



Measuring Chronic Non-Income Poverty

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Introduction

- Chronic vs. transitory poverty and vulnerability debates focused on income dimension (stochastic nature of income-generating process);
- In static poverty assessments, shortcomings of income metric well recognized and plethora of alternatives available;
- Can one usefully conceptualize and measure chronic poverty (or vulnerability) using non-income measures of well-being?
- Propose ways to do this and illustrate potential and short-comings using panel data from Vietnam (1992/3-1997/8).

Literature Review

- Very few studies: data problems, possibly „uninteresting“ (inertia or persistence of non-income measures)
- Hulme and McKay (2005): Using assets as measure of chronic non-income poverty (useful but not an outcome measure);
- Grosse, Harttgen, Klasen (several papers 2005/06): Tracking distributional pattern of growth in non-income dimensions (but would need to be extended to panel data dropping anonymity);

Literature Review

- D'Ambrosio et al. (two papers 2006):
Conceptualizing social exclusion as chronic relative or absolute deprivation in a multidimensional well-being indicator;
- Baulch and Masset (2003): Empirical approach to studying non-income dimensions of poverty over time, also using Vietnam. Key finding: income and non-income dimensions tell a different story largely due to static differences.

Conceptual and Measurement Issues

- Studying Non-income poverty by considering Sen's capability approach in a dynamic setting.
Advantages:
 - Tracking well-being outcomes
 - Individual level (income at household level) and including intras-household dynamics
 - Ease of measurement (including on past dynamics)
 - Comparison to income dimension (and helps understand static differences). Formally assess relation using micro growth OLS, TSLS, and quantile regressions in income and non-income dimensions.

Table 1: Chronic and Transitory Income and Non-Income Poverty in a Two Period Panel

		SECOND PERIOD			
F I R S T P E R I O D		Inc. Poor Non-Inc. Poor	Inc. Poor Non-Inc. Non-Poor	Inc. Non-Poor Non-Inc. Poor	Inc. Non-Poor Non-Inc. Non-Poor
	Inc. Poor Non-Inc. Poor	Chronic Chronic (1)	<i>Chronic Transient (2)</i>	<i>Transient Chronic (3)</i>	Transient Transient (4)
	Inc. Poor Non-Inc. Non-Poor	<i>Chronic Transient (5)</i>	<u>Chronic Non-Poor (6)</u>	<u>Transient Transient (7)</u>	<i>Transient Chronic (8)</i>
	Inc. Non-Poor Non-Inc. Poor	<i>Transient Chronic (9)</i>	<u>Transient Transient (10)</u>	<u>Non Poor Chronic (11)</u>	<i>Chronic Transient (12)</i>
	Inc. Non-Poor Non-Inc. Non-poor	Transient Transient (13)	<i>Transient Chronic (14)</i>	<i>Chronic Transient (15)</i>	Non-Poor Non-Poor (16)

Problems

- Many indicators static over time or move just in one direction (e.g. education, disability, adult height)
- But:
 - Might be precisely what we are after
 - Problems with indicators
 - Might want to focus on children
 - More dynamics than presumed
- Data problems with current instruments
- Definitional problems (e.g. what is chronic non-income poverty among children?)

Approach

- Focus on health, education, and nutrition of individuals;
- Define 2 poverty lines for each measure (but otherwise ignoring depth/severity at this point);
- Chronic non-income poverty: non-income poor in both periods;

Data and Indicators

- VLSS 1992/93 and 1997/98 (panel)
- Income poverty: per capita household consumption below official (food-based) poverty line
- Nutrition poverty:
 - below 18: Stunting Z-score (noisy indicator)
 - Adults: BMI cut-off
- Health poverty: recently ill from a list of diseases (problematic)
- Education poverty:
 - Adults: years of schooling cut-off
 - Children: out of school or progressing too slow.

Exploratory Analyses

- Income and non-income poverty rates and identified individuals: overlap and differences (with and w/o scaling poverty lines);
- Intrahousehold dynamics of non-income poverty;
- Does static non-income poverty help predict chronic income poverty?
- Chronic poverty related to dimensions of poverty in initial period?

Results

Table 2: Poverty Rates and Dynamics

	Income			Nutrition			Health			Education		
	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child
Poor 1992	61.5	56.6	69.7	43.2	33.6	54.9	28.5	31.6	26.6	58.1	64.1	29.4
Poor 1997	34.2	31.2	40.3	34.5	30.9	41.5	25.9	28.1	25.0	49.7	57.9	17.7
Chronic Poor	31.4	27.8	38.2	26.0	23.0	32.6	7.3	11.0	8.3	43.7	57.9	14.6
Transient Poor	33.0	32.2	33.6	25.8	18.6	29.7	35.9	37.8	36.1	15.0	6.2	32.9
Non-Poor	35.6	40.0	28.2	48.2	58.4	37.7	57.8	51.2	56.6	31.3	35.9	52.5

Transient poverty vs. escape from poverty; less progress and (relatively) more chronic poverty in nutrition and education; high churning in health.



Due to different poverty levels? Partly, but mostly different dynamics.

Table 3: Poverty Dynamics using Fitted Income Poverty Rates

	Income			Nutrition			Income Adjusted to Nutrition Poverty Rates					
	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child
Poor 1992	<u>61.5</u>	56.6	69.7	<u>43.2</u>	33.6	54.9	<u>43.2</u>	38.5	49.0	<u>43.2</u>	38.5	48.9
Poor 1997	<u>34.2</u>	31.2	40.3	<u>34.5</u>	30.9	41.5	<u>34.5</u>	31.5	38.1	11.5	10.1	13.2
Chronic Poor	31.4	27.8	38.2	26.0	23.0	32.6	26.4	22.9	30.5	10.4	8.8	12.2
Transient Poor	33.0	32.2	33.6	25.8	18.6	29.7	25.1	24.2	26.2	34.2	31.0	37.9
Non-Poor	35.6	40.0	28.2	48.2	58.4	37.7	48.5	52.9	43.4	55.4	60.2	49.9

Note: In the first set of adjusted poverty rates we adjust the income poverty rate to the nutritional poverty rate in both years, while in the second adjustment we adjust it only to nutritional poverty in the first year and then inflate it with the inflation rate implied by the official poverty line change between 1992 and 1997.

Due to individual rather than household-based analysis?

Table 4 : Household Poverty Rates and Dynamics (adults only)

	Income Poverty Line		Nutrition Poverty	
	Household ^{b)}		Individual ^{a)}	Household ^{b)}
Poor 1992		56.6	33.6	25.7
Poor 1997		31.2	30.9	21.6
Chronic Poor		27.8	23.0	14.5
Transient Poor		32.2	18.6	18.9
Non-Poor		40.0	58.4	66.6

Notes: ^{a)} Poverty Rates refer to the individual Body Mass Index (BMI). ^{b)} Poverty Rates refer to per capita average household consumption and BMI respectively. Rates only for adults of age 18+.



Table 5 : Correlation of Income and Non-Income Dynamics

	Total			Adults			Children		
	Nutrition								
Income	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor
Chronic	33.5	27.5	39.0	27.3	19.3	53.4	42.0	30.4	27.6
	40.5	33.4	25.4	32.6	28.4	25.2	49.3	39.2	28.0
Transient	26.9	27.5	45.6	25.0	20.0	55.0	31.9	31.5	36.6
	34.2	35.3	31.3	35.0	34.6	30.4	33.1	35.9	32.9
Non-Poor	18.5	22.6	58.9	18.4	17.2	64.4	20.6	26.6	52.8
	25.3	31.2	43.4	32.3	37.0	44.5	17.6	25.0	39.1
	Health								
Income	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor
Chronic	9.3	36.7	54.0	10.9	38.3	50.8	8.7	36.3	55.0
	31.5	32.1	33.7	27.6	28.2	27.6	40.1	39.5	37.1
Transient	9.6	35.3	55.1	11.6	37.5	50.9	8.2	34.5	57.3
	34.1	32.5	34.4	34.0	32.0	32.1	33.4	33.1	34.0
Non-Poor	9.0	35.7	55.3	10.6	37.8	51.7	7.8	34.1	58.1
	34.4	35.4	31.9	38.4	39.8	40.3	26.5	27.4	28.9
	Education								
Income	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor
Chronic	49.8	18.7	31.6	66.3	5.8	28.0	20.7	41.5	37.9
	33.2	36.4	22.2	31.7	25.7	21.6	45.3	40.4	23.1
Transient	43.4	15.8	40.9	58.1	7.6	34.3	15.0	31.5	53.5
	32.8	34.9	32.6	32.5	39.9	30.8	35.3	33.0	35.1
Non-Poor	39.3	11.3	49.3	51.9	5.3	42.8	8.5	26.1	65.4
	34.1	28.7	45.1	35.9	34.4	47.6	19.5	26.6	41.7

Highest overlap income-childhood nutrition, lowest income-health

Table 6: Correlation of Fitted Income and Non-Income Dynamics

	Nutrition			Health			Education		
Income	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor
Chronic Poor	34.3	27.9	37.7	9.1	36.2	54.8	41.0	18.1	40.9
Transient Poor	27.9	26.9	45.3	9.6	36.3	54.1	38.5	14.7	46.8
Non-Poor	20.4	24.1	55.5	9.2	35.7	55.1	35.3	10.4	54.3

Finding not affected by different poverty levels.

Table 7: Correlation of Static Income and Non-Income Poverty

	1992		1997	
	Poor	Non-Poor	Poor	Non-Poor
Income	Nutrition			
Poor	29.9	31.6	14.5	19.9
Non-Poor	13.3	25.3	20.1	45.7
Income	Health			
Poor	17.0	44.5	9.0	25.2
Non-Poor	11.4	27.0	16.9	44.8
Income	Education			
Poor	31.3	27.9	17.0	16.8
Non-Poor	18.7	22.1	26.7	39.5

Static correlation surprisingly weak (Baulch and Masset, 2003)

Just focus on those with no static disagreement in first period

Table 8: Correlation of Income and Non-Income Dynamics

Only initial poor / non-poor in both income and non-income dimension

	Nutrition			Health			Education		
Income	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor	Chronic	Transient	Non-Poor
Chronic Poor	65.3	34.7	<u>0.0</u>	32.4	67.6	<u>0.0</u>	87.9	12.1	<u>0.0</u>
Transient Poor	52.9	38.2	8.9	28.6	56.3	15.1	80.9	15.0	4.1
Non-Poor	<u>0.0</u>	11.4	88.6	<u>0.0</u>	21.9	78.1	<u>0.0</u>	12.1	87.9

Now close correlation (esp. Among non-poor); but many transient income remain remain chronic non-income poor (lags?)

Role played by intrahousehold differences

Table 9: Intra-household Poverty Dynamics

	Nutrition			Health			Education		
	Total	Adults	Child	Total	Adults	Child	Total	Adults	Child
Income									
(a) All Chronic	2.5	7.1	13.7	1.0	2.8	3.1	9.1	37.7	2.2
(b) All Transient	1.4	4.5	9.5	5.3	15.2	16.0	0.1	1.1	10.3
(c) All Non-Poor	11.7	34.5	20.7	16.7	28.1	36.7	14.8	18.0	53.1
(d) Transient & Chronic	6.8	6.9	18.8	7.1	9.0	7.0	10.9	5.8	2.7
(e) Transient & Non-Poor	22.4	18.9	16.2	48.6	34.6	31.7	8.2	3.4	28.1
(f) Chronic & Non-Poor	55.3	28.1	21.1	21.3	10.4	5.6	56.8	34.0	3.7
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Amazingly low intra-household correlation between income and non-income measures (and for individual non-income indicator).

Systematic effect between generations of adults?

Table 10: Intergenerational Chronic Poverty

	1992			1997		
	Income	Nutrition	Education	Income	Nutrition	Education
Poverty Generation 1	52.4	27.2	73.9	31.1	24.4	67.6
Poverty Generation 2	52.4	27.7	64.8	31.1	22.6	55.5
Both Poor	52.4	13.4	61.9	31.1	8.9	50.7
Poor/Non-poor	0.0	41.4	29.9	0.0	34.8	31.9
Both Non-Poor	47.6	45.3	8.2	69.9	56.4	17.4

Significant differences between generations (some expected, e.g. education), large differences despite similar levels (nutrition)

Table 11: Chronic Poverty as Multidimensional Poverty

1992	1997			
	non dimensional	one dimensional	2-3 dimensional	4 dimensional
Non dimensional	7.3	3.4	0.7	0.0
one dimensional	8.3	13.5	6.5	0.0
2-3 dimensional	4.9	17.6	31.9	1.5
4- dimensional	0.0	0.5	3.2	0.5

Note: Non dimensional poverty refers to individuals who are poor in non of the analyzed well-being dimensions (income, nutrition, health and educational well-being). Accordingly one, 2-3 and 4-dimensional poor refers to individuals, who are poor in one, 2 & 3 or all 4 dimensions.

Number of dimensions rather stable (dimensions change but not their number: substitution between dimensions?)

Tentative Conclusions

- Clear conceptual advantages to consider chronic poverty from non-income perspective;
- More non-income poverty dynamics than presumed;
- Low correlation in chronic poverty between income and non-income dimensions (mostly due to low static correlation and high intra-household dynamics in non-income poverty);
- Surprisingly low correlation of non-income poverty within households;
- Number of dimensions of deprivation stable over time (but dimensions themselves change).

Questions and further research

- Study determinants of income and non-income poverty;
- Continuous rather than discrete analysis;
- Examine relationship at different parts of the conditional distribution;
- Many robustness checks needed.
- Correlations between non-income dimensions.
- How much driven by Vietnam's unusual circumstances?