

Poverty prospect as measure of vulnerability: the case of Indonesia

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Indonesia (a middle income country) and Cambodia (a low-income country)

INDONESIA HIGH VULNERABILITY TO POVERTY?

GNI per capita, PPP (2011 international \$)

GNI per capita, Atlas method (current US\$)

Poverty incidence at national pov. lines (% of pop.)

Poverty incidence at \$1.90 a day (2011 PPP, % pop.)

Poverty incidence at \$3.10 a day (2011 PPP, % pop.)

Prevalence of stunting (% of children under 5)

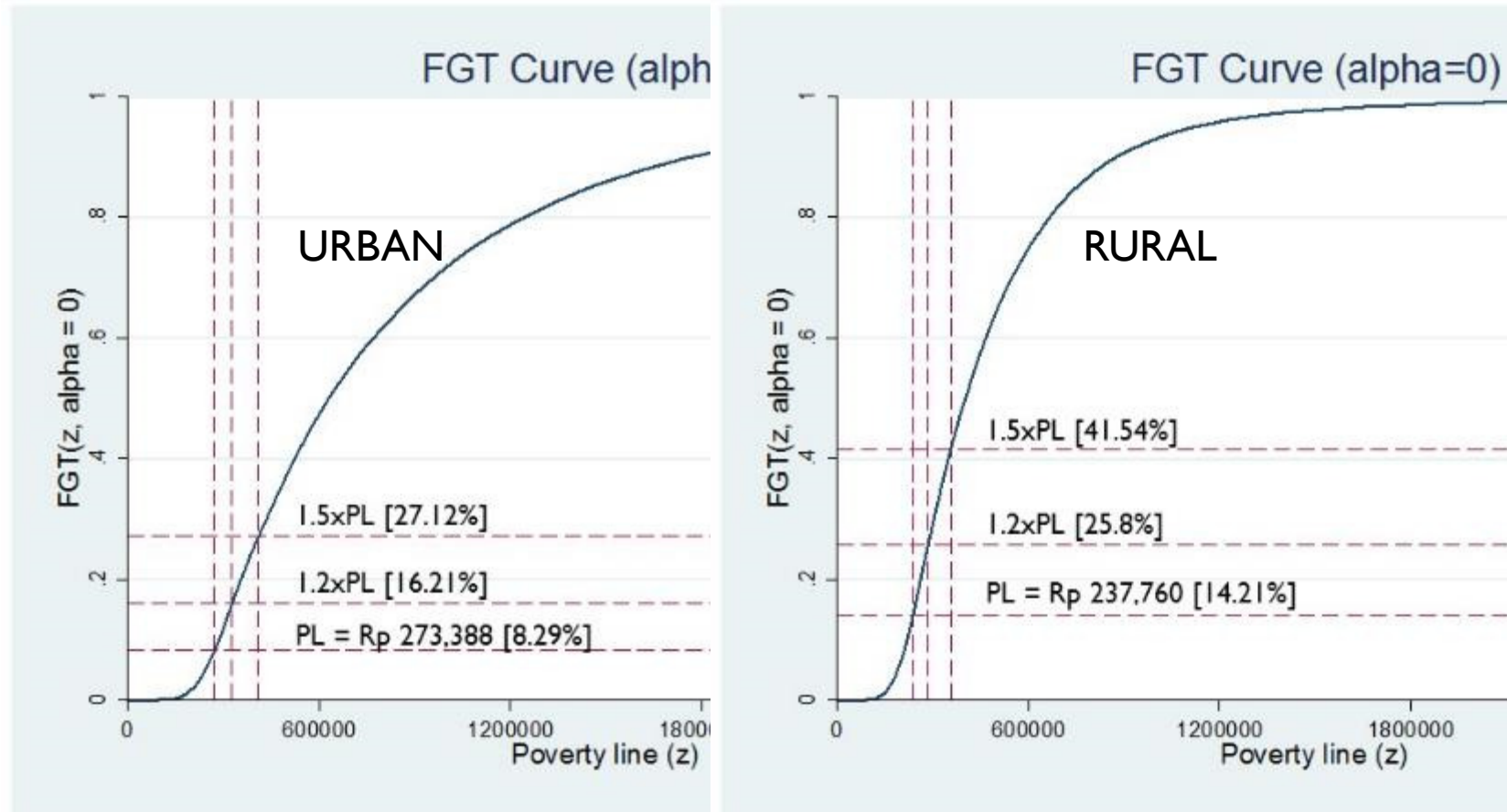
Prevalence of severe wasting (% of children under 5)

Prevalence of wasting (% of children under 5)

	INDONESIA				CAMBODIA			
	2010	2012	2013	2014	2010	2012	2013	2014
GNI per capita, PPP (2011 international \$)	8,234	9,017	9,394	9,725	2,397	2,647	2,777	2,924
GNI per capita, Atlas method (current US\$)	2,530	3,580	3,740	3,630	750	880	960	1,020
Poverty incidence at national pov. lines (% of pop.)	13.3	12.0	11.4	11.3	22.1	17.7		
Poverty incidence at \$1.90 a day (2011 PPP, % pop.)	15.9				10.0	6.2		
Poverty incidence at \$3.10 a day (2011 PPP, % pop.)	46.3	41.7			42.4	37.0		
Prevalence of stunting (% of children under 5)	39.2		36.4		40.9			32.4
Prevalence of severe wasting (% of children under 5)	5.4		6.7		2.8			2.3
Prevalence of wasting (% of children under 5)	12.3		13.5		10.8			9.6

Source: WB-WDI

Indonesia's high vulnerability to poverty



Sumber: SUSENAS 2012 (Author's calculation)

Every 1% increase in rice price, another 300,000 people become poor, ceteris paribus.

Poverty prospect's policy relevances

- Existing social assistance targeting:
 - Some programs (e.g. rice for the poor) target not only the 'officially' poor but the 'vulnerable' ~ the first 3 deciles.
 - Some other target the very poor (CCT) ~ 5% poorest.
- Given limited longitudinal-data (poverty dynamics), poverty prospects may improve different targeting for the poor and vulnerable and devise specific policies.

Literature

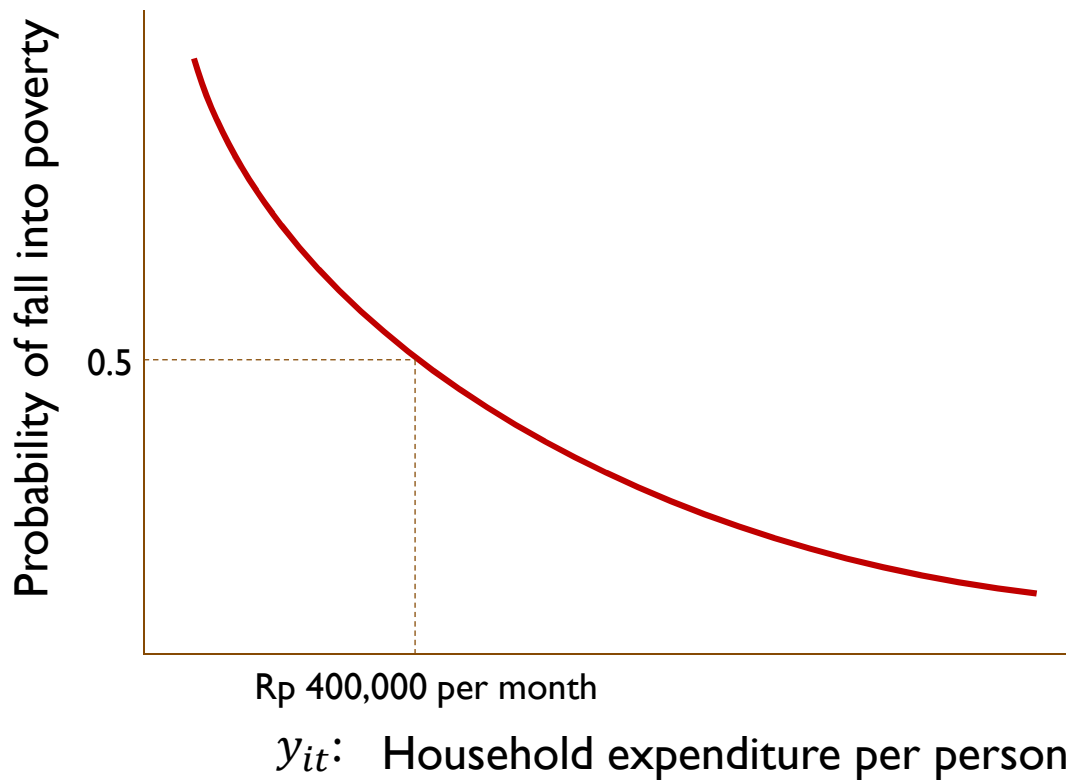
- Most studies on poverty vulnerability in Indonesia are snapshot of brief period
- Mostly the periods of the Asian Financial Crisis and its aftermath
- Empirics:
 - Pritchett et al., (2000): 10-30% are vulnerable
 - Strauss et al. (2004a): High transient poverty
 - Dartanto and Nurkholis (2013): 7% of non-poor households were vulnerable

Objectives

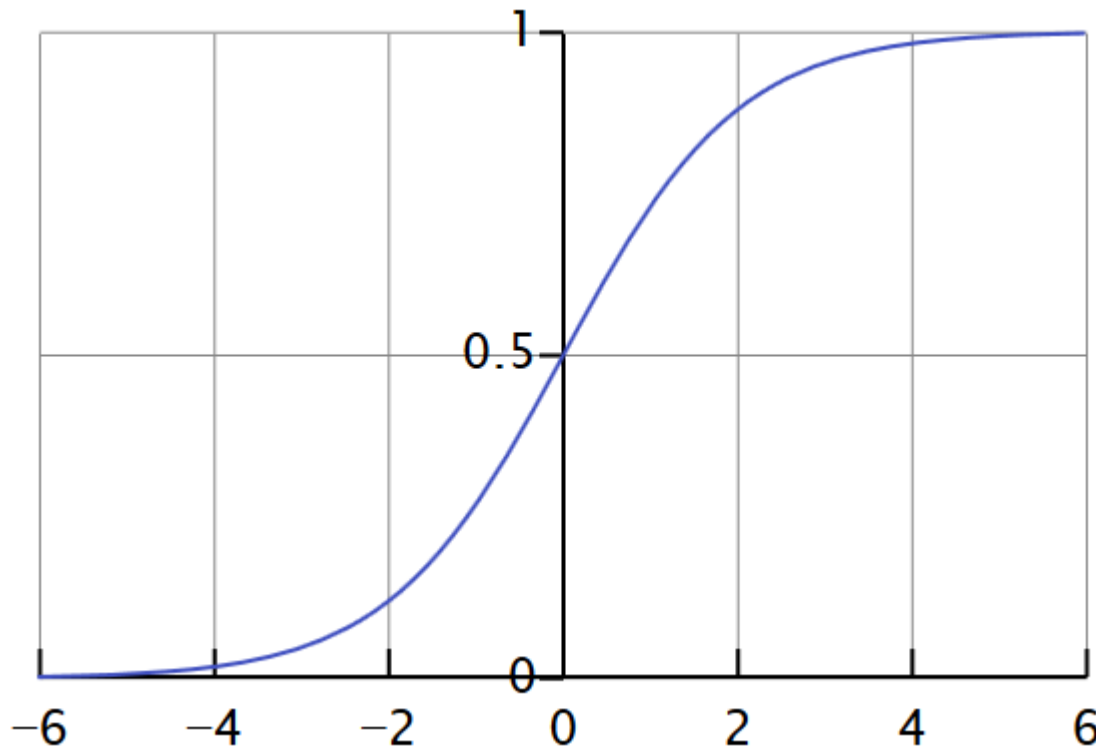
- What are the determinants of poverty prospects.
- To estimate (the range of) Indonesian poverty vulnerability 1993-2013 (20 years) using the poverty prospect approach.

Approach

Based on López-Calva, L.F. and E. Ortiz-Juarez (2011, LCOJ)



Logistic model



$$p(z) = \frac{1}{1 + e^{-z}}$$

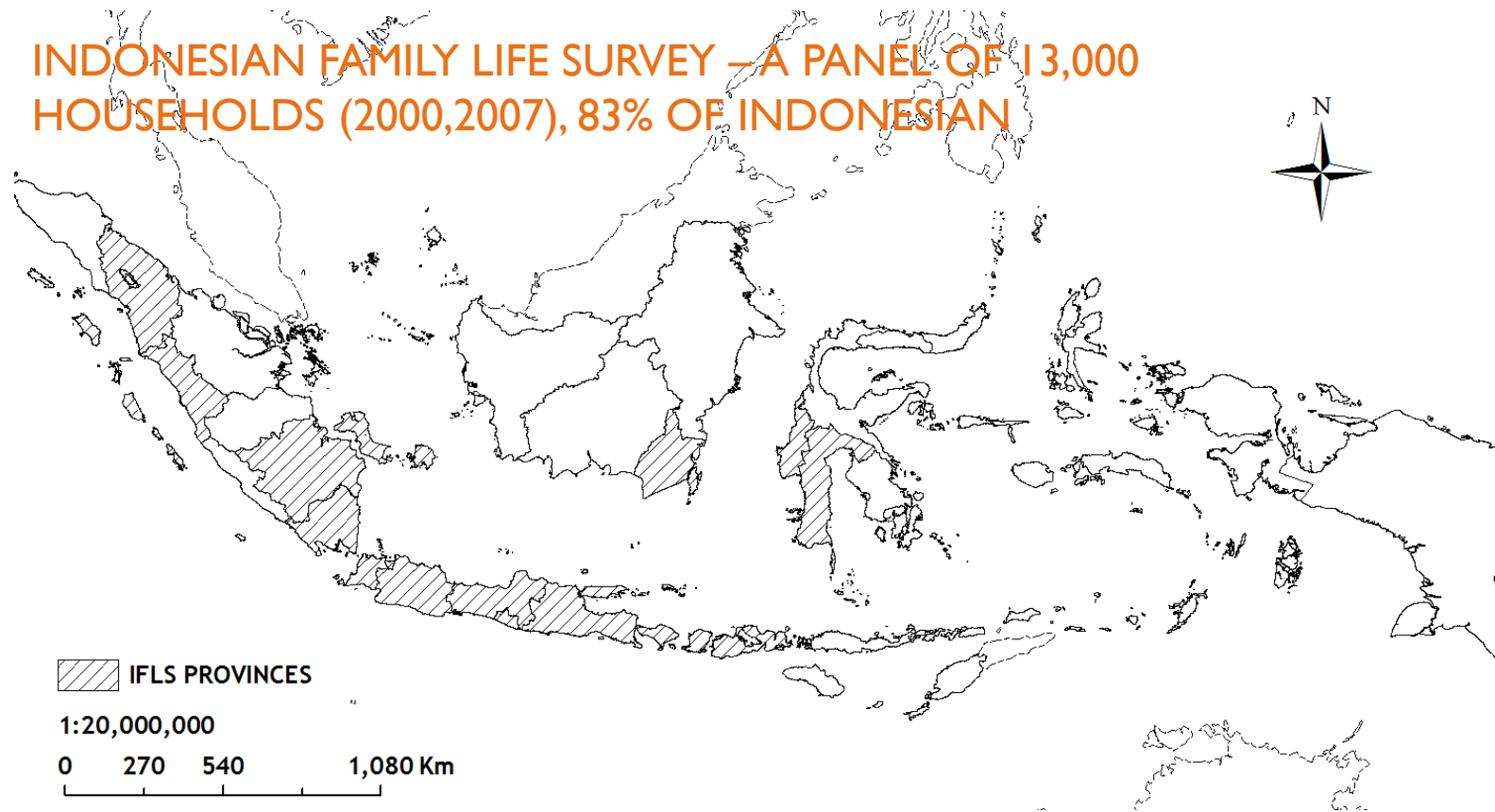
x 's:

education, age, gender,
health insurance,
house quality, marital
status, sanitation, asset,
sector of employment,
regions, household
size, shocks

$$z = a_0 + a_1x_1 + \cdots + a_nx_n$$

Data

INDONESIAN FAMILY LIFE SURVEY – A PANEL OF 13,000
HOUSEHOLDS (2000,2007), 83% OF INDONESIAN



+ SUSENAS 2000-2013

Poverty transitions for various poverty lines (distribution of households, % total)

		NPL	1.2*NPL	\$1.25	\$2	\$4	\$5
2000	2007						
Poor	Poor	19.42	28.86	24.26	48.12	79.84	86.54
Non-Poor	Non-Poor	95.61	92.58	94.12	83.58	59.51	54.96
Poor	Non-Poor	80.58	71.14	75.74	51.88	20.16	13.46
Non-Poor	Poor	4.39	7.42	5.88	16.42	40.49	45.04

REGRESSION RESULTS

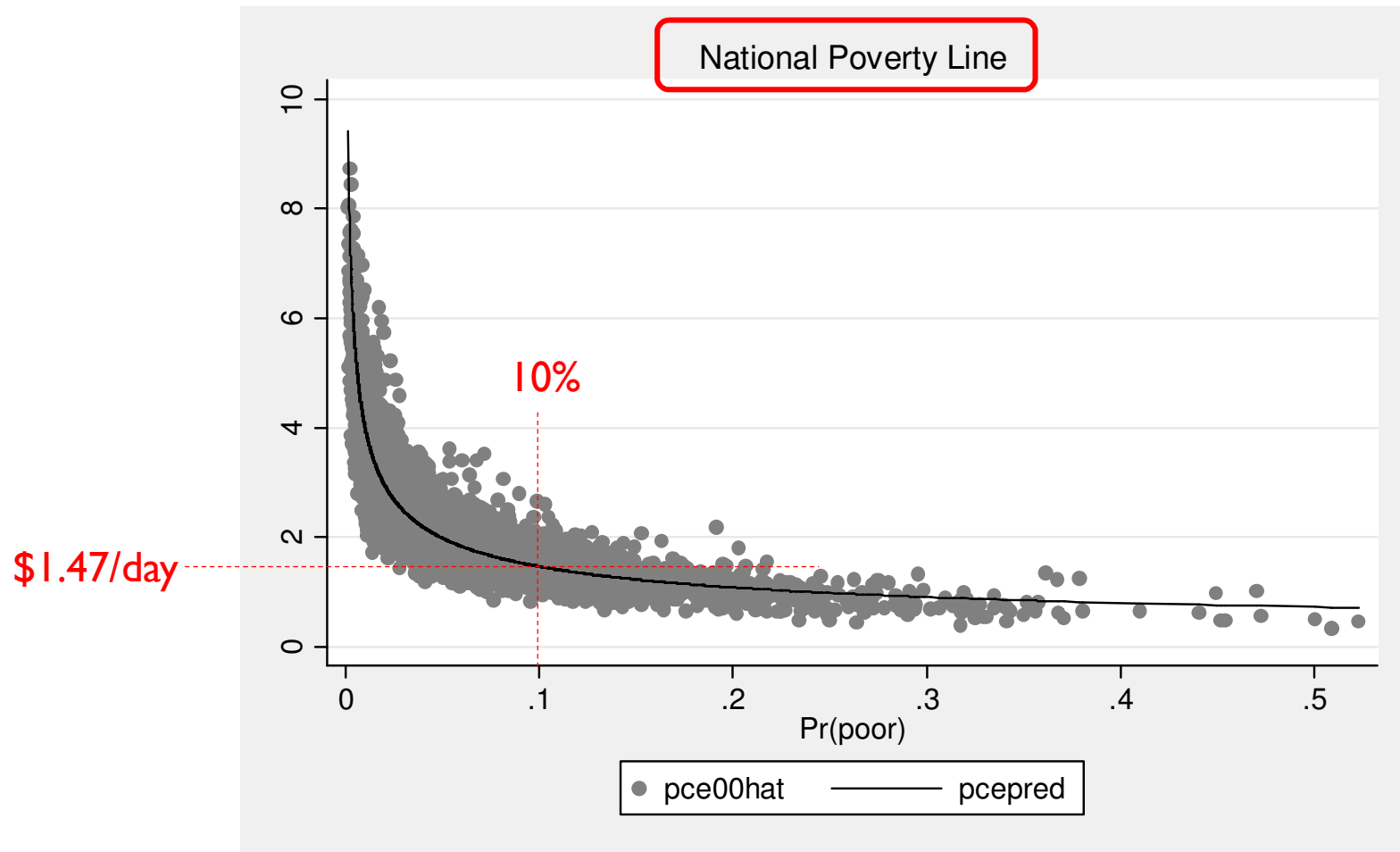
Model	Logistic	Linear
Dependent variable	Poverty	Log of exp. per person
Education of the head	-0.238***	0.089***
Age of the head	-0.060***	0.012***
Age squared of the head	0.001***	-0.000***
✗ Sex of the head (1=male)	-0.028	0.132**
Head without health insurance	0.703**	-0.084***
Unfinished floor	0.427***	-0.123***
✗ Head married	-0.188	-0.101
Household without sanitation	0.181	-0.110***
Log of asset per capita	-0.287***	0.155***
✗ Head in agriculture, forestry, fishing and hunting	-0.104	-0.014
✗ Head in mining and quarrying	0.750	-0.004
✗ Head in manufacturing	0.101	0.018
✗ Head in electricity, gas and water	-0.139	0.285**
Head in wholesale, retail, restaurants and hotels	-0.618**	0.174***
✗ Head in transportation, storage and communications	-0.336	0.048
✗ Head in finance, insurance, real estate and business services	0.636	0.193*
Head in social services	-0.426*	0.129***
Sumatra	-0.538***	0.080***
✗ Kalimantan	-0.320	0.032
✗ Sulawesi	-0.044	-0.035
Household size in 2000	0.128***	-0.105***
✗ Occurrence of death	-0.249	0.004
✗ Occurrence of sickness	-0.241	0.062***
✗ Occurrence of crop loss	-0.117	-0.060***
✗ Occurrence of natural disasters	-0.050	0.258***
✗ Occurrence of loss a job or business failure	0.050	0.040
✗ Occurrence of decrease of household expenditure	-0.004	0.039
Constant	2.604***	6.269***
Number of observations	6,355	6,355
Pseudo R2 (or R2)	0.099	0.398

✗ Not associated with property prospect

Highlight from regressions results

- Capital (human, physical, financial) is important determinants of poverty prospect.
- Age reduces vulnerability to poverty but non-linearly
- Other demography (sex, marital status) is not important.
- Being employed in selected services sectors reduce vulnerability
- Exposure to shocks is not associated with vulnerability - temporary

Result: threshold expenditures



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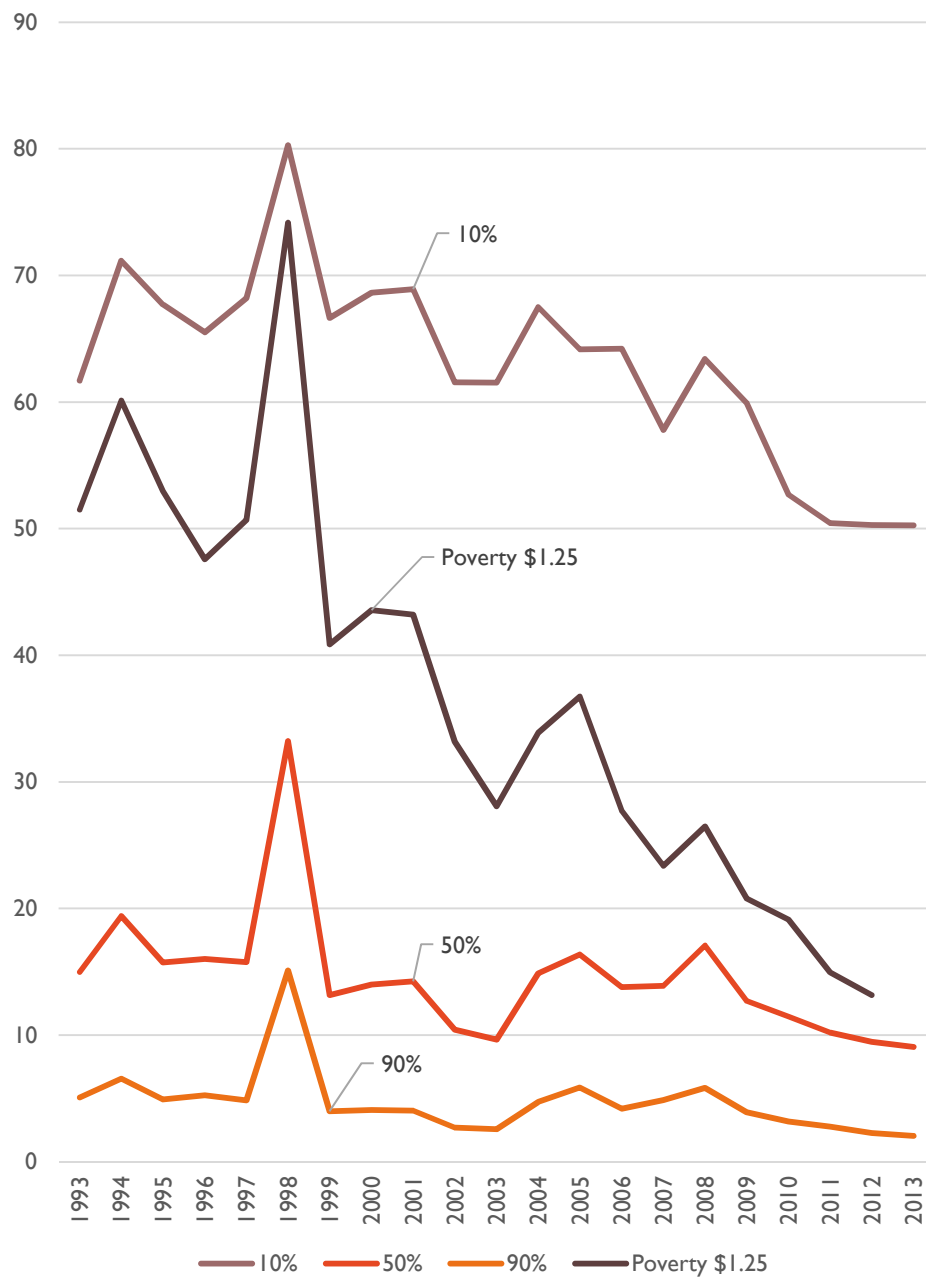
Table 5 Threshold expenditures for 0.1, 0.5 and 0.9 probability of poverty by various poverty lines

Poverty line	National poverty line	1.2* National poverty line	US\$1.25/day PPP	US\$2/day PPP	US\$4/day PPP	US\$5/day PPP
Probability	<i>Rupiah</i>					
0.1	3,944.44	5,259.10	4,802.74	9,448.05	22,496.04	35,023.20
0.5	1,961.85	2,516.59	2,320.31	3,970.70	9,449.69	12,775.75
0.9	1,520.16	1,922.69	1,778.94	2,893.17	3,969.44	4,660.33
	<i>US\$PPP</i>					
0.1	1.47	1.96	1.79	3.52	8.37	13.03
0.5	0.73	0.94	0.86	1.48	3.52	4.75
0.9	0.57	0.72	0.66	1.08	1.48	1.73

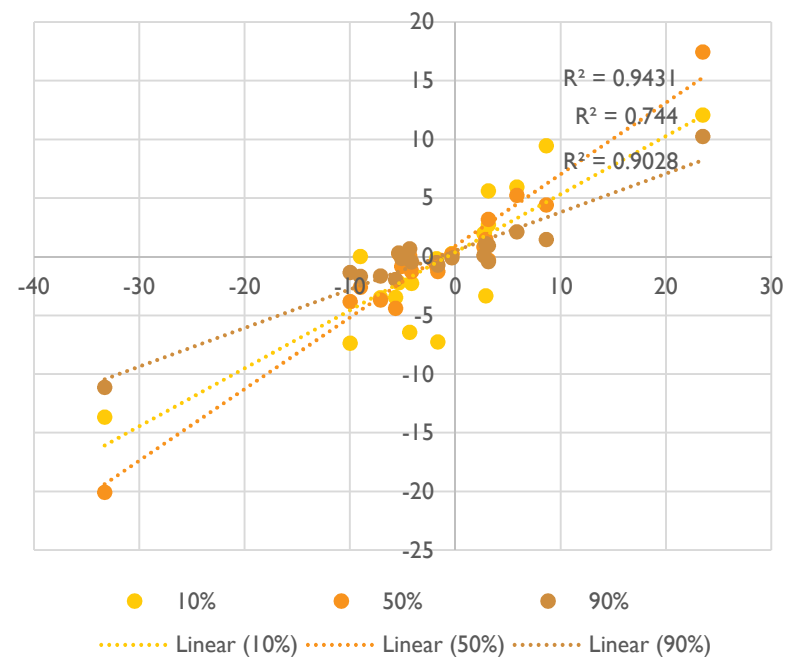
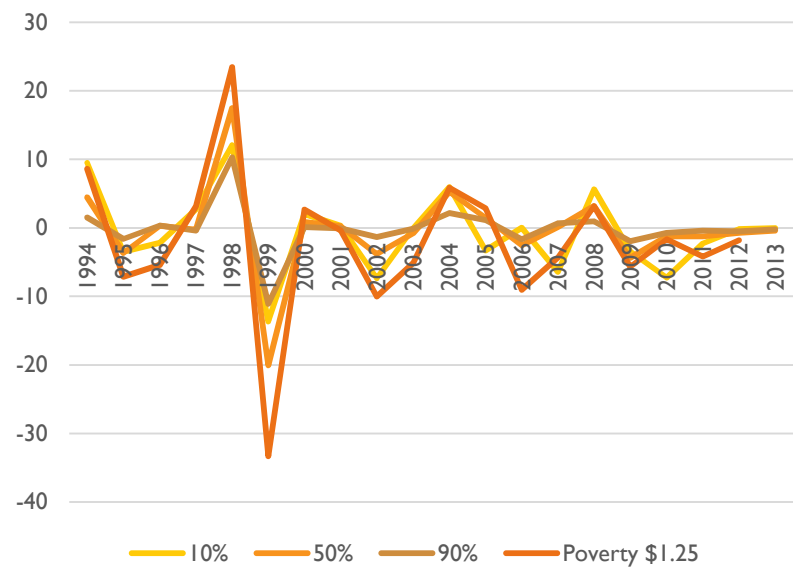
Source: Authors' estimations.

Similar threshold to
LCOJ (2011)

Poverty (at \$1.25) and vulnerability (prospect)



Change



Concluding remarks

- Indonesia may have a very high vulnerability to poverty. Most of the poor are transient.
- Capital (human and others) ownership, are among the strongest determinant of poverty prospects.
- Poverty prospect approach: complementary tools for optimal social targeting?
- Poverty prospect (vulnerability) has been falling slower than the fall in poverty incidence