

# OPHI

OXFORD POVERTY & HUMAN DEVELOPMENT INITIATIVE  
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UNIVERSITY OF  
OXFORD

## Why Multidimensional Poverty Measures?

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Tabita, Kenya



Rabiya, India



Stéphanie, Madagascar



Agathe, Madagascar



Dalma, Kenya



Ann-Saphia, Kenya



Valérie, Madagascar



Most people are other people. Their thoughts are  
someone else's opinions, their lives a mimicry,  
their passions a quotation.

~Oscar Wilde, *De Profundis*, 1905

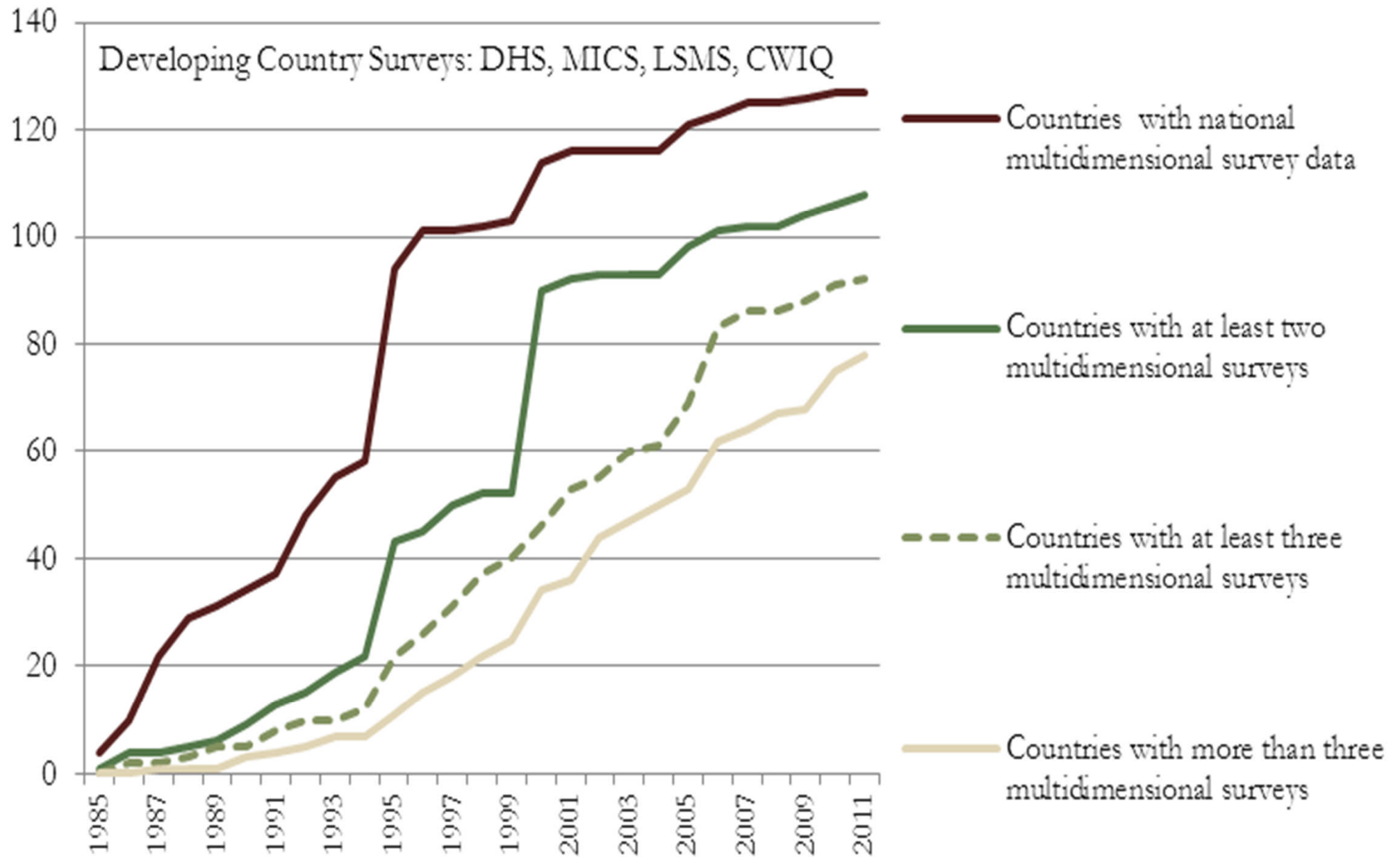
# Why the new emphasis on measurement?

- 1) More and better data becoming available
- 2) More Measures being developed
- 3) 2010 HDR measures sparked interest and debate
- 4) Technical resources do not reflect Human Development measures
- 5) Political space is opening; demand increasing
- 6) Income poverty: important but incomplete.

# 1. Relevant Data are Increasing

- Since 1985, the multi-topic household survey data has increased in frequency and coverage.
- Even greater breathtaking increases have occurred with income and expenditure data.
- Technology exists to process these data.

# 1. Relevant Data are Increasing



## 2. Multidimensional Measures are exploding

- Bandura (2006) found that over 50% of composite (multidimensional) indices had been developed since 2001; now is greater.
- Examples: Doing Business Index, Governance, Global Peace Index, Quality of Life Indices, Multidimensional Poverty Indices, SIGI, CGD Index.

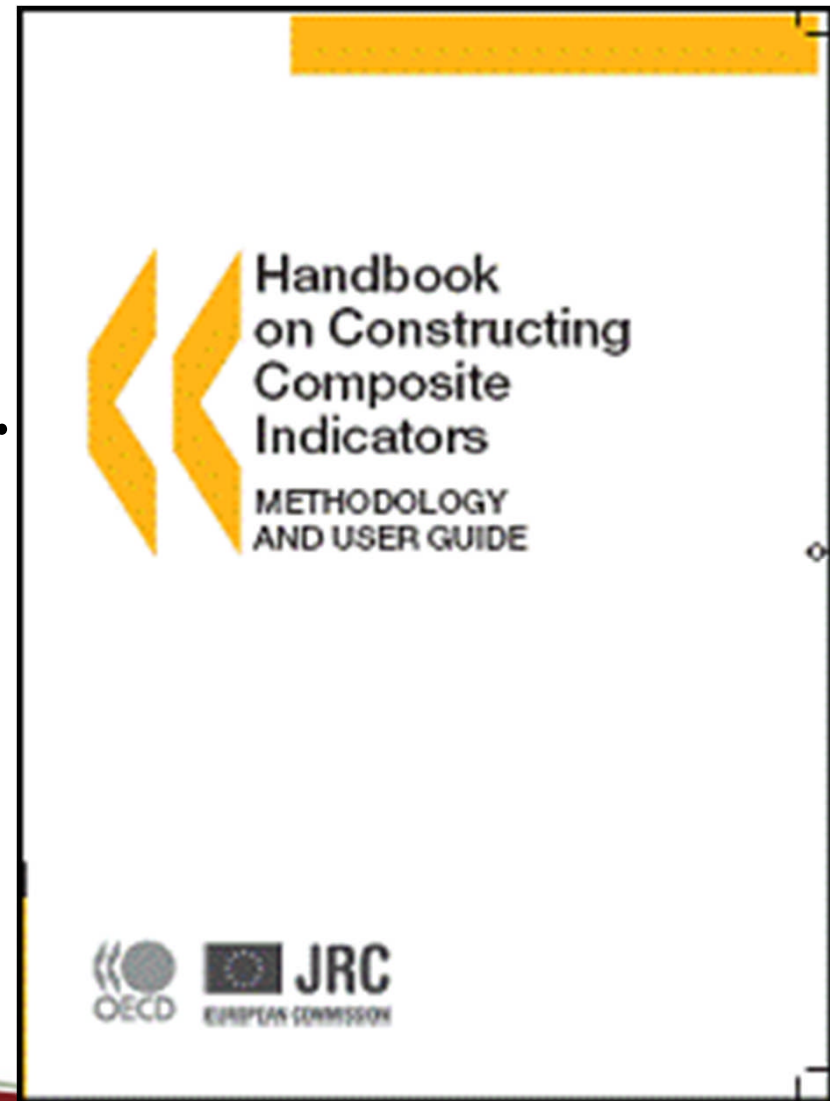


### 3. 2010 HDR sparked debate

- HDI: Blogs and *Lets Talk HD*
- MPI: Blogs and papers
- Governments: what data?  
Our voice?

## 4. Technical Resources do not reflect human development:

Various new guides to measurement methodologies:  
e.g. 2008 Handbook.  
But **they do not view measures as normative.**





## 5. Political space is opening; demand increases

- Basic need: to distill information
- Governments demand – and use – new measures
- Financial Crisis was not predicted
- Sarkozy Commission: Stiglitz Sen Fitoussi

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22 July 2009

Her Majesty The Queen  
Buckingham Palace  
London  
SW1A 1AA

MADAM,

When Your Majesty visited the London School of Economics last November, you quite rightly asked: why had nobody noticed that the credit crunch was on its way? The British Academy

convened a forum on 17 June 2009 to debate your question, with contributions from a range of experts from business, the City, its regulators, academia, and government. This letter summarises the views of the participants and the factors that they cited in our discussion, and we hope that it offers an answer to your question.

Many people did foresee the crisis. However, the exact form that it would take and the timing of its onset and ferocity were foreseen by nobody. What matters in such circumstances is not just to predict the nature of the problem but also its timing. And there is also finding the will to act and being sure that authorities have as part of their powers the right instruments to bring to bear on the problem.

There were many warnings about imbalances in financial markets and in the global economy. For example, the Bank of International Settlements expressed repeated concerns that risks did not seem to be properly reflected in financial markets. Our own Bank of England issued many warnings about this in their bi-annual Financial Stability Reports. Risk management was considered an important part of financial markets. One of our major banks, now mainly in public ownership, reputedly had 4000 risk managers. But the difficulty was seeing the risk to the system as a whole rather than to any specific financial instrument or loan. Risk calculations were most often confined to slices of financial activity, using some of the best mathematical minds in our country and abroad. But they frequently lost sight of the bigger picture.

Many were also concerned about imbalances in the global economy. We had enjoyed a period of unprecedented global expansion which had seen many people in poor countries, particularly China and India, improving their living standards. But this prosperity had led to what is now known as the 'global savings glut'. This led to very low returns on safer long-term investments which, in turn, led many investors to seek higher returns at the expense of greater risk. Countries like the UK and the USA benefited from the rise of China which lowered the cost of many goods that we buy, and through ready access to capital in the financial system it was easy

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22 July 2009

Her Majesty The Queen  
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“principally a failure  
of the collective  
imagination”

So in summary, Your Majesty, the failure to foresee the timing, extent and severity of the crisis and to head it off, while it had many causes, was principally a failure of the collective imagination of many bright people, both in this country and internationally, to understand the risks to the system as a whole.

We have the honour to remain, Madam,  
Your Majesty's most humble and obedient servants





# European Economic Association Presidential Address

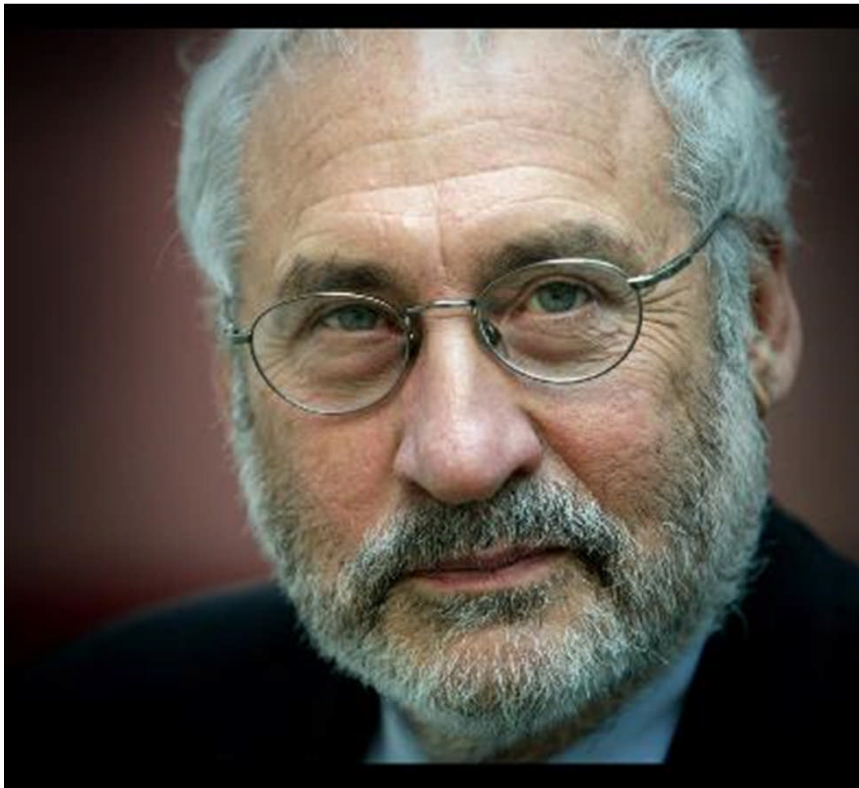
the giants of our  
profession... straddled  
many areas of our  
subject.

As such their judgments  
were founded on a range  
of insights and  
observations.

Nicholas Stern



# Stiglitz Sen Fitoussi: Commission on the Measurement of Economic Performance and Social Progress: [www.stiglitz-sen-fitoussi.fr](http://www.stiglitz-sen-fitoussi.fr)



**“We are almost blind when the metrics on which action is based are ill-designed or when they are not well understood. For many purposes, we need better metrics.”**

# Key reasons for Commission:

1. Statistical indicators are important
  - Especially in an information society
2. What we measure affects what we do;
  - Flawed measures => Distorted decisions
3. Standard measures (growth, inflation, etc) do not match widespread perceptions.
4. **Mistrust of official statistics.**

? ? ? ? ➔



# Reasons Statistics may be faulty

- The measurement process may be imperfect.
- The statistical concepts may be flawed.
- GDP per capita does not reflect inequality, hence GDP may rise and avg income may fall.
- Commonly used statistics omit traffic, climate change, pollution, overwork; people see this.
- Statistics may be wrongly reported/used
- Economic measures may not reflect societal well-being, or sustainability across time.
- Wrong stats lead to surprises (crisis 2008-9)

# The Commission's Consensus (p 9)

- “those attempting to guide the economy and our societies are like pilots trying to steering a course without a reliable compass. The decisions they (and we as individual citizens) make depend on what we measure, how good our measurements are and how well our measures are understood. We are almost blind ...

# Commission's Working Groups:

1. Classical GDP issues
2. Quality of life
3. Sustainability

# Global measures: limited yet key

**‘It has to be as vulgar as  
GDP/capita  
– but better.’**

Amartya Sen, recalling Mahbub ul  
Haq’s insistent aims for the HDI.

# 2009: A good year for measuring well-being

- European Commission's Communication on "GDP and Beyond: Measuring Progress in a Changing World".
- OECD Framework to measure progress.
- CMESP's Report.
- G20 Communique.
- III OECD World Forum.
- OECD Roadmap.

# 6. Why Multidimensional Poverty?

## Income poverty is incomplete

	<b>Mismatches between income poverty and deprivations in education and nutrition.</b>		<b>Education</b>		<b>Nutrition/health</b>	
			Children	Adults	Children	Adults
	<b>deprived in functionings but not income/expenditure</b>	India	43%	60%	53%	63%
		Perú	32%	37%	21%	55%
	<b>income/expenditure poor persons who are not deprived in functionings</b>	India	65%	38%	53%	91%
		Perú	93%	73%	66%	94%

Source: Franco *et al.* (2002) cited in Ruggieri-Laderchi, Saith and Stewart.



# 6. Why Multidimensional Poverty?

## Income poverty is incomplete

**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

# Sometimes You Don't Need to Get Every Detail Right

It doesn't matter in what order the letters in a word are, the only important thing is that first and last letter is at the right place. The rest can be a total mess and you can still read it without problem. This is because we do not read every letter by itself but the word as a whole.

# Why multidimensional poverty measures?

- Because poverty is a multidimensional phenomenon!
- Yes, but...This is a *necessary* yet insufficient justification for MD poverty measures.
- We are going to justify the use of MD poverty measures by looking at how these measures respond to two crucial challenges.

# Two major challenges to multidimensional poverty measures

1. Money-metric poverty (e.g. 1.25 US\$ a day) is already multidimensional, it is based on consumer theory, its embedded trade-offs are transparent. Certainly it can be improved, but why replace it?
2. Ok, I do not like monetary poverty either, but why a composite index? Let's apply a dashboard approach!

# 1. Monetary poverty is multidimensional

- Yes, poverty is multidimensional.
- But Sen never said we should construct an index of deprivations.
- Monetary poverty works in “attainment space”: you add the *value* of the amounts of goods you consume, and compare against a poverty line.



# 1. Monetary poverty is multidimensional



- Hence monetary poverty respects consumer's choices: its trade-offs are prices.
- Yes, monetary poverty has problems (e.g. lack of shadow prices, international comparability) but these could all be solved, in theory.



# 1. The problems with monetary poverty

- There are current problems with the way it is measured today for global comparisons (e.g. comparability of consumption baskets, determination of “dollar a day” lines).
- Check out the work by Angus Deaton on this.
- As Ravallion admits, consumption theory is not the only framework for the measurement of poverty.
- Likewise there is no reason why prices are the best (or only) weights conceivable.

# 1. The problems with monetary poverty

- Another problem (maybe the most important one) is that monetary poverty does not understand poverty as *capability deprivation*.
- Monetary poverty does not give any importance to specific deprivations.
- It implies perfect substitutability between items, through relative prices.
- This can be fine in some circumstances (e.g. “broccoli deprivation”???). But not in others where such perfect substitution is ethically problematic.

# 1. The problems with monetary poverty

- If we understand poverty as capability deprivation we may want MD poverty measures that identify people's deprivations in specific dimensions of wellbeing.
- In that sense, monetary poverty is quite problematic.
- However...Is that sufficient justification for a composite index of deprivations?

# 1. The problems with monetary poverty



- “Human lives are battered and diminished in all kinds of different ways, and the first task... is to acknowledge that deprivations of very different kinds have to be accommodated within a general overarching framework.”

## 2. A dashboard approach to multidimensional poverty

- Why not? Look I do not like monetary poverty either (it hurts my left-wing, anti-consumerist feelings, it is a World Bank plot anyway, etc.), let's monitor multiple deprivations using a “dashboard” approach.
- Advantages: it is transparent; every trend is monitored; by contrast, composite indices compress vital information (e.g. Ravallion's examples).

## 2. The problems with the dashboard approach to multidimensional poverty

- Try to monitor 56 indicators: The dashboard's appeal is inversely proportional to the number of indicators of poverty/wellbeing. At some point you need to aggregate or reduce (as in “data reduction techniques”).
- More important: dashboard approaches also toss out information. They are insensitive to the joint distribution of deprivations.
- That means, they are useless for measuring extreme forms of poverty and indigence.



## 2. The problems with the dashboard approach to multidimensional poverty

Country W

	A	B	C	D
1	1	0	0	0
2	0	1	0	0
3	0	0	1	0
4	0	0	0	1

Country E

	A	B	C	D
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	1	1	1	1

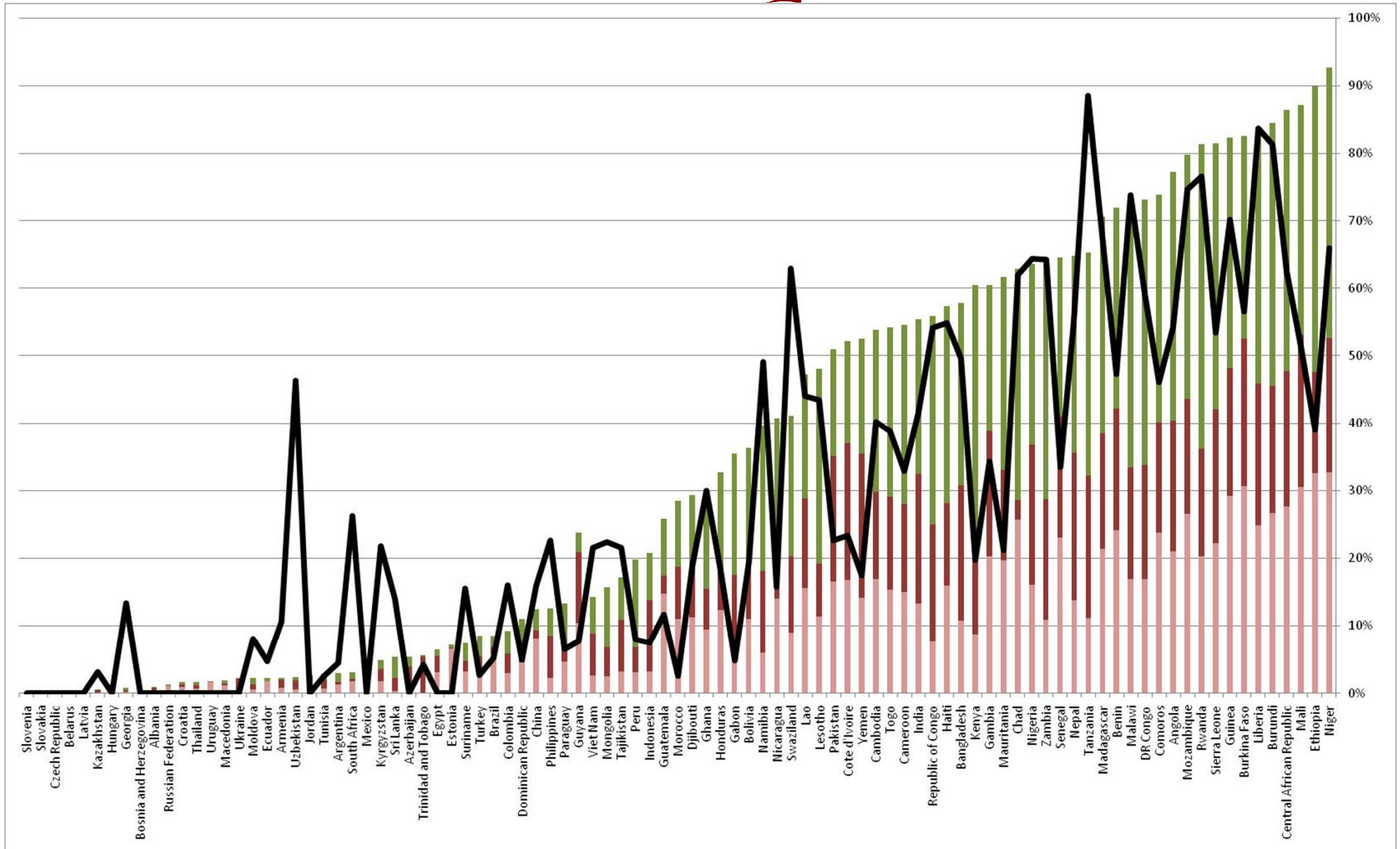
- Dashboard analysis: 25% deprived in A, 25% in B, etc., in both W and E.
- Naïve, insensitive composite index: 25% MD poverty in both W and E.
- More sophisticated, sensitive index: Union poverty is 100% in W and E; whereas Intersection poverty is 0% in W and 25% in E.

## 2. The problems with the dashboard approach to multidimensional poverty

From the Stiglitz commission:

- “ [t]he consequences for quality of life of having *multiple disadvantages* far exceed the sum of their individual effects.”
- “Developing measures of these cumulative effects requires information on the ‘joint distribution’ of the most salient features of quality of life across everyone in a country through dedicated surveys.”

### 3. An empirical challenge: Does it make a difference to change the metric?



# MD poverty measures: challenges, improvements, best practices

- MD measures should complement (not substitute) other measures and approaches:
  - We may still be interested in tracking destitution in command over goods (e.g. with monetary poverty).
  - Composite indices do compress information on individual trends, so we should use them together with dashboards.
  - With a combination of joint-distribution sensitive indices (e.g. AF) with dashboard approaches, distribution-insensitive composite indices become unnecessary (unless too many indicators involved).

# MD poverty measures: challenges, improvements, best practices

- More work needed on the theoretical foundations of MD poverty measures, beyond the capability approach, especially considering the different possible functional forms.
- In relation to that, more discussion needed on the implied trade-offs (and relationships, in general) between dimensions.

# MD poverty measures: challenges, improvements, best practices

- MD measures bring about several non-trivial decisions:
  - Choices of weights, dimension-specific poverty lines, multidimensional deprivation cut-offs.
- These, in turn, pose a robustness challenge. Hence the need to develop methods that assess the sensitivity and robustness of analyses based on MD poverty measures.



# MD poverty measures: challenges, improvements, best practices

From the Stiglitz commission:

- “While assessing quality-of-life requires a plurality of indicators, there are strong demands to develop a single summary measure”.
- “Statistical offices should provide the information needed to aggregate across quality-of-life dimensions, allowing the construction of different indexes”.

# In a nutshell: Why MD poverty measures?

- Traditional monetary measures do not fit that well with the notion of poverty as capability deprivation.
- A good MD sensitive measure can work in tandem with a dashboard approach. One generates the interest for looking into the other.
- Sensitivity to the joint distribution is helpful in order to measure different degrees of poverty acuteness.
- A summary measure (e.g. MPI) can provide a bird's eye view and generate political and public interest.
- Further appeal if the measure is decomposable by groups, indicators, and their respective changes across time.