(Re)Counting the poor in Peru: a multidimensional approach

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▶ Outline

- Motivation and objectives.

- A simple comparison framework/strategy.

- What is poor in Peru? >> select dimensions and indicators.

- Who is poor in Peru? >> apply comparison strategy.

- Poverty and policy >> multidimensional poverty incidence across regions and its main contributors.

- Concluding remarks.

▶ Motivation

- Impressive 12 point reduction in Peruvian monetary poverty figures: 48.6% (2004) - 36.2% (2008).

- These figures could mask deprivation in several other aspects critical for human development.

- Availability of information via an extremely rich living-standards survey. Despite this, multidimensional poverty measurement is an unexplored topic in Peru.

- Work by Alkire and Foster on multidimensional poverty, providing a simple and insightful approach for identifying the poor.

► Objectives

- Address the apparent controversy between the recent evolution of poverty figures and the levels of deprivation of the Peruvian population.

  - We use the Alkire-Foster multidimensional headcount for a formal approach.

  - We develop a comparison framework.

- Illustrate how the multidimensional measure proposed can aid policy design by providing correct incentives to focalize interventions.

  - We make inter and intraregional comparisons of the aggregate poverty measure and its main contributors.

► A simple comparison framework

- **We DO NOT want**: a tool to determine if the poverty line indicator under of overestimates some underlying "true level" of poverty.

- **We DO want**: measure the tension between the incidence of monetary poverty and the overall level of deprivation in terms of the set of attributes considered for the multidimensional measure.

- The assets considered: play an important role in human development; are not perfect substitutes nor perfect complements → when choosing k, we prefer to stay away from the "intersection" (deprivation in all; $k=d$) and "union" (deprivation in any of them; $k=1$) approaches.
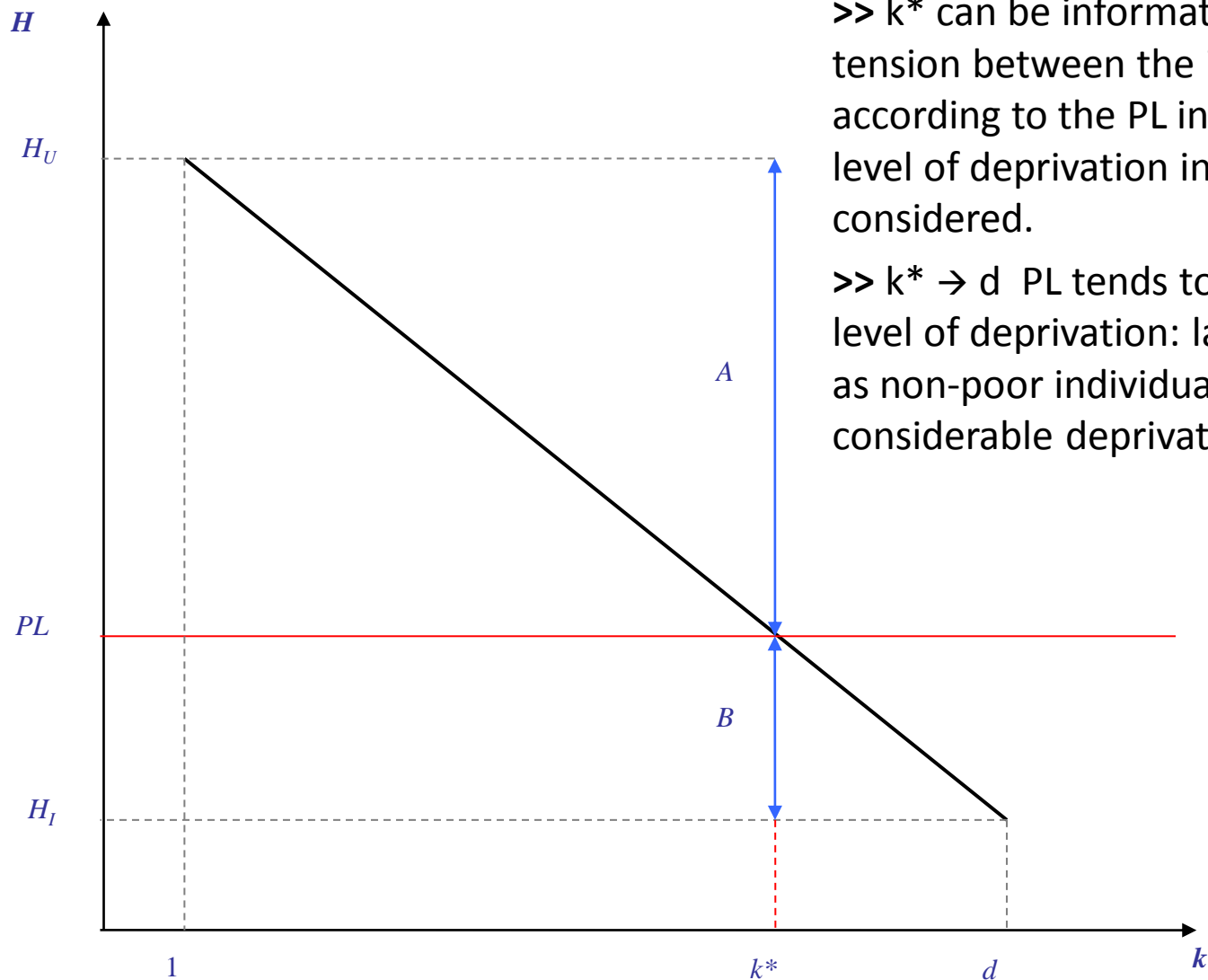
► A simple comparison framework
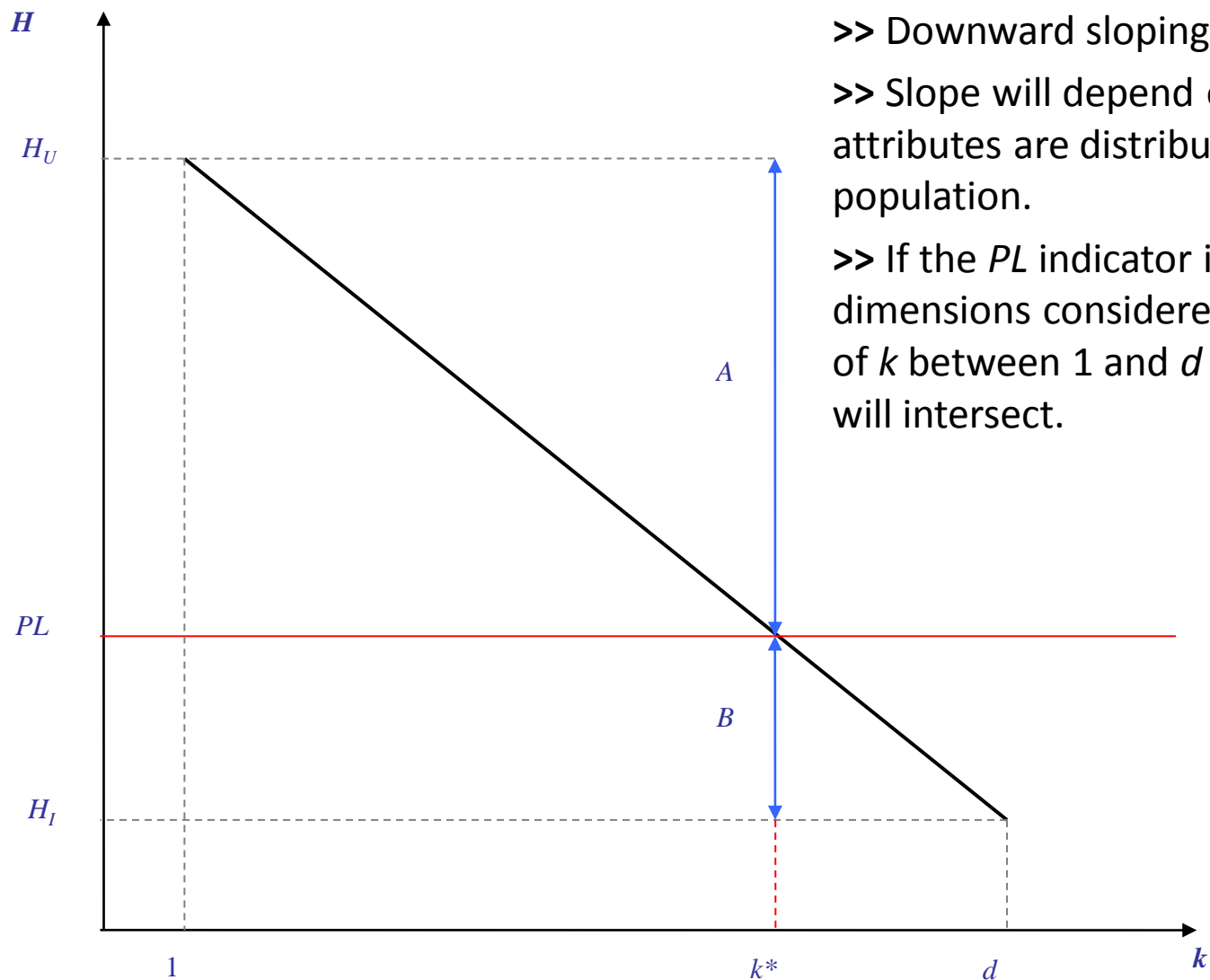
Function H(k) and PL:

>> Downward sloping (*Hu > Hi*)

>> Slope will depend on the way in which attributes are distributed among the population.

>> If the *PL* indicator is one of the dimensions considered, there exists a value of *k* between 1 and *d* for which *PL* and *H(k)* will intersect.

▶ A simple comparison framework

>> k* can be informative of the potential tension between the identification as "poor" according to the PL indicator and the overall level of deprivation in the dimensions considered.

>> k* → d PL tends to understate the overall level of deprivation: large risk of classifying as non-poor individuals that endure considerable deprivation.

▶ A simple comparison framework
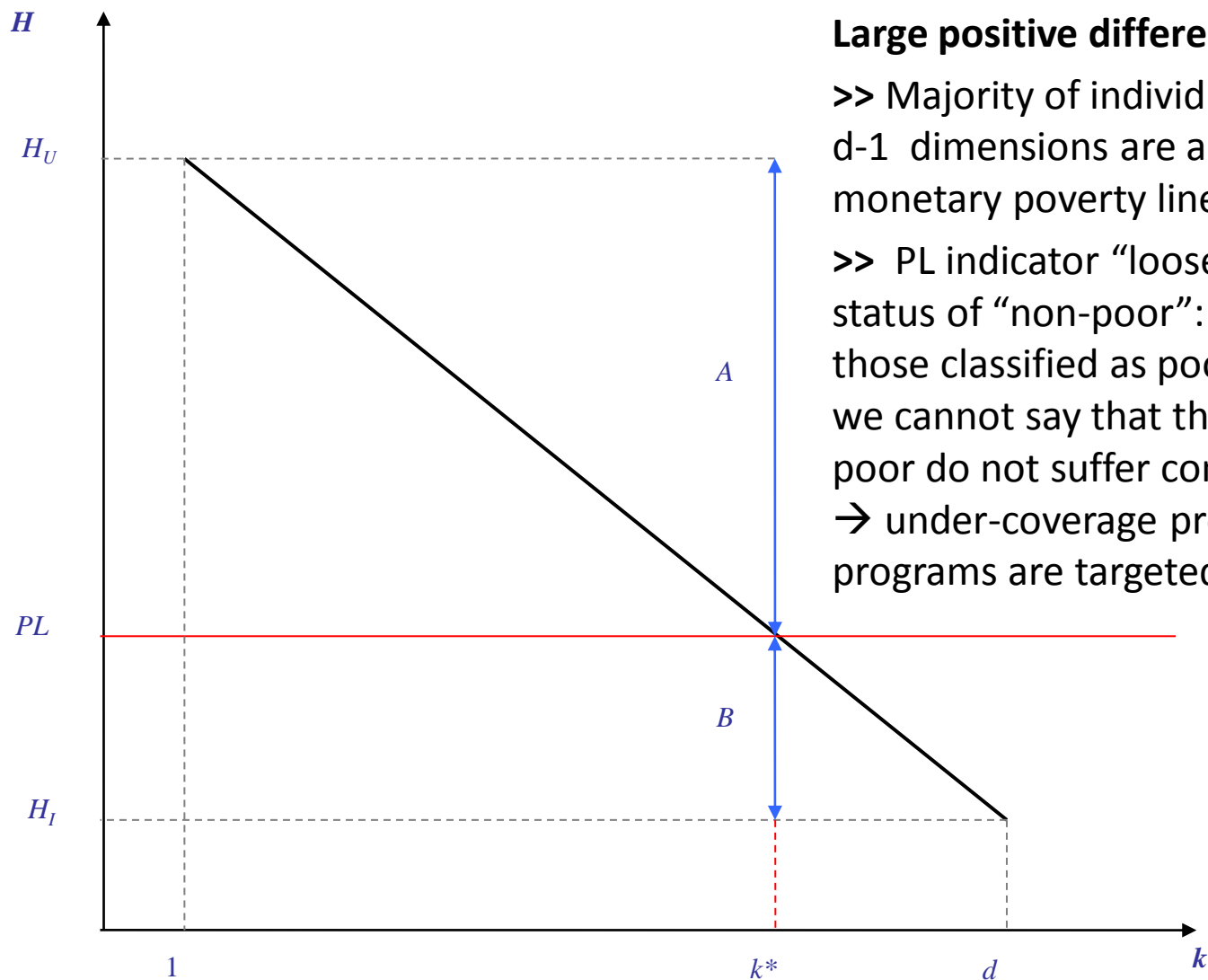
>> Compare *A = Hu-PL* vs. *B = PL-Hi*.

Large positive difference between A and B:

>> Majority of individuals deprived in 1 to d-1 dimensions are able to surpass the monetary poverty line!!

>> PL indicator "looses power" to reject the status of "non-poor": we can be sure that those classified as poor are surely in need; we cannot say that those deemed as non-poor do not suffer considerable deprivation. → under-coverage problems if social programs are targeted using the PL measure.

▶ What is poor in Peru?

Dimension	Indicators	Cut-off value: person is deprived if...	% Deprived 2004	% Deprived 2008
Nutrition	Household calorie consumption	Household calorie consumption is below threshold given household composition·	32.3%	30.90%
Education	Children between 8 and 17 years of age attending school	Household has one or more children between 8 and 17 years of age not attending school.	16.0%	12.4%
Health	Access to health establishment in the event of illness	Person reported illness and was unable to access a health establishment due to insufficient resources.	42.5%	47.7%
Dwelling conditions	Adequate water supply; adequate sewage service; non-precarious materials; non-crowded household/3	Dwelling lacks one or more characteristic.	52.0%	51.1%
Monetary	Household monetary value of per capita consumption	Household per capita consumption is below poverty line.	48.6%	36.2%
Vulnerability	Household head literacy condition	Household head is reported as illiterate.	11.3%	9.2%

▶ **Who is poor in Peru?**

2004
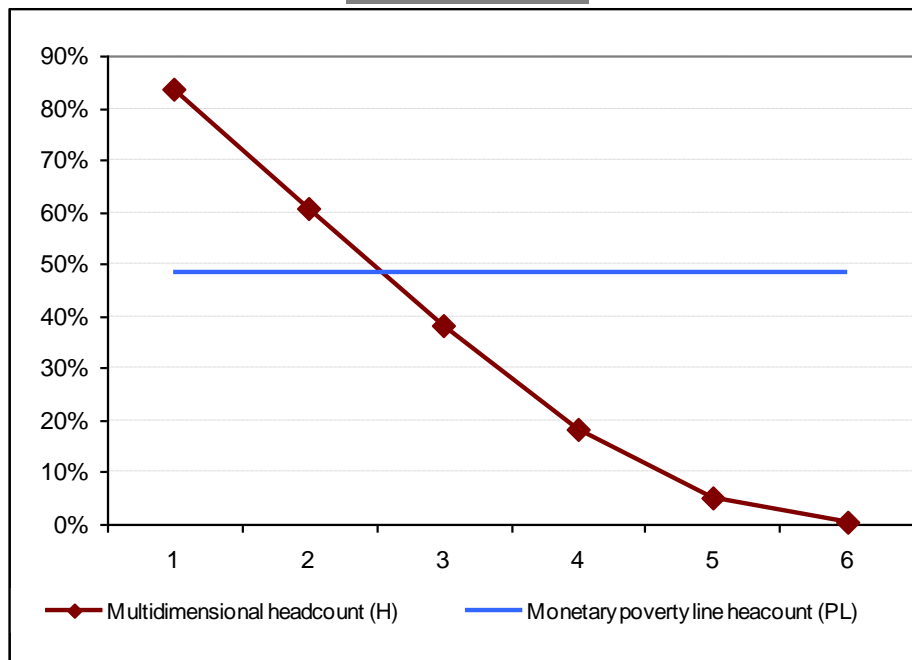
2008
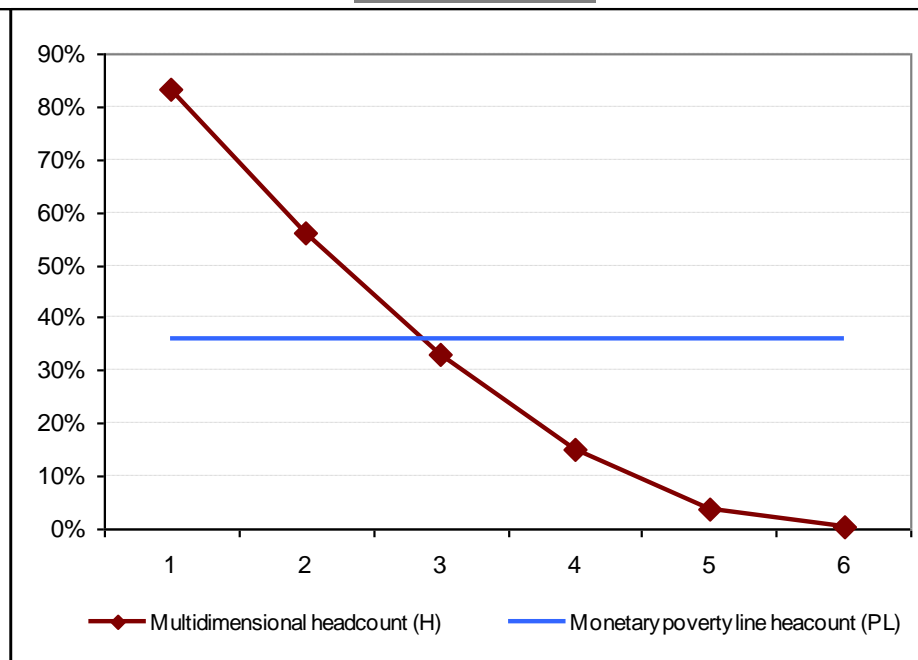
>> The reduction in the level of the *PL* indicator has not been accompanied by a similar shift in the *H(k)* function and, thus, the value of k* has increased.

>> The PL indicator now exhibits a larger tendency to understate the overall level of deprivation.

▶ Who is poor in Peru?

>> Results by PL indicator shifted from a tendency to overstate to a tendency to underestimate the overall level of deprivation.

>> **If we only rely on the poverty line indicator, we face a larger risk of classifying as non-poor individuals who still endure considerable deprivation.**

	Mulditimensional headcount (H)						PL	Hu - PL (A)	PL - Hi (B)	%A	%B
	k=1	k=2	k=3	k=4	k=5	k=6					
2004	83.8%	60.8%	38.3%	18.4%	5.2%	0.5%	48.6%	35.2%	48.1%	42.3%	**57.7%**
2008	83.3%	56.2%	32.9%	15.2%	3.9%	0.4%	36.2%	47.1%	35.8%	**56.8%**	43.2%

▶ Poverty and policy

- Poverty measures should convey information regarding the effectiveness of social policies.

- The Alkire-Foster identification method has desirable features to track the provision of basic public services.

- "Deprivation focused" → it creates incentives to provide those assets from which the poor are deprived up to the point of removing such deprivation.

- Policymaker would not be able to provoke a significant reduction in the multidimensional headcount ratio unless it focuses on guaranteeing increases in those dimensions in which the poor are deprived.

▶ Poverty and policy

Multidimensional poor and non-poor classified according to the PL indicator

2004			
PL classification	Multidimensional classification (k = 2)		
	Non poor	Poor	Total
Non poor	37.0%	14.4%	51.4%
Poor	2.2%	46.4%	48.6%
Total	39.2%	60.8%	100.0%

2008			
PL classification	Multidimensional classification (k = 2)		
	Non poor	Poor	Total
Non poor	42.5%	21.3%	63.8%
Poor	1.3%	34.9%	36.2%
Total	43.8%	56.2%	100.0%

2004			
PL classification	Multidimensional classification (k = 3)		
	Non poor	Poor	Total
Non poor	49.3%	2.1%	51.4%
Poor	12.4%	36.2%	48.6%
Total	61.7%	38.3%	100.0%

2008			
PL classification	Multidimensional classification (k = 3)		
	Non poor	Poor	Total
Non poor	58.7%	5.1%	63.8%
Poor	8.4%	27.8%	36.2%
Total	67.1%	32.9%	100.0%

▶ Poverty and policy

Level of Aggregation	2004 (k=2)				2008 (k=2)			
	Poor-poor	MPI poor PL non-poor	MPI non-poor PL poor	Non-poor non-poor	Poor-poor	MPI poor PL non-poor	MPI non-poor PL poor	Non-poor non-poor
Household Size								
1	15.0%	31.7%	0.4%	52.9%	14.8%	28.2%	0.6%	56.4%
2	26.5%	18.8%	0.7%	54.0%	21.2%	20.7%	0.6%	57.5%
3	24.0%	18.0%	1.5%	56.6%	18.3%	21.4%	1.2%	59.1%
4	32.7%	18.4%	2.7%	46.2%	24.2%	22.2%	1.1%	52.5%
5	43.3%	14.6%	2.4%	39.6%	32.6%	23.0%	1.7%	42.7%
6	55.5%	13.1%	2.8%	28.7%	41.7%	21.2%	1.4%	35.7%
>=7	64.3%	12.8%	2.3%	20.6%	55.5%	21.0%	1.4%	22.2%
Education of HH Head								
<=0 years of schooling	73.0%	20.1%	0.7%	6.2%	63.1%	25.0%	0.4%	11.6%
<5	62.0%	16.0%	1.9%	20.0%	47.8%	25.1%	1.3%	25.8%
completed [5-7]	54.4%	14.6%	2.5%	28.5%	45.6%	21.7%	1.5%	31.2%
completed [8-10]	46.2%	16.1%	2.9%	34.8%	36.3%	22.1%	1.8%	39.9%
completed 11+	23.8%	14.7%	2.4%	59.1%	15.7%	20.0%	1.3%	63.0%
National	**46.4%**	**14.4%**	**2.2%**	**37.0%**	**34.9%**	**21.3%**	**1.3%**	**42.5%**

▶ Poverty and policy

Level of Aggregation	2004				2008			
	Poor-poor	MPI poor PL non-poor	MPI non-poor PL poor	Non-poor non-poor	Poor-poor	MPI poor PL non-poor	MPI non-poor PL poor	Non-poor non-poor
Urban/Rural								
Urban	33.5%	15.3%	2.5%	48.7%	21.7%	21.3%	1.3%	55.7%
Rural	67.0%	16.4%	1.6%	15.0%	57.8%	23.1%	1.2%	17.9%
Geographical Region								
North Coast	43.1%	18.8%	1.5%	36.6%	28.3%	26.3%	0.7%	44.8%
Central Coast	28.7%	21.0%	2.4%	47.8%	18.5%	29.4%	0.8%	51.3%
South Coast	27.5%	17.8%	2.6%	52.1%	16.5%	24.2%	0.8%	58.4%
North Highlands	67.0%	11.4%	3.5%	18.0%	60.0%	18.4%	1.4%	20.2%
Central Highlands	64.5%	13.2%	1.7%	20.6%	54.7%	20.1%	1.3%	23.9%
South Highlands	55.6%	16.7%	1.8%	25.9%	50.4%	17.9%	1.6%	30.2%
Jungle	55.3%	19.5%	1.2%	24.0%	39.7%	32.4%	0.3%	27.6%
Metropolitan Lima	26.6%	12.7%	3.2%	57.6%	15.4%	16.7%	2.0%	65.9%
National	**46.4%**	**14.4%**	**2.2%**	**37.0%**	**34.9%**	**21.3%**	**1.3%**	**42.5%**

► Poverty and policy
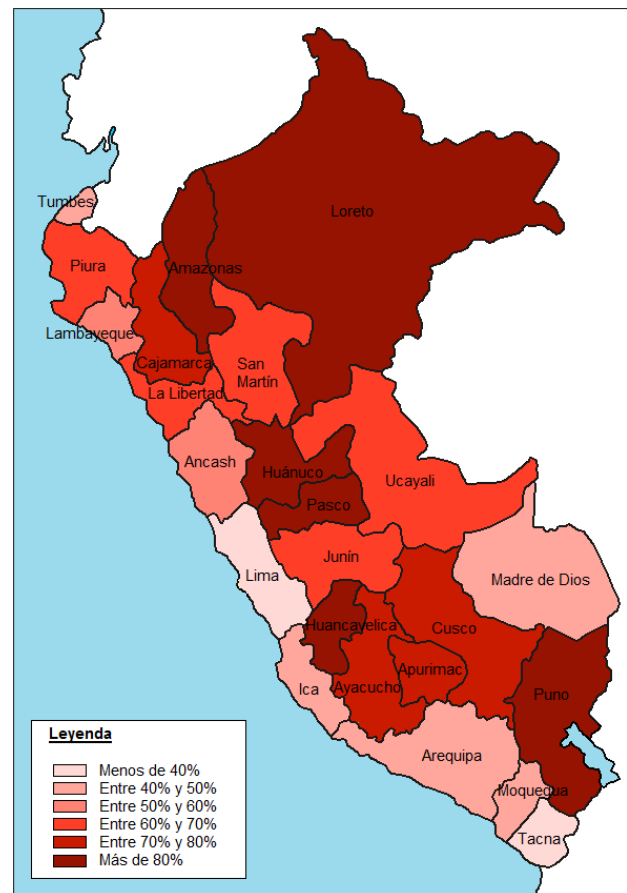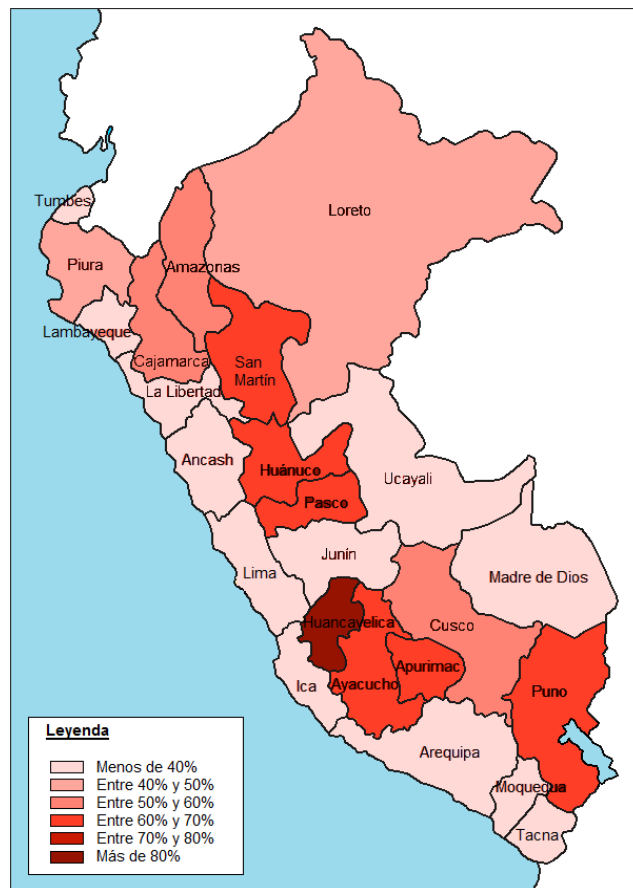
>> H(2) indicator provides a less optimistic panorama regarding the incidence of poverty: 21 out of 24 regions shift to a higher poverty group.

>> Multidimensional poverty concentrated on Peru's southern highlands and uncovers significant levels of deprivation affecting the northern Amazon area.

▶ Concluding remarks

- Recent 12 point reduction in the incidence of monetary poverty has not been accompanied by increased access to other assets important for individuals' well-being and ability to develop.

- We currently face a larger risk of classifying as non-poor individuals who still endure significant deprivation if we only rely on the monetary dimension for identification purposes.

  - According to 2008 figures, 39% of individuals lacking one third or more of the attributes considered would be classified as non-poor according to the monetary poverty line. This proportion was only 26% in year 2004.

▶ Concluding remarks

- The multidimensional headcount proposed:

    - Is larger than or equal to the monetary poverty line indicator in all regions.

    - Uncovers significant deprivation in the northern Amazon.

    - Reveals that deprivations endured by the multidimensional poor are similar across regions and concentrated on the health and dwelling conditions dimensions, in particular, on the lack of adequate water and sanitation services → opportunity to focalize public investment efforts.

▶ Concluding remarks

- Further research:

  - Use of weights to account for dimensions with different degrees of importance.

  - Account for education quality via the results of national standardized tests.

  - Include spatial characteristics