MPI versus Income Poverty in South Africa using The South African National Income Dynamics Study

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Sample design

- 8000 households in 400 areas
- Sample is only intended to be representative of the country as a whole (i.e. not at provincial level)
- Sampling frames excludes boarding schools, halls of residence, prisons, hospitals & old age homes
- Sampling frame includes hostels
- Every household at the dwelling is included
- Live-in domestic workers are separate households

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Sample design (2)

- Provided at least one member of a household participated in the Wave 1 survey in 2008, <u>every</u> resident household member of these households became a Continuing Sample Member (CSM).

- A CSM remains in the panel even if she/he refuses to participate in a particular wave

- We will conduct a proxy interview for CSMs that are regarded as household members but are currently in an institution that is out of the scope of the sampling frame.

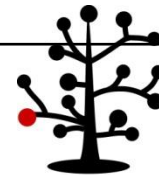**N.i.D.S.**
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Sample members

- Every resident household member at baseline is a continuing sample member (CSM)

- A child born to a female CSM after baseline becomes a CSM

- After wave 1, everyone that is co-resident with a CSM is ALSO interviewed – these are termed Temporary Sample Members (TSMs)

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The NIDS Wave 1 Sample

	No	%
Total Dwelling Units Sampled	10368	
Plus multi-households added to sample	491	
Total Potential Sample	**10859**	100%
Less Vacant and out-of-scope Dwelling Units	523	5%
Less No-Access Areas	119	1%
Less Non-contacts	1214	11%
Less Refusals	1698	16%
Participating Households	**7305**	**67%**

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The NIDS Sample of Individuals

	No	%
Household members	31163	
Less non-resident in-scope members	2916	
Continuing Sample Members	**28247**	100%
Adult Questionnaire	15633	55%
Proxy Questionnaire	1753	6%
Child Questionnaire	9408	33%
Individuals who didn't complete an interview	1453	5%

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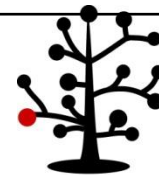
Attrition Rates for Wave 2 (2010)

Population Group	Refusal	Non-contact	Deceased	Total	Attrition Rate
African	1054	2067	710	3831	18.0%
Coloured	480	427	100	1007	26.1%
Asian/Indian	112	30	8	150	39.5%
White	490	190	28	708	53.1%
Total	2136	2714	846	5696	21.3%

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Attrition Rates by W1 Income Decile

Decile	Number of Refusals	Number of Non-Contacts	Number of Deceased	Total Number of Individuals	Attrition Rate (%)
1	125	322	67	514	18.6
2	124	266	78	468	17.2
3	79	228	81	388	14.4
4	158	230	70	458	17.0
5	122	212	93	427	16.1
6	148	251	116	515	19.1
7	174	260	91	525	19.8
8	191	271	122	584	22.1
9	310	327	77	714	27.3
10	705	347	51	1103	**41.6**
Total	2136	2714	846	5696	**21.3**

Cross-sectional comparison of Poverty in Wave 1 and Wave 2

Headcount Indices
(at Poverty Line of R515 per capita per month)

	Wave 1	Wave2
National	0.46	0.44
African	0.55	0.53
Coloured	0.26	0.23
White	0.01	0.02

- The Gini coefficient for inequality was constant at 0.68

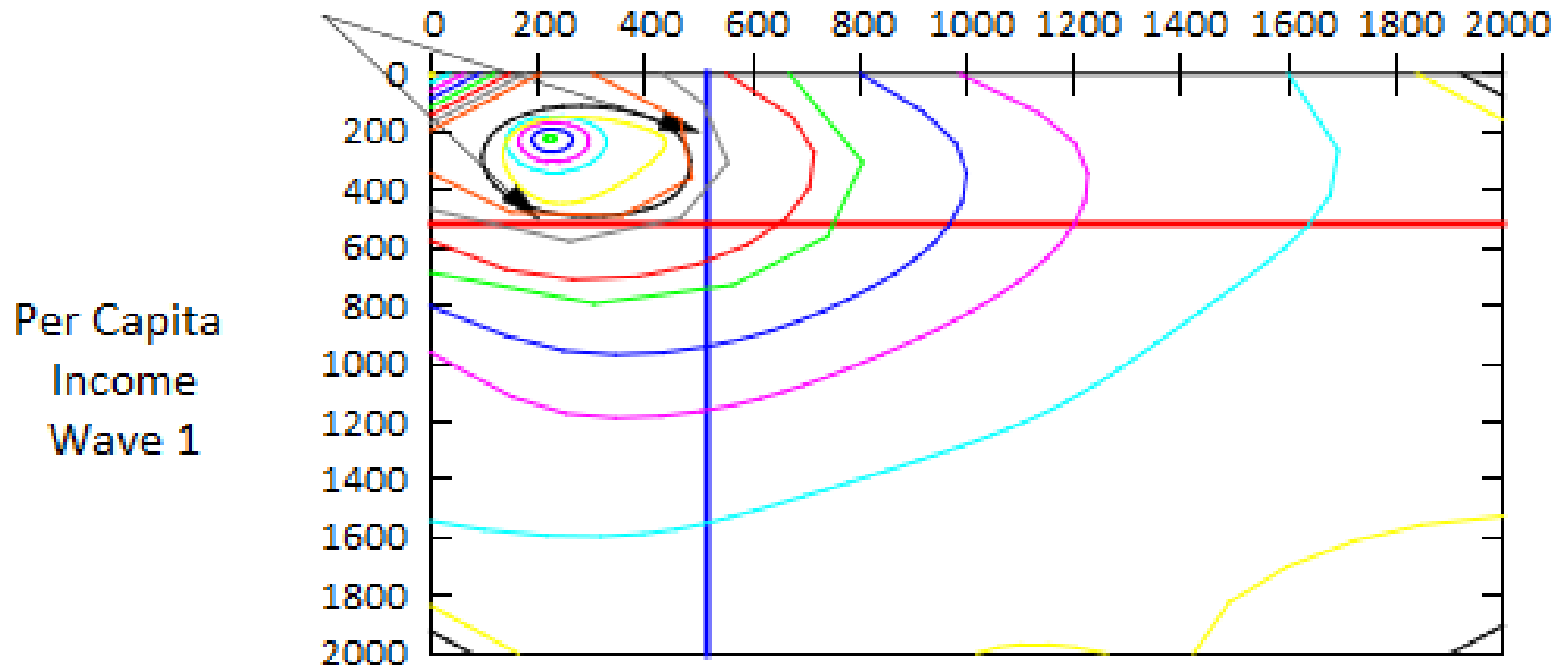# Distribution of Changes in Real Income

Source: NIDS Waves 1 and 2
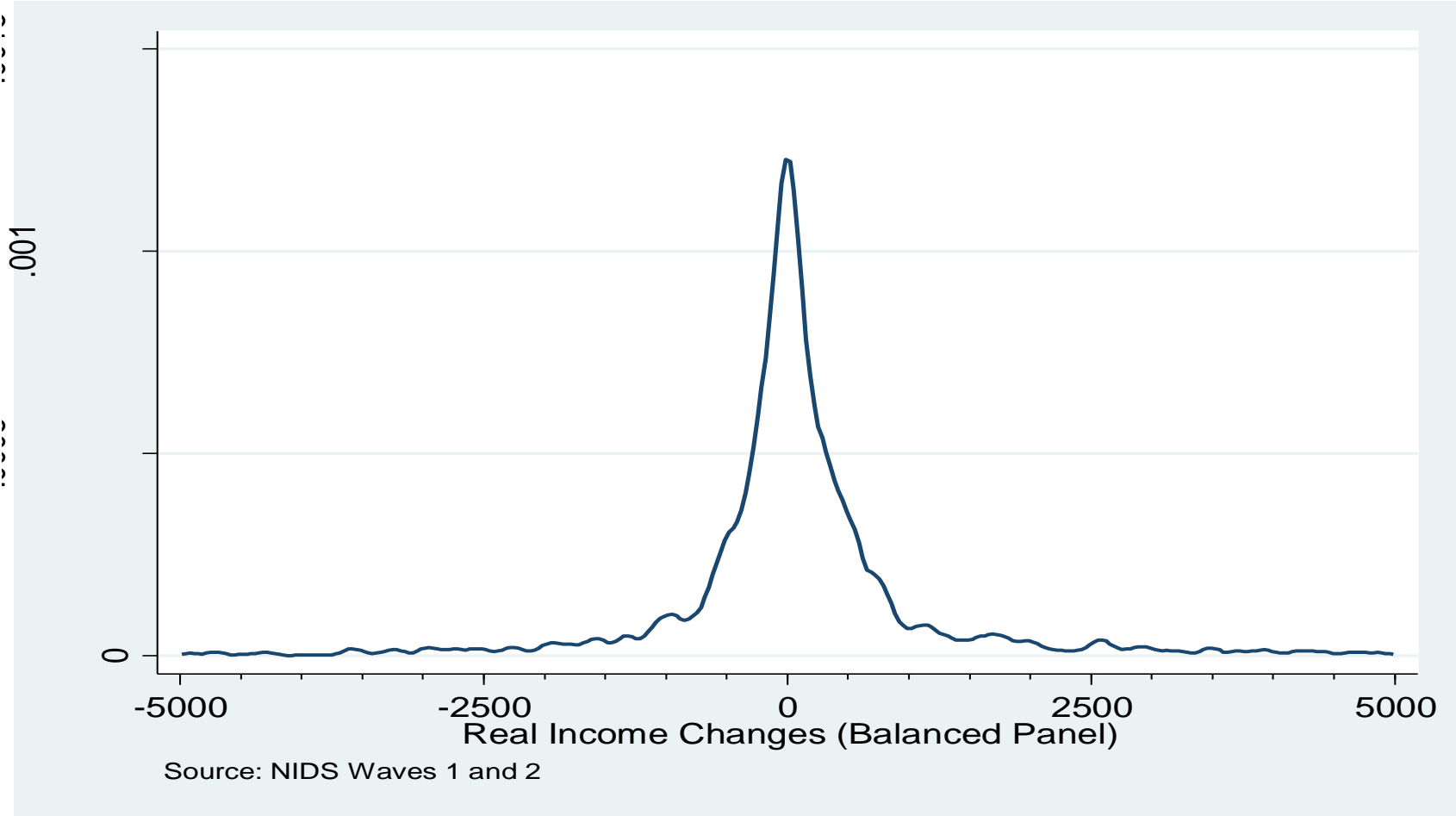
Some notes on the data

- We use only the balanced panel of 21069 individuals observed in both waves (2008 and 2010)

- All tables are weighted using the panel weights

- All Rand amounts are in 2008 prices

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Some notes on the MPI indicators

- Nutritional deprivation: at least one adult has BMI<18.5 or at least one child has WAZ<-2

- Mortality deprivation: any woman in the household has had a child (under age 15 years) die in the last 20 years

- Education deprivation: At least one child aged 7-15 is not enrolled at school

Some notes on the MPI indicators (2)

Living conditions:

- Water: no piped water on site

- Toilet: household does not have access to a flush/VIP toilet OR household shares with another household

- Cooking fuel: does not use electricity, gas or paraffin for cooking

- Electricity: no access to electricity

- Assets: household is deprived if it does not own a vehicle AND has less than 2 different small assets (TV, radio, phone, cellphone, fridge, bicycle)

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- **MPI Poor if Deprived in >=33.3% of weighted dimensions**

- Using this, 10.7% of our balanced panel was MPI-poor in Wave 1.

- The money-metric poverty line at which 10.7% of individuals are poor is
R167 per capita per month (2008 prices)

- R167 = PPP$40 per capita per month

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MPI poverty in 2008 & 2010

	Wave 1	Wave 2
MPI Headcount	0.107	0.090
Average Intensity	0.407	0.406
MPI	0.044	0.037

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		Wave 2 Status			
		N-N	RP-MN	RN-MP	P-P
Wave 1 Status	N-N	71%	6%	4%	1%
	RP-MN	5%	2%	0%	0%
	RN-MP	4%	1%	2%	1%
	P-P	1%	1%	1%	0%

KEY		
	N-N	Rand non-poor, MPI non-poor
	RP-MN	Rand poor, MPI non-poor
	RN-MP	Rand non-poor, MPI poor
	P-P	Rand poor and MPI poor

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MPI vs money-metric poverty

Wave 1		
	MPI Non-poor	**MPI Poor**
Money Non-poor	81%	8%
Money Poor	8%	3%

Wave 2		
	MPI Non-poor	**MPI Poor**
Money Non-poor	81%	7%
Money Poor	10%	2%

MPI Poverty Transitions

Wave 1 Status		Wave 2 Status				
		0	0-33%	33-50%	>50%	
	0	0,844	0,013	0,032	0,003	0,893
	0-33%	0,015	0,005	0,004	0,000	0,024
	33-50%	0,046	0,004	0,021	0,003	0,074
	>50%	0,004	0,001	0,003	0,001	0,009
		0,910	0,023	0,061	0,007	1

Money-metric Poverty Transitions

Wave 1 Status		Wave 2 Status				
		R 167	R147-R167	R51-R147	<R51	
	R 167	0,810	0,024	0,059	0,001	0,893
	R147-R167	0,017	0,002	0,004	0,000	0,023
	R51-R147	0,052	0,007	0,014	0,001	0,074
	<R51	0,004	0,002	0,002	0,000	0,009
		0,883	0,035	0,079	0,003	1
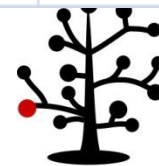
- **We try a different cut-off: MPI Poor if Deprived in >=20% of weighted dimensions**

- Using this cut-off, 34.5% of the sample was MPI-poor in Wave 1.

- The money-metric poverty line at which 34.5% of individuals are poor was R369 per capita per month (2008 prices)

- R369 = PPP$88 per capita per month

MPI vs money-metric poverty at higher poverty line

Wave 1		
	MPI Non-poor	**MPI Poor**
Money Non-poor	50%	15%
Money Poor	15%	19%

Wave 2		
	MPI Non-poor	**MPI Poor**
Money Non-poor	52%	14%
Money Poor	17%	17%

		Wave 2 Status			
		N-N	RP-MN	RN-MP	P-P
Wave 1 Status	N-N	38%	6%	4%	2%
	RP-MN	6%	6%	2%	2%
	RN-MP	5%	2%	5%	3%
	P-P	2%	4%	4%	10%

KEY N-N   Rand non-poor, MPI non-poor

RP-MN Rand poor, MPI non-poor

RN-MP Rand non-poor, MPI poor

P-P   Rand poor and MPI poor

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Characteristics of MPI and Money Poor

MPI 2 (>=20%)	Wave 1		Wave 2	
	MPI Poor	Rand Poor	MPI Poor	Rand Poor
Race				
African	0,405	0,409	0,370	0,398
Coloured	0,147	0,145	0,130	0,156
Asian/Indian	0,170	0,074	0,033	0,067
White	0,006	0,007	0,014	0,019
Province				
W. Cape	0,136	0,141	0,115	0,162
E. Cape	0,482	0,514	0,448	0,466
N. Cape	0,209	0,207	0,201	0,257
Free State	0,123	0,257	0,214	0,346
KZN	0,518	0,477	0,452	0,433
North West	0,319	0,318	0,287	0,298
Gauteng	0,164	0,175	0,168	0,186
Mpumalanga	0,305	0,320	0,284	0,324
Limpopo	0,546	0,487	0,432	0,490
Geo-type				
Rural Formal	0,542	0,301	0,484	0,312
Tribal Authority	0,624	0,566	0,555	0,563
Urban Formal	0,125	0,218	0,146	0,237
Urban Informal	0,317	0,382	0,339	0,327
National	0,345	0,346	0,313	0,339

Some tentative conclusions

- Attrition a problem, but bias unclear;

- International MPI cut-off too low for South Africa (need ‚relative MPI')?

- Substantial mismatch income-MPI poverty (similar to Klasen, 2000);

- More MPI than income improvements over time;

- More churning in income poverty than MPI poverty;

- Further analyses:

  – Robustness to lower poverty cut-off;

  – Determinants of MPI vs. Income Poverty Transitions;