set

*Another example:*                      **mortality and school attendance**

Percentage of people living in a hh where a child has died: **25.7%**

Percentage of people living in a hh where a child is not attending school: **21.2%**

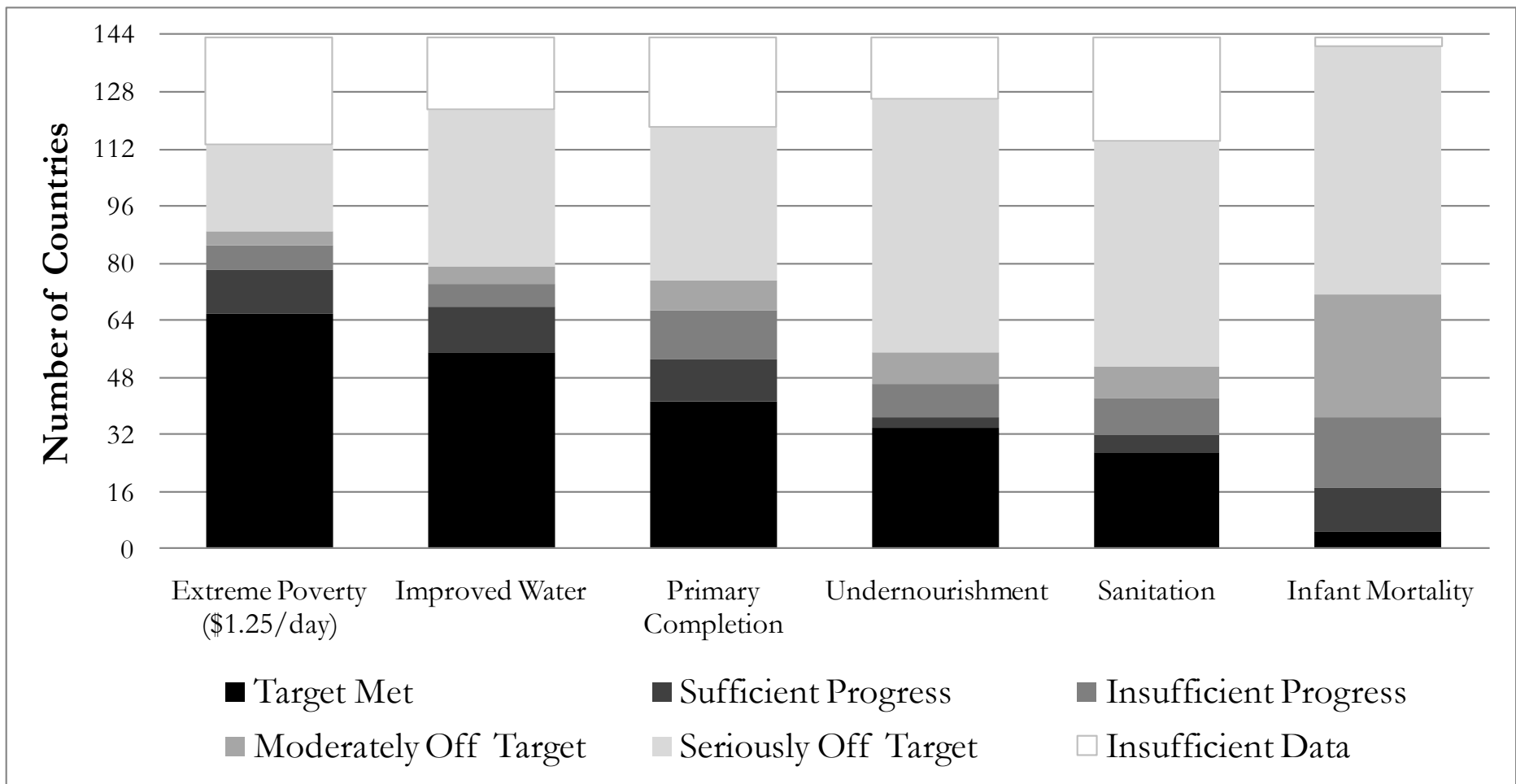
**Are they mostly the same people?**

**Less than 40% of the time.**

Child mortality	School Attendance		Total
	Non-depr	Deprived	
Non-depr	61.2	13.0	74.2
Deprived	17.6	8.1	25.7
Total	78.8	21.1	100

## 5. Non-income deprivations

Fig 1.2 – Trends in MDGs vary by indicator

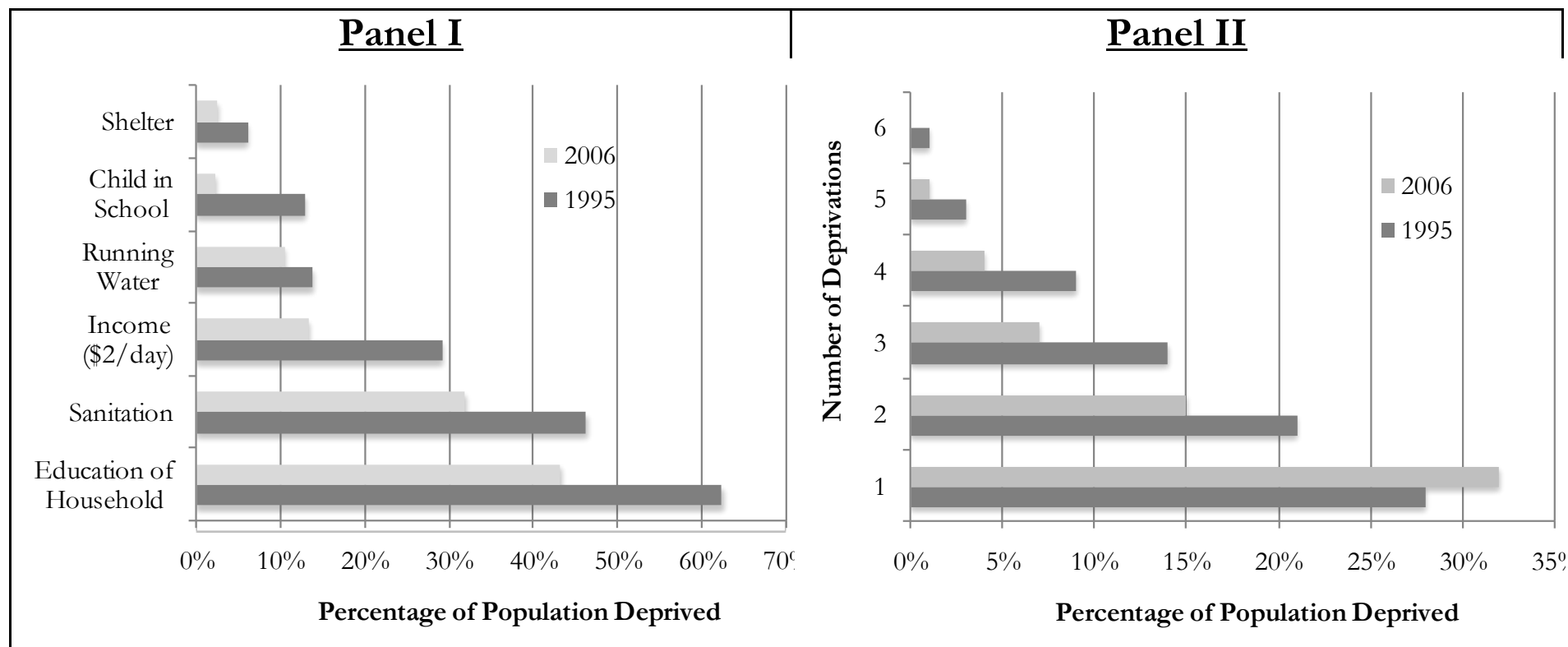


Source: World Bank Data and Global Monitoring Report Progress Status, 2013



## 5. Non-income deprivations

Fig 1.3 – The Importance of Understanding Joint Distribution of Deprivations in Brazil



Source: Battiston et al. (2013)

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## 6. Growth? Claims are strong

### 2008 Growth Commission

“Growth is not an end in itself. But it makes it possible to achieve other important objectives of individuals and societies. It can spare people *en masse* from poverty and drudgery. Nothing else ever has.”

## 6. Growth Commission

The Growth Commission 2008 generated a nuanced set of observations on sustained economic growth based on case studies of countries that had 7% growth for over 25 years.

Yet alongside great gains, after 25 years of growth:

- In **Indonesia**, 28% of children under five were still underweight and 42% were stunted
- In **Botswana**, 30% of the population were malnourished, and the HDI rank was 70 places below the GDP rank.
- In **Oman**, women earned less than 20% of male earnings.

Yet some other countries with lower growth had made greater progress in social indicators.

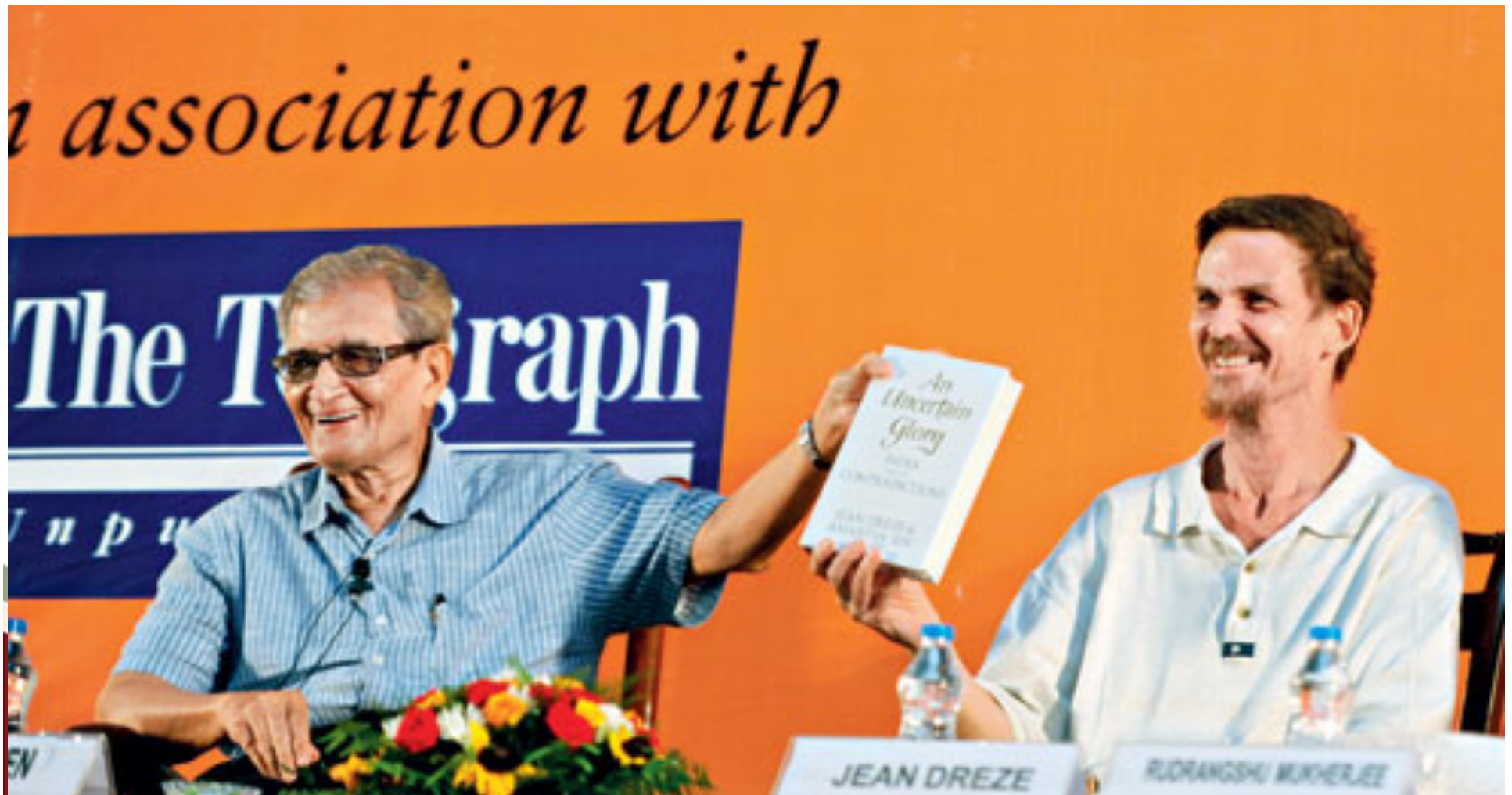
## 6. Growth? Claims are strong...and debated

François Bourguignon, Agnès Bénassy-Quéré, Stefan Dercon, Antonio Estache, Jan Willem Gunning, Ravi Kanbur, Stephan Klasen, Simon Maxwell, Jean-Philippe Platteau, Amedeo Spadaro. (2010) 'Millennium Development Goals: An Assessment', in R. Kanbur and M. Spencer (eds.), *Equity and Growth in a Globalizing World*. World Bank, ch. 2

**'The correlation** between growth in GDP per capita and improvements in non-income MDGs **is practically zero**, . . . [thereby confirming] the lack of a relationship between those indicators and poverty reduction. Because it would be hard to believe that information on nonincome MDGs is so badly affected by measurement error that it is pure noise, **this** lack of a relationship **reflects some relative independence among policy instruments governing progress in the various MDGs**. Furthermore, it highlights substantive differences in country policies and circumstances that may affect the relationship between these policies. **This interesting finding suggests that economic growth is not sufficient per se to generate progress in nonincome MDGs. Sectoral policies and other factors or circumstances presumably matter as much as growth.**

## 6. Dreze and Sen: An Uncertain Glory

**India:** strong economic growth since 1980s.





## 6. Economic Growth and Non-income Deprivations

Table 1.1 Comparison of India's Performance with Bangladesh and Nepal

	Year	India	Bangladesh	Nepal
GDP per capita (PPP, constant 2005 international \$)	1990	1,193	741	716
	2011	3,203	1,569	1,106
	<i>Growth (p.a.)</i>	<i>0.7%</i>	<i>0.5%</i>	<i>0.3%</i>
Under-5 Mortality Rate	1990	114	139	135
	2011	61	46	48
	<i>Change</i>	<i>-53</i>	<i>-93</i>	<i>-87</i>
Maternal Mortality Ratio	1990	600	800	770
	2010	200	240	170
	<i>Change</i>	<i>-400</i>	<i>-560</i>	<i>-600</i>
Infant Immunization (DPT) (%)	1990	59	64	44
	2011	72	96	92
	<i>Change</i>	<i>13</i>	<i>32</i>	<i>48</i>
Female Literacy Rate, Age 15-24 Years (%)	1990	49	38	33
	2010	74	78	78
	<i>Change</i>	<i>25</i>	<i>40</i>	<i>45</i>

Source: Drèze and Sen (2013) and World Bank Data Online accessed at <http://data.worldbank.org/indicator>



## 6. Income & AF MPIs

But if we put non-income deprivations all together in an MPI (that reflects joint distribution of deprivations), perhaps they follow monetary poverty levels or trends. Do they? (*empirical question*)

## 6. Income & non-AF measures:

- Klasen 2000: Poverty & deprivation in South Africa

**TABLE 10**  
**OVERLAP AND DIFFERENCES BETWEEN POOR AND DEPRIVED POPULATIONS**

	Both	Poor, not deprived	Deprived, not poor	Neither
Poor/Deprived, %	44.2	8.7	8.7	38.4
Poor/Deprived, Numbers (m.)	16.8	3.3	3.3	14.6
Poorest/Most Deprived, %	20.3	8.6	8.8	62.4
Poorest/Most Deprived, Numbers (m.)	7.7	3.2	3.3	23.7

Convergence and Divergence of Incidence of Poorest/Most Deprived by Population Groups (figures in parentheses sum to 100% in each column category such as race, the other figures sum to 100% in each row)

## 6. Income & AF MPIs

### Cross Tabs of Multidimensional and Monetary Poverty with matching headcounts.

Recall: MPI indicators are differently defined, and their definition will affect cross-tabs.

Income would accurately identify multidimensionally poor people 20% to 65% of the time, depending on country, design, and level of MPI.

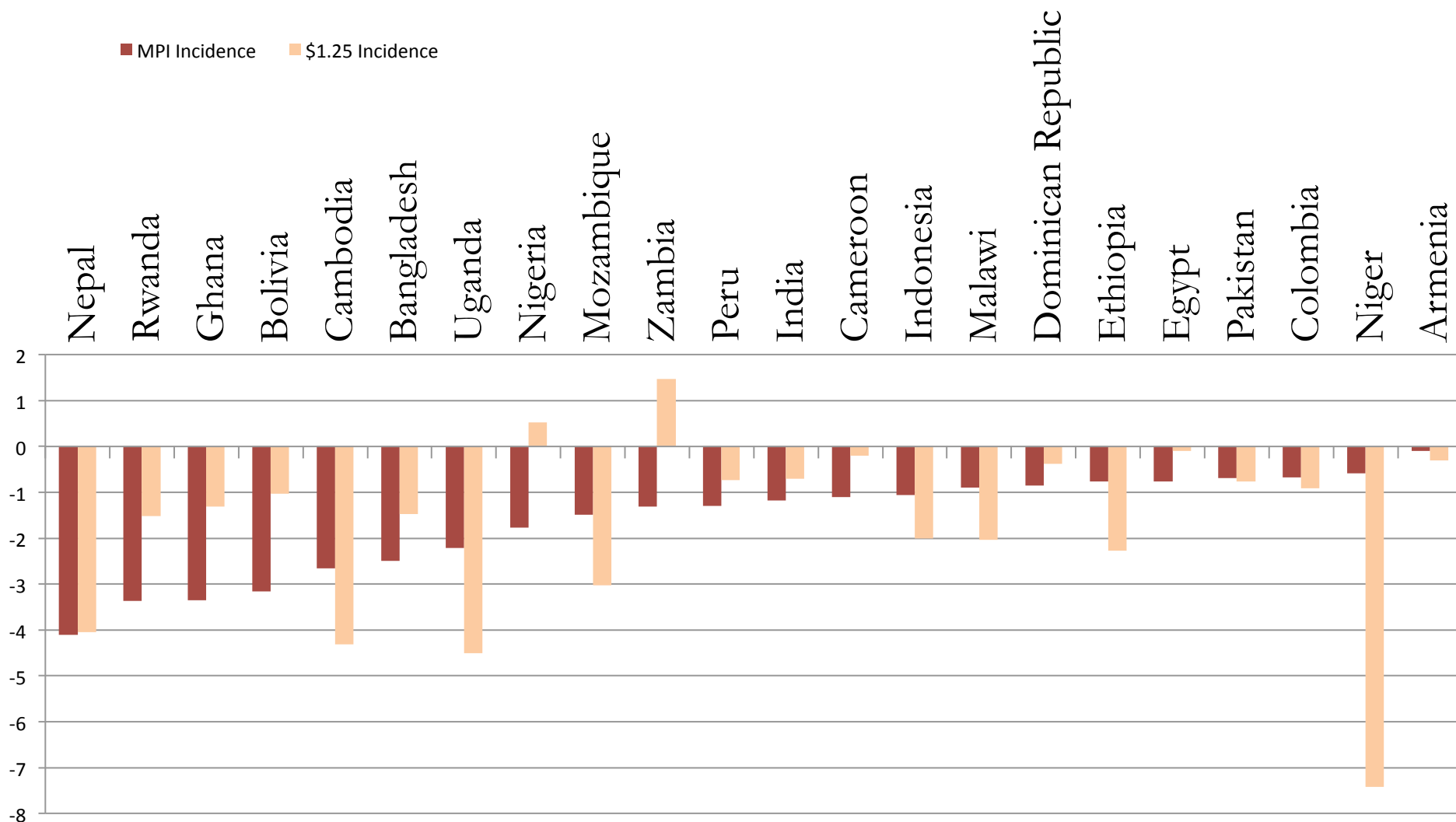
*Note: work in progress*

Venezuela	16.8%	3.4%	20.2%	8.4%	2.0%	23.8%
South Africa	11.0%	3.0%	27.3%	34.0%	19.0%	55.9%
India	43.4%	14.3%	32.9%			
Vietnam	16.7%	5.7%	34.1%			
Mexico	26.6%	10.4%	39.2%	74.9%	49.2%	65.7%
Indonesia	16.5%	7.1%	43.0%	31.8%	18.4%	57.9%
Nepal	24.9%	12.2%	49.1%	41.7%	27.0%	64.7%

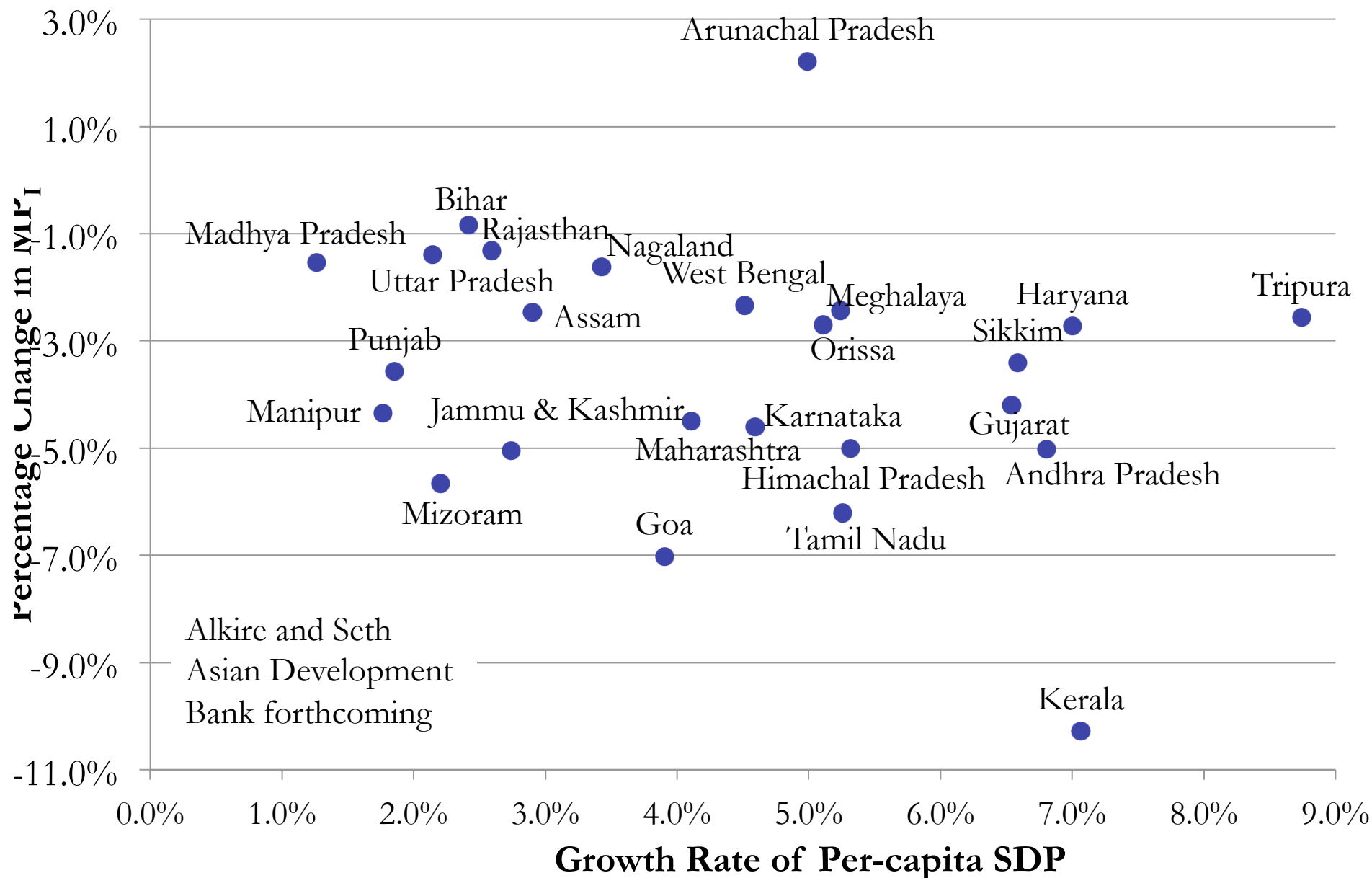
## 6. Income & AF MPIs

\$1.25/poverty and MPI do not trend together

(Alkire Roche Vaz 2014)



## 6. Income & AF MPIs: Does Growth reduce MPI



## 6. Conclusions:

Income does not strongly proxy MPI

Change in MPI vs Income vary

Growth and MPI reductions vary

MPI usually adds new information

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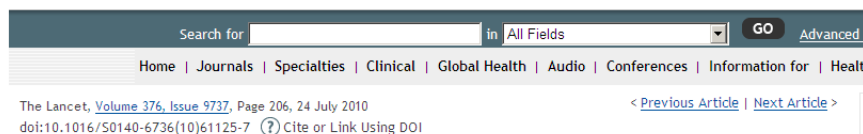
## 60+ countries - including:

- The New York Times (US)
- TIME Magazine (US)
- Xinhua (China)
- Al Jazeera (Qatar)
- The Hindu (India)
- Dawn (Pakistan)
- BBC (UK)
- The Daily Nation (Kenya)
- Agence France Presse (France)
- The Wall Street Journal (US)
- The Economist (UK)
- The Cape Times (South Africa)
- The Australian (Australia)
- The Guardian (UK)
- The Financial Times (UK)
- Radio Netherlands

## MPI Media Coverage



## THE LANCET



### Poverty index: who is the poorest of them all?

[The Lancet](#)

In a working paper by the [Oxford Poverty and Human Development Initiative](#), Oxford, UK, this month, Sabine Akire and Maria Emma Santos present a new method for measuring and comparing poverty in 104 developing countries: the multidimensional poverty index (MPI). The index takes into account not only income, but also nutrition, health, and access to basic services like electricity, clean water, and flooring, among others.



### 'More poor' in India than Africa

Eight Indian states account for more poor people than in the 26 poorest African countries combined, a new measure of global poverty has found.



**Top Stories**  
Major arrests promise  
UK 'not desperate' on  
Hassan killer 'goes mi  
Prison 'not linked' to c

- The Huffington Post (US)
- Foreign Policy (US)
- The Hindu (India)
- Christian Science Monitor (US)
- The Globe and Mail (Canada)
- The Times of India (India)

# The Global Multidimensional Poverty Peer Network (Global MPPN)

*launched 6 June 2013, Oxford*



Angola, Bhutan, Brazil, Chile, China, Colombia, ECLAC, Ecuador, El Salvador, Dominican Republic, Germany, India, Iraq, Malaysia, Mexico, Morocco, Mozambique, Nigeria, OECD, the Organization of Caribbean States, OPHI, Peru, Philippines, SADC, and Vietnam

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## 8. Interest in AF Poverty measure

1. **Birds-eye view** - can be unpacked
  - a. by region, ethnicity, rural/urban, etc.
  - b. by indicator, to show composition
  - c. by 'intensity' to show inequality among poor
2. **Adds Value:**
  - a. focuses on the multiply deprived
  - b. shows joint distribution of deprivation.
3. **Incentives** to reach the poorest of the poor
4. **Flexible:** you choose indicators/cutoffs/values
5. **Robust** to wide range of weights and cutoffs

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*Thanks!*