Ten years of *strategizing* for poverty reduction: A cross-sectional appraisal of PRSP performance

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Outline

- The PRSP "Project" & the surrounding controversy
- Research rationale & objectives
- Approach & methods
- Results
  - Statistical testing
  - Regression results
- Conclusions

The "PRSP Project"

- Launched 1999
  - Claimed path breaking, links to the new aid agenda
  - Political & technical imperatives
- PRSP = a national strategic plan, supported by an IFI Initiative
- Objective – poverty reduction via *pro-poor* growth
  - But avoids definitional debate
- Attempts to address the principal-agent problem inherent in concessional lending
  - Replaces *conditionality* with *national ownership*
  - Gains to be via *better & better fitted* policies
- Extensive coverage – became the primary IFI "product"

Controversies

Degree of IFI control versus national ownership & commitment?

- New conditionality or "Policy ventriloquism"?
- Note:
  - PRSP preparation is a regulated process
  - PRSPs constructed after a series of interactions, concluding with JSA approval
- Policy tutelage in this process *inevitably* based on a Washington policy consensus
  - A new but narrow agenda?
- More radically: Are PRSPs merely a facade for structural adjustment?

Our rationale & objectives

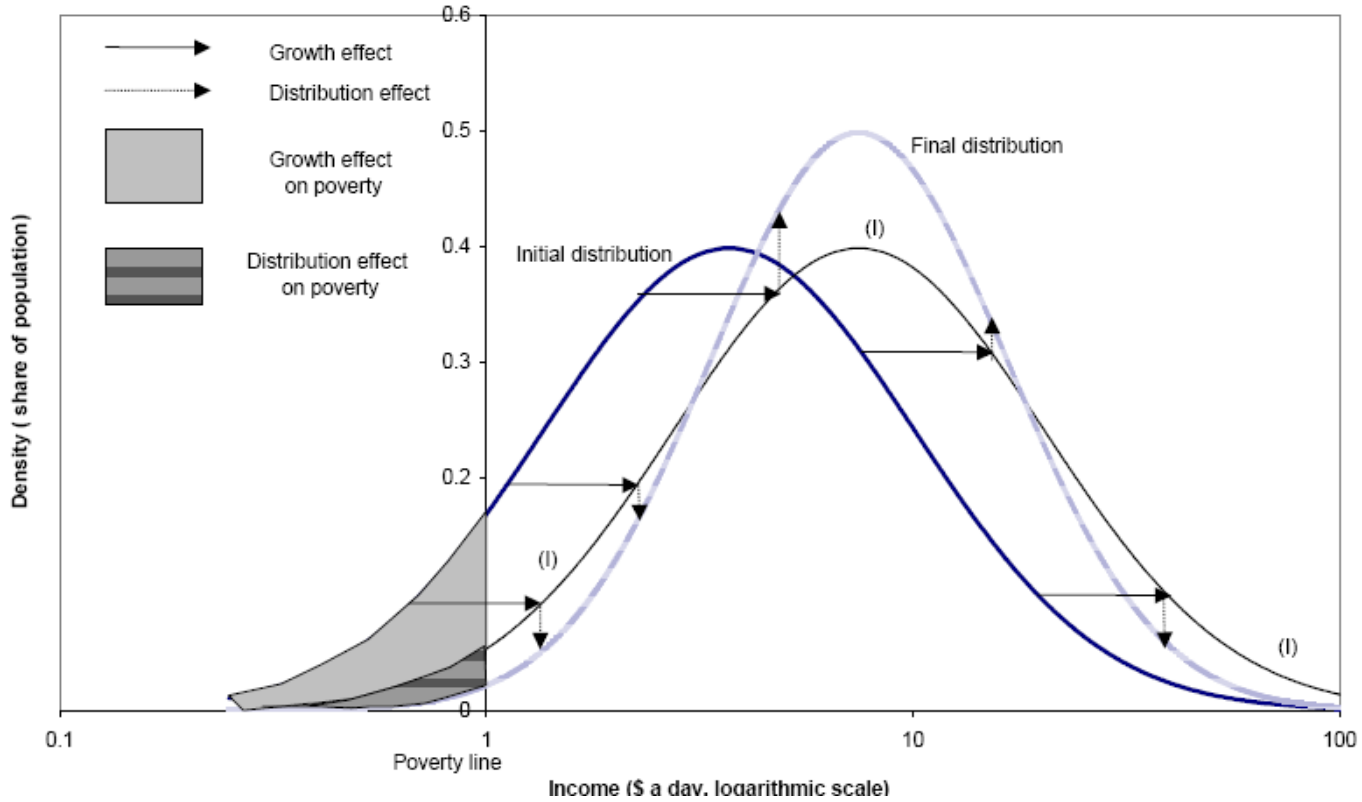
- Very limited appraisal literature, surprising given controversy
- IFIs dismissive of possibilities for *general* evaluation – no sound counterfactual
- Key question: Has PRSP adoption made a difference to country performance?
- Specifically to:
  - Poverty reduction or its proximate drivers - growth & inequality changes?
- What is the nature of the PR process?
  - Can anything be said about the policy orientation of PRSPs?
  - Are they simply a new form of structural adjustment?

Approach & Methods

- PRSP adoption identified as a *treatment* effect
- Counterfactual approach using pooled data to compare with-without and before-after
  - Bespoke panel datasets of adopters & non-adopters
  - National poverty line & dollar-a-day line data
- Approach was expansive & exhaustive
- Progressively more sophisticated appraisal methods applied:
  - Statistical tests to establish whether an apparent relationship existed
  - Panel regressions, IV where possible, to check robustness

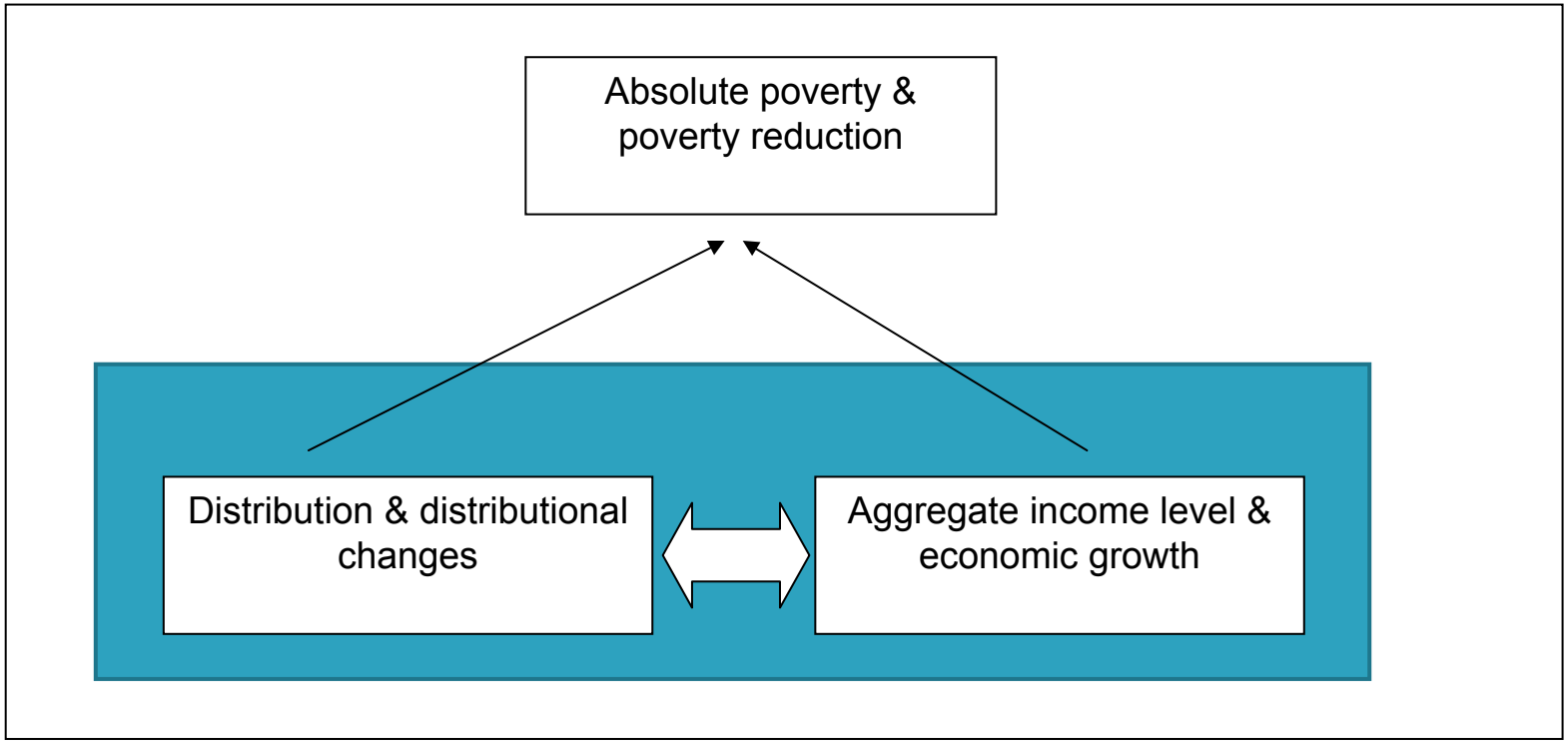
Core Relation

- Poverty reduction is a function of growth & greater equity
- $\Delta P = P_t - P_{(t-1)} = \Delta P_G + \Delta P_I$



Poverty-growth-inequality Triangle

- Bourguignon (1999): Policy choices & process (the blue box) mediate the growth process
- Hence can view PRSP-adoption as a treatment effect within the core relation



Data

- 2 panels:
- National sourced from primary materials,
- Dollar-a-day from Povalnet database (WB)
  - Missing data, unbalanced panel, reformatting needed
  - 68 countries, 12 years from 1996
- Complications
  - Only 28 of 63 PRSP-adopters' data of sufficient quality
  - Serious consistency & comparability issues – especially national panel
- Summary outcomes: evidence of superior PRSP performance
  - Starting point for investigation

Statistical Testing

- Comparison of mean differences
  - Based on poverty reduction episodes in both panels
  - Red text indicates significant results
- Restricted sample constructed using propensity score matching methods
  - Probability of selection into treatment
- Primary variables – poverty reduction, growth distribution (& growth elasticity of poverty)
- Plus stabilization outcomes - BOP equilibrium, CPI

Poverty reduction

Category	Non-PRSP Mean Change [Standard deviation]	PRSP Mean Change [Standard deviation]	Overall Mean Change [Standard deviation]	Difference in means [t Statistic]	Probability Diff>0 [Diff≠0]
National Panel -Full Sample -Restricted	 -0.90 [2.99] -1.09 [2.93]	 -1.75 [3.22] -1.75 [3.22]	 -1.17 [3.07] -1.39 [3.06]	 0.85 [1.14] 0.66 [0.79]	 0.13 [0.26] 0.22 [0.43]
Dollar a day Panel -Full Sample** -Restricted*	 -0.34 [2.19] -0.37 [3.20]	 -1.49 [2.70] -1.49 [2.70]	 -0.58 [2.33] -0.80 [3.04]	 1.16 [2.17] 1.12 [1.67]	 0.02 [0.04] 0.05 [0.10]

Growth Outcomes

Category	Non-PRSP Mean Change [Standard deviation]	PRSP Mean Change [Standard deviation]	Overall Mean Change [Standard deviation]	Difference in means [t Statistic]	Probability Diff>0 [Diff≠0]
National Panel					
-Full Sample***	2.45 [3.70]	5.38 [5.24]	3.36 [4.43]	-2.94 [-2.93]	0.00 [0.00]
-Restricted**	3.02 [5.24]	5.38 [5.24]	4.11 [4.77]	-2.36 [-1.86]	0.03 [0.07]
Dollar a day Panel					
-Full Sample*	3.29 [4.49]	4.88 [5.05]	3.63 [4.64]	-1.59 [-1.57]	0.06 [0.12]
-Restricted	3.38 [5.41]	4.88 [5.05]	3.95 [5.30]	-1.50 [-1.25]	0.11 [0.12]

Inequality

Category and significance level	Non-PRSP Mean Change [Standard deviation]	PRSP Mean Change [Standard deviation]	Overall Mean Change [Standard deviation]	Difference in means [t Statistic]	Probability Diff<0 [Diff≠0]
National Panel -Full Sample -Restricted	 0.05 [1.25] 0.11 [1.40]	 0.06 [1.41] 0.06 [1.41]	 0.05 [1.29] 0.09 [1.39]	 -0.01 [-0.04] 0.05 [0.14]	 0.48 [0.97] 0.55 [0.89]
Dollar a day Panel -Full Sample -Restricted	 0.03 [1.19] 0.07 [1.56]	 0.12 [1.26] 0.12 [1.26]	 0.50 [1.20] 0.09 [1.44]	 -0.93 [0.37] -0.50 [-0.15]	 0.36 [0.72] 0.44 [0.88]

Plus Stabilization Outcomes

- Separate dataset, rejects radical accounts

Category	Non-PRSP Deviation from period mean [Standard deviation]	PRSP Deviation from period mean [Standard deviation]	Overall Deviation from period mean [Standard deviation]	Difference in means [t Statistic]	Probability Diff>0 [Diff≠0]
Current account balance as % of GDP***	0.33 [4.13]	-1.29 [4.92]	-0.00 [4.35]	1.62 [4.23]	0.00 [0.00]
Consumer Prices Index (CPI)	-0.64 [43.3]	+2.30 [5.45]	-0.00 [38.47]	-2.94 [-0.89]	0.81 [0.37]

Summary

- Some evidence of a poverty benefit but restricted to dollar-a-day dataset
- Works through growth channel alone & no distributional gain
  - Is this pro-poor?
- Stronger evidence of a growth benefit of adoption
  - Appears in both panels
- No indication of structural adjustment bias
  - If anything reverse is true
- But testing is problematic for a host of reasons

Regression-based Appraisal

- Two standard approaches used:
  - First Differences (primary approach)
    - Uses a parsed 4 periods to provide a balanced panel
  - Fixed Effects
    - Uses the original unbalanced panel
- Two samples – full & excluding income-based data
- Both rely on a form of the standard relation – any effect given by PRSP adoption dummy variable
- IV attempted but only possible for FD
- Also interact PRSP dummy with growth/ inequality where effect found to examine causal channel

First Differences (FD) Estimator

- Basic model
  - Full & restricted (excluding income) samples
    - Δ P0= $\Delta\alpha$+ $\beta_1\Delta$ Inc + $\beta_2\Delta$ Gini + β_3 PRSP + β_4 Pr3+ β_5 Pr4+ u
- IV model
  - IVs: lagged debt levels - HIPC linkage
  - Sample restricted to periods 2 & 3
  - 1st stage (LPM):
    - Pr(PRSP)= α+β_1 ΔIFI Dbt_{t-1}+ $\beta_2\Delta$Bil Dbt_{t-1}+ β_3 ΔInc+ β_4 Gini+ β_5 Pr4+ u
  - 2nd stage:
    - Δ P0= α+ $\beta_1\Delta$ Inc + $\beta_2\Delta$ Gini + β_3 $\widehat{PRSP}$ + β_4 4+ u
- Interacted basic model also
    - Δ P0=α+ $\beta_1\Delta$ Inc+ $\beta_2\Delta$ Gini+ β_3(PRSP*ΔInc)+ β_4 (PRSP*ΔGini)+ β_5 Pr 3 + β_6 Pr 4+ u

First Differences Results

FD of Variable [t & F Statistic] Dependent variable = Poverty Rate	National data		Dollar-a-day data	
	FD OLS	FD OLS (Ex. Income)	FD OLS	FD OLS (Ex. Income)
Per capita income	-0.2339*** [-3.65]	-0.1860*** [-3.25]	-0.0817 [-1.23]	-0.9756 [-1.04]
Gini coefficient	+0.4576 [+1.59]	+0.3986 [+1.32]	+0.3393 [+1.36]	+0.2974 [+1.02]
PRSP adoption	-0.6018 [-0.85]	-0.1198 [-0.17]	-1.8752*** [-2.79]	-2.360*** [-3.10]
Period 3 dummy	+0.2797 [0.39]	-0.2583 [-0.36]	+0.5656 [+0.98]	+0.9459 [+1.11]
Period 4 dummy	+1.4362 [1.41]	+0.7932 [+0.86]	-0.0574 [-0.10]	+0.3823 [+0.50]
R squared	0.2105** [3.16]	0.1617** [2.57]	0.1200** [2.43]	0.1262* [2.07]
Observations	76	66	129	83

FD IV Results

FD of Variable [t & F Statistics] Dependent variable = Poverty Rate	National data		Dollar-a-day data	
	Comparable FD OLS	FD IV	Comparable FD OLS	FD IV
Per capita income	-0.2575*** [-3.58]	-0.2495*** [-3.33]	-0.0837 [-0.99]	-0.0922 [-0.99]
Gini coefficient	+1.0187*** [4.05]	+1.0277*** [3.93]	0.2574 [1.01]	0.2904 [0.83]
PRSP adoption	-0.4636 [-0.69]	-0.8649 [-1.35]	-1.9713*** [-2.85]	-2.1917 [-1.02]
Period 4 dummy	+1.1390 [1.56]	+1.0433 [1.49]	-0.6375 [-1.19]	-0.6880 [-1.16]
R^2	0.3985*** [7.40]	0.4017*** [7.69]	0.1797** [2.67]	0.1764 [1.33]
Observations	51	49	85	81

FD Interacted Results (US$ a day only)

FD of Variable [t and F Statistics] (Dependent variable = Headcount Ratio)	FD OLS Dollar-a-day
Index of per capita income (PCY)	-0.0086 [-0.20]
Gini coefficient	0.3963 [+1.33]
PRSP interacted with PCY	-0.2689* [-1.87]
PRSP interacted with Gini Coeficient	-0.3290 [-0.69]
Period 3 dummy	+0.2943 [0.50]
Period 4 dummy	-0.1770 [-0.27]
R^2	0.1283* [1.88]
Observations	129

Fixed Effects Estimator

- Something of a follow up – efficiency advantages over FD
- Basic model
  - In levels & time de-meaned
  - $(P0_{it}-\overline{P0}_i) = (\alpha-\bar{\alpha}) + \beta_1(Inc_{it}-\overline{Inc}_i) + \beta_2 (Gini_{it}-\overline{Gini}_i) + \beta_3 PRSP + \beta_n Yr\ n + u$
  - Full & restricted (excluding income) samples
- Interacted model
  - As for FD – treatment binary interacted with growth & Gini
- IV attempted but instruments too weak
  - Various forms & lags of debt levels tested
  - Potential endogeneity not controlled for

Fixed Effects Results

Variable (in levels) [t & F statistics] Dep variable = Poverty Rate	National data		Dollar-a-day data	
	FE OLS	FE OLS (Ex income)	FE OLS	FE OLS (Exc. Income)
Per capita income	-0.1852*** [-2.74]	-0.1631** [-2.49]	-0.0040 [-0.15]	-0.0096 [-0.24]
Gini coefficient	+0.1124 [+0.38]	+0.1375 [+0.44]	+0.1178 [+0.88]	-0.013 [-0.08]
PRSP adoption	-4.2841* [-1.92]	-3.0432 [-1.25]	-4.2664*** [-2.89]	-4.9580*** [-2.78]
2004 dummy	-0.6051 [-0.15]	-2.9503 [-0.72]	-3.6323** [-2.12]	-4.8225 [-1.78]
2005 dummy	-3.9578 [-1.14]	-5.651 [-1.41]	-2.4186* [-1.73]	-1.9489 [-0.75]
2006 dummy	-2.6908 [-0.71]	-2.6042 [-0.57]	-4.2340*** [-2.95]	-5.8336** [-2.31]
2007 dummy	+7.6660* [1.80]	+5.4047 [1.15]	-5.0344** [-2.07]	-6.6290** [-2.32]
Within R^2	0.3400*** [3.09]	0.3711*** [2.75]	0.2421*** [3.92]	0.2783*** [3.66]
Observations [Groups]	175 [58]	150 [48]	256 [63]	171 [49]

Interacted FE

Variable (in levels) [t & F Statistics] Dependent variable = Poverty Rate	National FE OLS	Dollar- a- day FE OLS
Per capita income	-0.2369*** [-2.94]	+0.0234 [+1.00]
Gini coefficient	+0.1495 [+0.49]	+0.1120 [+0.84]
PRSP interacted with income	+0.0464 [+0.83]	-0.0660** [-2.01]
PRSP interacted with Gini	-0.2211 [-1.24]	+0.1156 [+1.24]
1997 dummy	-2.211 [-0.61]	-2.3973* [-1.71]
2000 dummy	+0.4048 [+0.13]	-1.6795* [-1.74]
2004 dummy	-0.0652 [-0.02]	-4.4385** [-2.53]
2005 dummy	-3.6894 [-1.02]	-3.4061** [-2.42]
2006 dummy	-2.3138 [-0.61]	-4.900*** [-3.37]
2007 dummy	+7.1434* [+1.69]	-6.0921** [-2.87]
Overall R squared	0.101*** [3.08]	0.0067*** [3.69]
Observations [Groups]	175 [58]	256 [63]

Summary

- First Differences
  - 2 panels different, PRSP effect in dollar-a-day data only
  - But effect not present in IV results
  - Interacted results – supports growth as the poverty reduction channel
- Fixed Effects
  - Some effect evident within national data & dollar-a-day
  - No IV estimation possible (sadly)
  - Again growth alone evident in interacted regression

4 Conclusions, 2 Evidential Worries

- What can be said?
  - (1) Some solid evidence of a PRSP gain
    - But fragile & weaker as analysis becomes more sophisticated
    - Broadly confined to dollar-a-day data.
      - Problematic for judging PRSP "success"
  - (2) Primacy of growth and no distributional benefit
    - Not pro-poor therefore?
  - (3) No stabilization bias in evidence
  - (4) So it is possible to construe PRSPs as growth strategies
- Concerns:
  - (1) Data issues generally plus self selection problem
  - (2) Attribution problem
- Need for triangulation