

THE VULNERABILITY OF THE UNINSURED TO HEALTH SHOCKS IN PERU

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Structure of the presentation

- Objectives
- Brief background of the Health System in Peru
- Incidence and distribution analysis of the CHE
 - Sensitivity to methodological decisions
 - Effect of CHE on income distribution
- Household consumption and income to health shocks
 - Health shock definition
 - Effects on the OOPHE
 - Effects on the non-medical consumption
- Conclusions, future efforts

Objectives of the study

- Explore the capacities and limitations of the measures of CHEs to describe the vulnerabilities of the uninsured poor to health shocks in Peru
- Explore the use of longitudinal data to unfold other important aspects of the vulnerability to health shocks

About the data

- National household survey 2006 (ENAH0)
- Nationally representative, urban/rural, by region
- Survey includes:
 - Expenditure and income modules
 - Insurance situation
 - Reviews module includes principal shocks that have affected to the family during past 12 months.

Access to health insurance in Peru

	2000	2002	2006
Affiliated to a health insurance	44.3	40.4	37.9
EsSalud	18.3	17.1	18.4
SEG-SMI / SIS /a	24.6	20.0	16.4
Other private	5.4	4.7	4.2
Utilization of medical services (last 4 weeks)	20.5	19.7	15.2

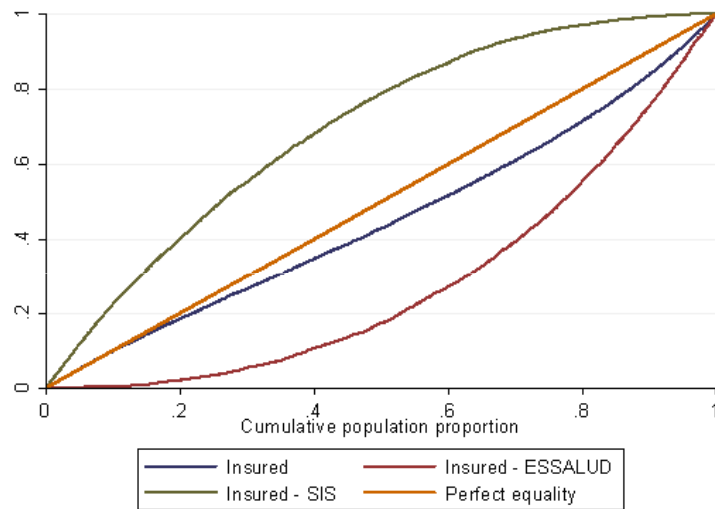
Source: ENAHO 2000, 2002, 2006

/a For 2000, it refers to affiliation to the SIS predecessor, the school health insurance

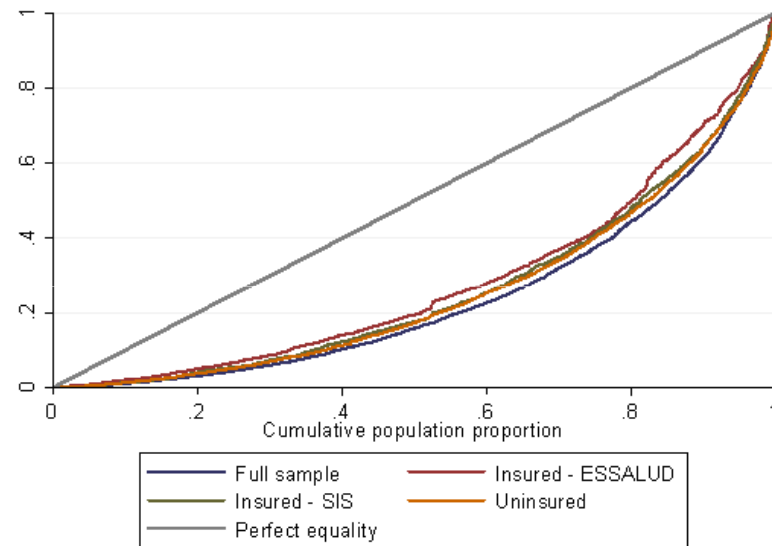
- Only 38% of the individuals have any health insurance
- Principal insurers are: EsSalud (employment-based contributions) and SIS (publicly subsidized)
- SIS covers mainly care associated with pregnancy, child birth, postpartum and control of growth and development of children

Insurance and OOPHE distribution in Peru

Affiliation by type of insurance



OOPHE by type of insurance



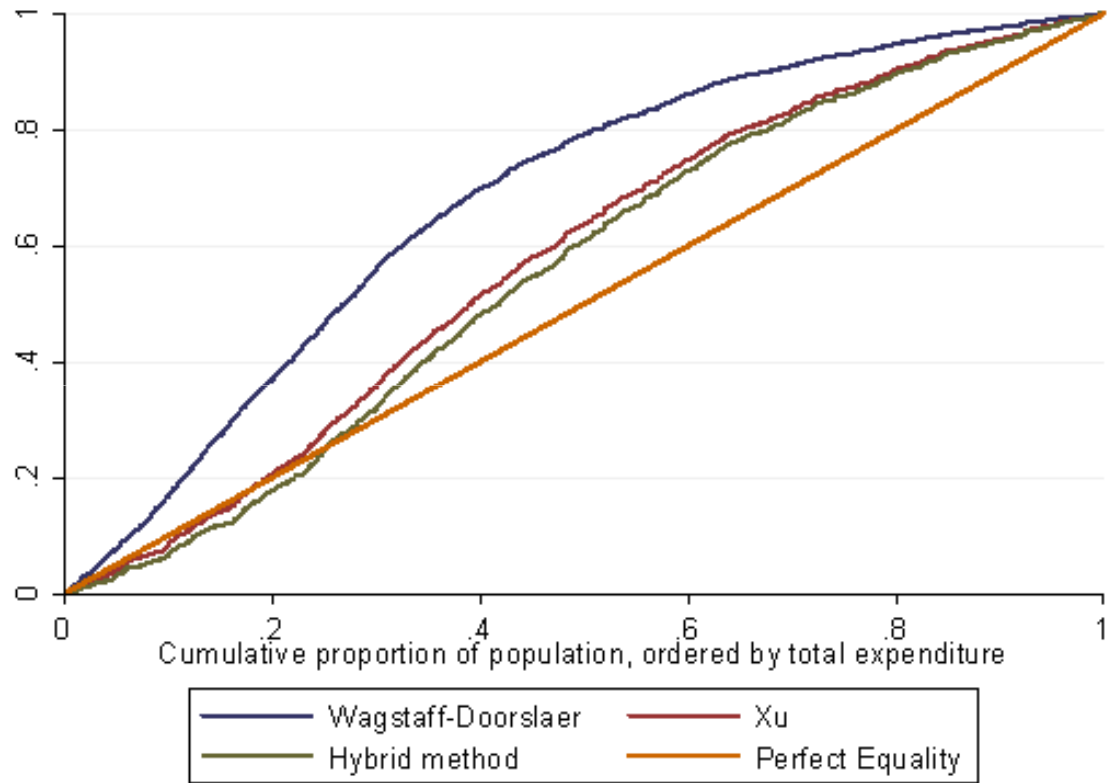
- SIS affiliation is very pro-poor (EsSalud is the opposite)
- OOPHE are clearly concentrated among the less poor, with no major differences by insurance condition

Prevalence of CHE: Mean and inequality – by method and threshold

	Mean	CI
OOPHE (annual soles)	1,006	0.425
Total expenditures (annual soles)	18,073	0.324
CHE	HR	CI
W-vD method		
20%	0.196	-0.368
30%	0.146	-0.531
40%	0.121	-0.631
Xu method		
20%	0.134	-0.136
30%	0.079	-0.248
40%	0.051	-0.317
Hybrid method		
20%	0.124	-0.076
30%	0.073	-0.2
40%	0.048	-0.281
Impoverishing health expenditures	0.012	-0.538

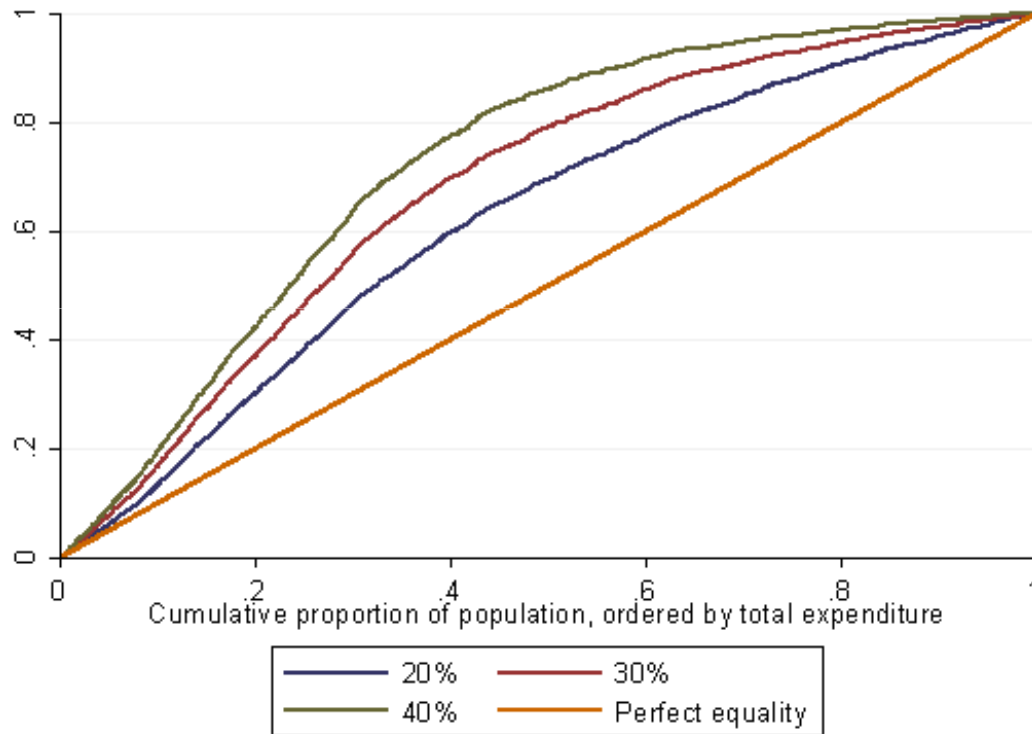
- Estimated prevalence of CHE is highly sensitive to different definitions, always arbitrary
- W-vD method tend to report high prevalence than Xu method
- Two types of differences:
 - Definition of poverty (basic needs) line
 - Treatment of OOPHE by the extreme poor.
- In the table, Hybrid method is Xu method but with the BN determinations in the W-vD method way.
- Then, W-vD and Xu differences are due to the treatment of OOPHE by the poor.
 - W-vD assume CHE even with very little OOPHE.
 - Xu *artificially* increases the capacity to pay
- On other hand, with a large threshold → lower prevalence
 - But the distribution becomes more anti-poor

Method and inequality (30% threshold)



- W-vD method implies a higher incidence and also higher inequality (anti-poor)

Concentration curves CHE – W-vD method, by threshold



Raising the threshold implies:

- Lower incidence of CHE
- Higher inequality anti-poor

Health shocks and family welfare

- Use panel data to explore other dimensions of the vulnerability of household welfare to health shocks
 - Can families smooth non-medical consumption from health shocks and income fluctuations? (Gertler & Gruber, 2002)
 - What's the effect of health shocks on human K investments?
- We use 2002-2003 ENAHO panel: 3,066 observations
- Two measures of health shocks:
 - 1) Health module: A household member acquiring a serious chronic illness in 2003
 - 2) Module on perceptions about shocks: Death or serious illness of a household member

Health shocks by type of household

	All (N=3066)	Only adults (N=980)	With children		With children of the head	
			Head's partner present (N=1735)	Head's partner not present (N=351)	Head's partner present (N=1369)	Head's partner not present (N=151)
Change in chronic conditions						
Any member becomes ill	0.258	0.257	0.261	0.248	0.240	0.199
Any member 14-55 years becomes ill	0.156	0.124	0.176	0.145	0.178	0.126
Head becomes ill	0.108	0.132	0.089	0.137	0.077	0.119
Head's partner becomes ill	0.178	0.202	0.173	0.137	0.155	0.119
Principal earner becomes ill	0.098	0.128	0.081	0.091	0.074	0.079
Adverse events reported by the head						
Death of a member	0.023	0.028	0.005	0.094	0.004	0.139
Any member severely ill	0.211	0.245	0.196	0.194	0.199	0.159

Notes: The table reports the percentage of households that suffer a deterioration on the health status of their members. We define the deterioration of the health status of a household member by the occurrence of a new chronic disease using information from the health section from ENAHO. We also use the report on deaths and the occurrence of severe illness for household members given by the household head in the section on adverse events from ENAHO.

Brief methodological references

- Effects on OOPHEs:

$$\Delta OOPHE_{ij} = \alpha_j + \beta \Delta h_{ij} + \sum_k \lambda_k X_{ijk} + \eta_{ij}$$

- Effects on labor income:

$$\Delta Y_{ij} = \alpha_j + \beta \Delta h_{ij} + \sum_k \lambda_k X_{ijk} + \eta_{ij}$$

- Effects on non-medical expenditure

$$\Delta \ln\left(\frac{C_{ij}}{n_{ij}}\right) = \alpha_j + \beta \Delta Y_{ij} + \sum_k \lambda_k X_{ijk} + \varepsilon_{ij}$$

with Δh_{ij} as instrumental variable

Results: Health shocks and OOPHE

	All	Only adults	With children		With children of the head	
			Head's partner present	Head's partner not present	Head's partner present	Head's partner not present
	(N=3066)	(N=980)	(N=1735)	(N=351)	(N=1369)	(N=151)
Any member becomes ill	0.665 (0.118)	0.774 (0.246)	0.501 (0.142)	1.375 (0.376)	0.510 (0.165)	1.466 (0.690)
Any member 14-55 years becomes ill	0.631 (0.142)	0.865 (0.329)	0.442 (0.162)	1.446 (0.451)	0.516 (0.183)	1.935 (0.815)
Head becomes ill	0.733 (0.165)	0.890 (0.313)	0.416 (0.219)	1.449 (0.466)	0.311 (0.263)	1.915 (0.843)
Head's partner becomes ill	0.499 (0.182)	0.487 (0.383)	0.563 (0.200)		0.655 (0.236)	
Death of a member	-0.458 (0.593)	-1.140 (1.087)	-1.845 (1.483)	-0.106 (0.966)	-0.741 (1.827)	-0.282 (1.367)
Any member severely ill	-0.453 (0.227)	-0.310 (0.434)	-0.545 (0.285)	-0.904 (0.754)	-0.363 (0.321)	0.296 (1.413)

Notes: Standard errors in parentheses. Coefficients estimated from separated first differenced regressions of the change in per capita medical expenditures on health shocks and additional covariates.

Results: Health shocks and non-medical consumption smoothing (with IVs)

	All	Only adults	With children		With children of the head	
			Head's partner present	Head's partner not present	Head's partner present	Head's partner not present
	(N=3066)	(N=980)	(N=1735)	(N=351)	(N=1369)	(N=151)
Any member becomes ill	0.403 (0.268)	0.335 (0.476)	0.473 (0.317)	-0.059 (0.155)	3.037 (10.190)	1.924 (16.792)
Any member 14-55 years becomes ill	0.966 (2.507)	-1.243 (13.732)	-2.352 (11.919)	-0.070 (0.098)	-0.640 (0.767)	1.292 (6.452)
Head becomes ill	-0.631 (1.909)	-0.031 (0.381)	-5.224 (59.148)	-0.221 (0.383)	-0.566 (0.903)	0.561 (0.973)
Head's partner becomes ill	1.815 (5.402)	0.676 (1.069)	-2.028 (10.726)		-2.133 (9.131)	
Death of a member	1.615 (5.262)	3.749 (39.535)	0.255 (0.173)	-0.799 (4.580)	0.373 (0.567)	-0.399 (4.090)
Any member severely ill	-0.364 (1.409)	0.026 (0.446)	-0.050 (0.147)	0.415 (1.312)	-0.080 (0.143)	0.185 (0.402)

Notes: Standard errors in parentheses. Coefficients estimated from separated first differenced regressions of the change in per capita non-medical expenditures on non-medical family labor earnings. All regressions estimated by 2SLS, using health shocks as the instrumental variables for labor earnings. All regressions include additional covariates as described in the text.

Some extra new results

- We find some negative impacts on preventive child health care, although not on school attendance
- We re-analyze the hypothesis adding an extra year to the ENAHO panel (2002, 2003, 2004)
 - Allow for different coefficients for each period
 - We find similar results with these new data:
 - Health shocks increase OOPHEs
 - But, no impact on overall households consumption smoothing

Preliminary conclusions and outstanding questions

- CHE prevalence is high and affects proportionally more to the poorest
 - Considering any OOPHE by the poor as catastrophic increases both incidence and anti-poor biases
 - Some of them may be small, but they still reflect serious hardships faced by this poor, even though some of them may be rather small
 - Thus, financial protection against health shocks is a key policy issue that affects the poor and uninsured
 - In Peru, The expansion strategy of SIS is not enough, because its basket is limited to the care associated with pregnancy, childbirth, postpartum and control of growth and development of children.

Preliminary conclusions and outstanding questions

- On average, Peruvian households don't seem to spend on health care at the cost of non-medical expenditures
 - Optimistic view: family and social networks allow households to afford some of the necessary expenses (crowding out for the universal public insurance?)
 - When family doesn't have enough resources, it "chooses" not to use the health system, or settle for lower quality, because the family would be willing to accept permanent health losses (reduced quality of life) – we would need better data on health status

Future research agenda

- In the very short run, check whether some particularly vulnerable groups are less able to smooth consumption (poor, uninsured)
- The use of household panels can help understand vulnerability of the uninsured, although it would be important to improve our measurements of health shocks
 - Less subjective health shock measures: ADLs?
- Ideal if combined with some exogenous variation in insurance schemes (Peru offers a good opportunity with large reform of main public health insurance instrument, SIS)