

Inequality increasing everywhere?

Evidence from a global database of household surveys

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Motivation:

Disparate views about inequality within countries

1. “We show that income inequality has increased in nearly all world regions in recent decades, but at different speeds.” ([World Inequality Report 2018, online](#))
2. “The available evidence suggests that on average the levels of national income inequality in the developing world increased in the 1980s and 1990s, and declined in the 2000s.” ([Alvaredo and Gasparini, 2015, HID Vol. 2](#))
3. Other sources of international comparisons are mostly region-specific:
 - i. Lustig et al. (2013)
 - ii. Cornia (2014)
 - iii. Morelli et al. (2015)
 - iv. Hassine (2015)

→ This paper: up-to-date **global** analysis of within-country inequality.

Overview of results

- Gini for average country began to fall in early 2000s
- 1990-2000: Gini increased in more than half of countries
- 2000-2015: Between 2000 and 2015, for every country where the Gini index increased by more than 1 point, there are two countries where it fell by more than 1 point
- Robust to balanced sample of countries, alternative inequality measures, inequality databases, comparison with top income data
- Caveats:
 - Measurement issues: e.g. incomplete coverage of the top tail in surveys; no Lorenz dominance tests etc.
 - Special period: Great Recession hurting top incomes, high commodity prices

Overview

1. Data construction
2. Global and regional averages
3. Country trends (1990-2000; 2000-2015)
4. Robustness checks for alternative databases, comparison with WID

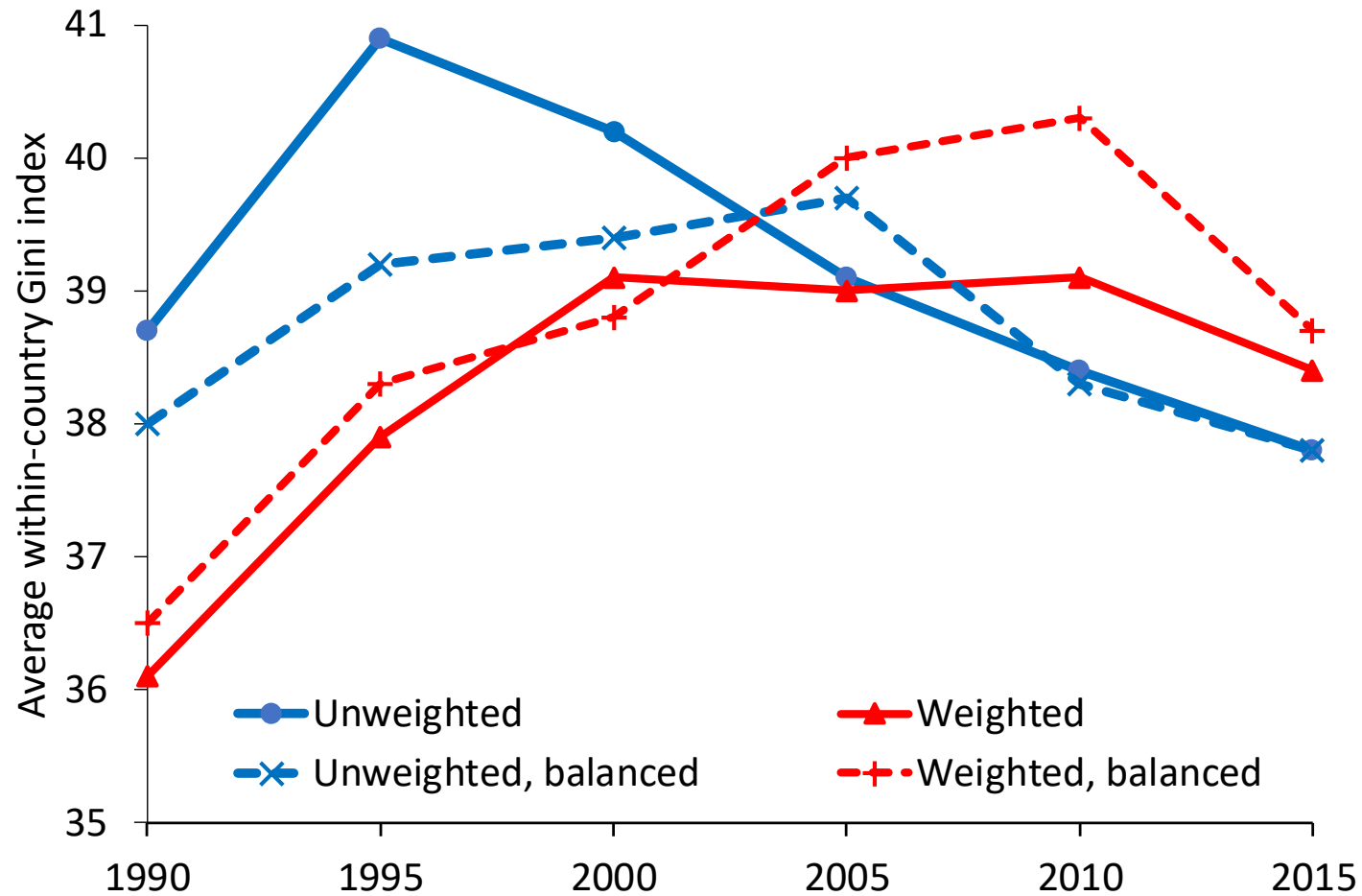
Data construction

- Concept: Gini index of household per capita disposable income or consumption expenditure among individuals.
- Sources: PovcalNet + LIS
 - Final database: 19% of observations from LIS, rest from PovcalNet
- Measurement challenges:
 - Mix income and consumption
 - Micro vs. grouped data
 - Household survey data: under-coverage of top incomes
- 6 benchmark years: 5-year intervals from 1990 to 2015. Surveys are within a two-year window.

Population coverage

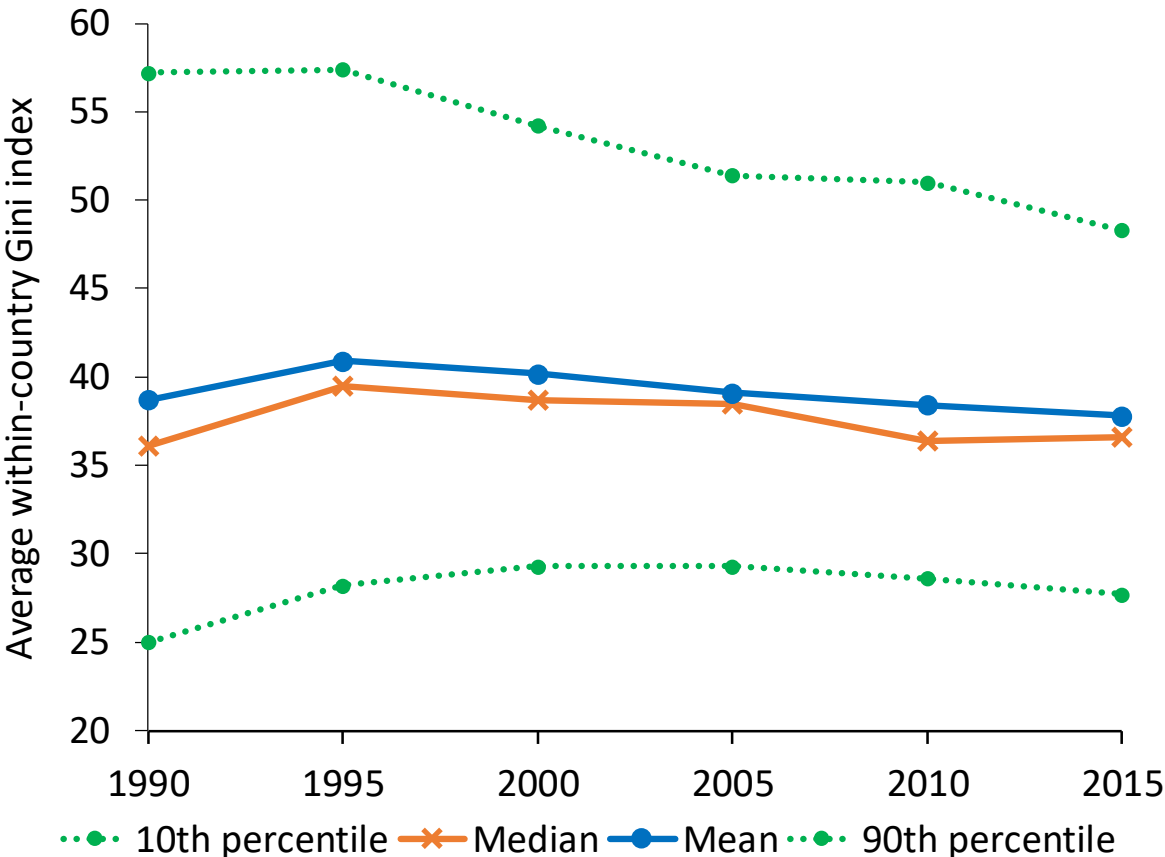
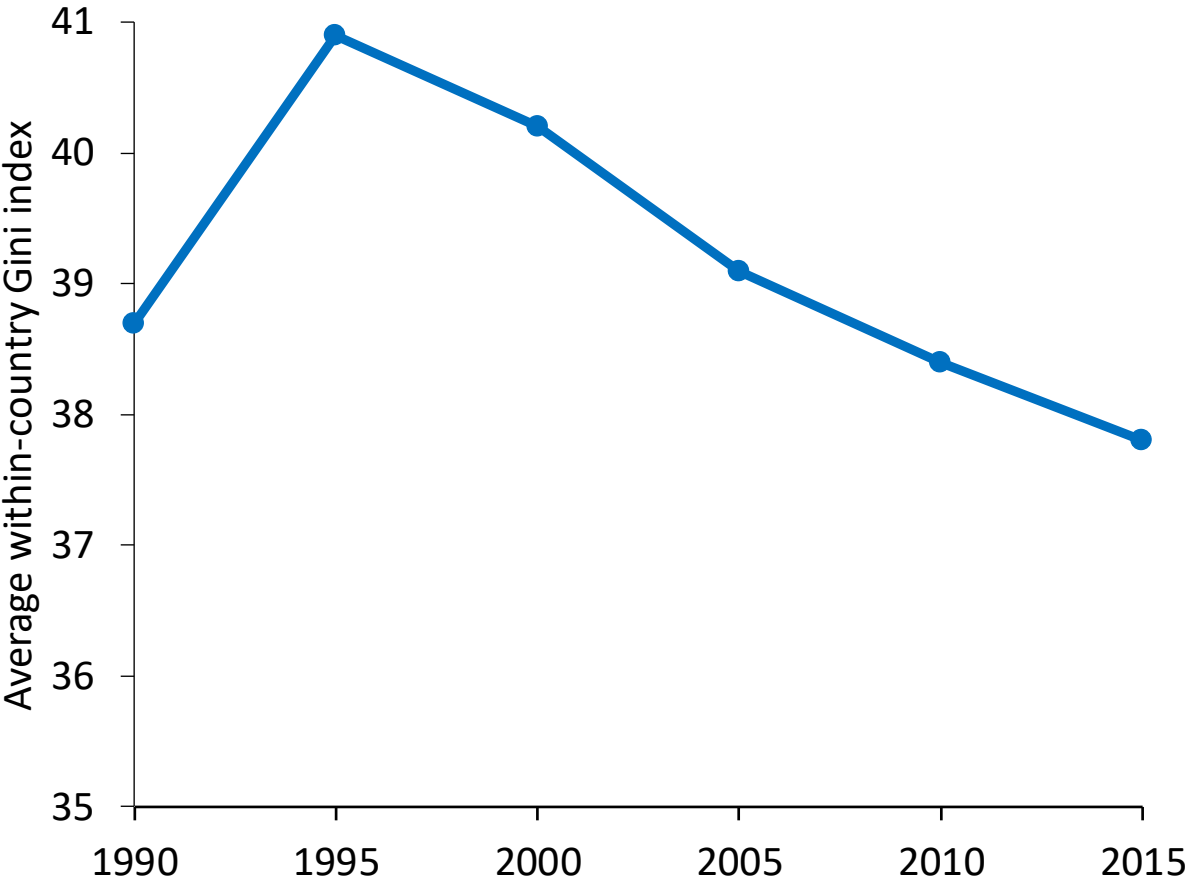
	No. of countries	Share of regional population covered by data (percent)							
		World	East Asia	Eastern Europe	L. America	Middle East	South Asia	S.-Saharan Africa	Industr. Countries
<u>A. Full sample</u>									
1990	73	83	95	65	87	77	97	44	74
1995	99	86	91	88	93	65	99	66	76
2000	119	69	94	98	97	70	21	52	77
2005	135	92	95	99	95	85	98	83	83
2010	139	93	95	91	92	75	98	89	94
2015	118	85	97	89	90	68	96	48	77
<u>B. Sub-samples</u>									
Balanced (1990-2015)	47	54	88	51	79	50	22	5	73
Balanced (1995-2015)	64	59	88	73	87	50	22	23	75
Trend (1990-2000)	61	61	93	54	86	64	21	19	74
Trend (2000-2015)	87	63	93	80	90	67	22	36	76
<u>C. Share of income surveys for full sample (percent)</u>									
2015		48	7	48	100	0	0	4	100

Trend in national inequality is sensitive to population weights, but both decline recently

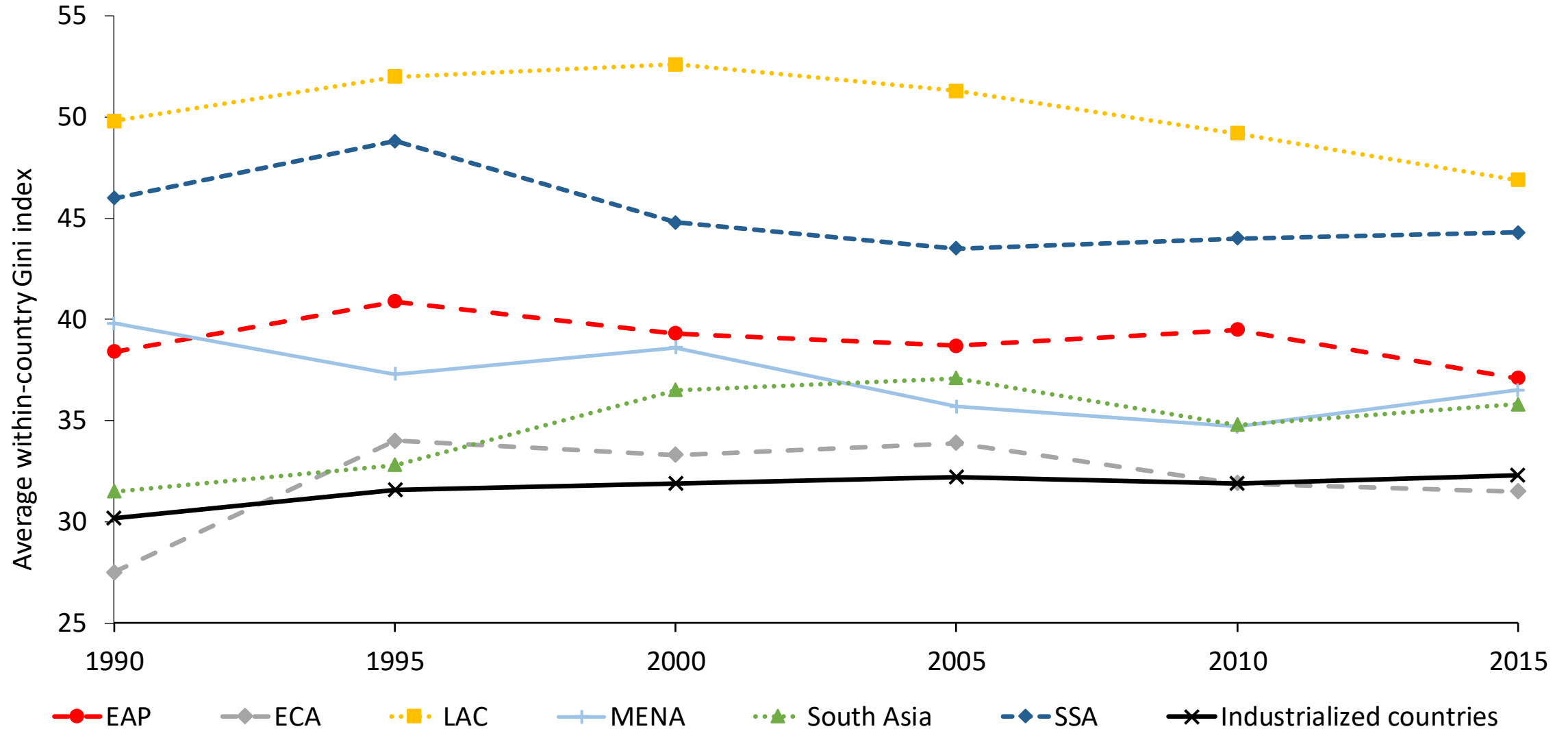


Remainder of presentation uses unweighted results!

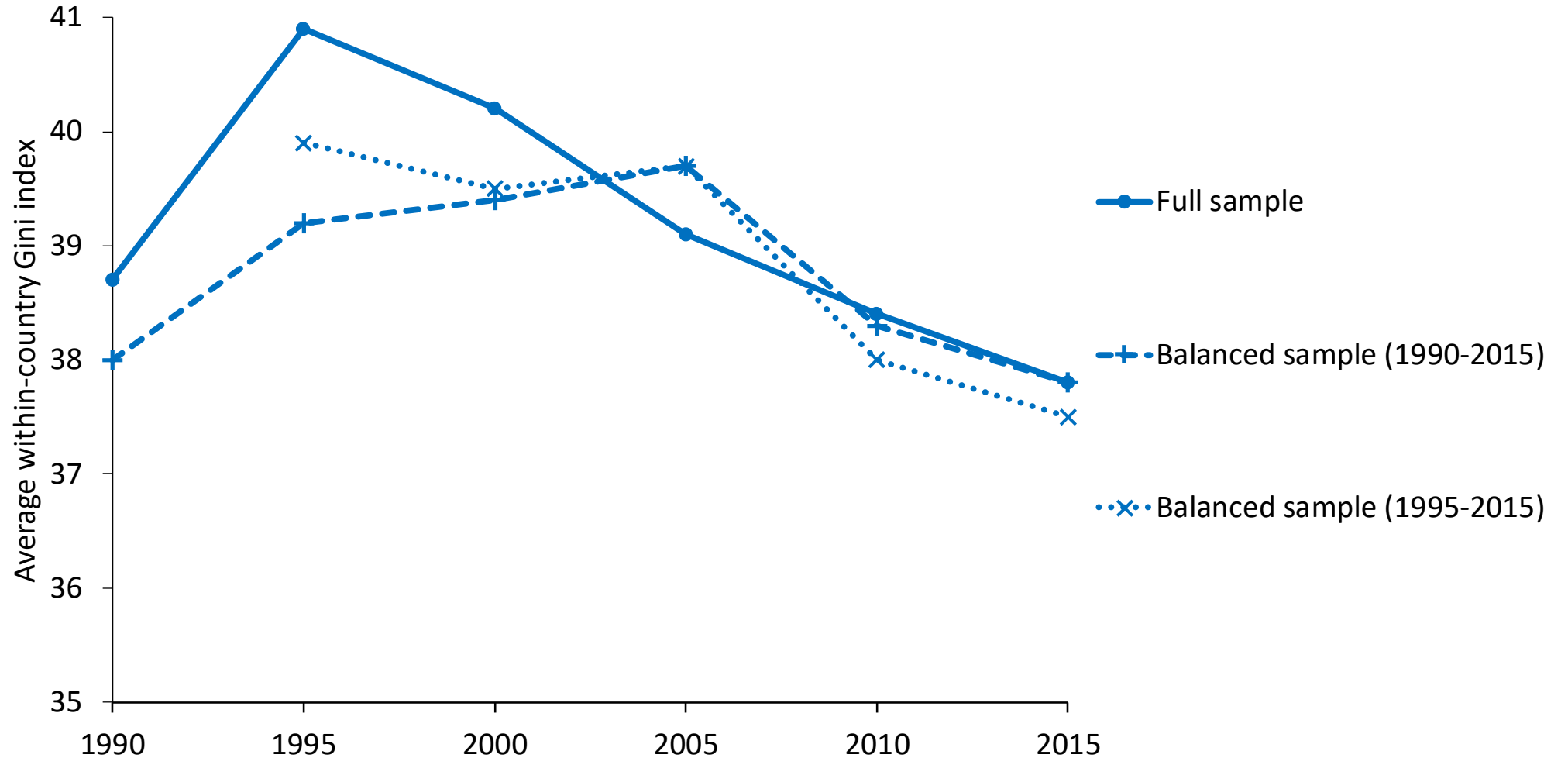
Dispersion in national inequality is falling



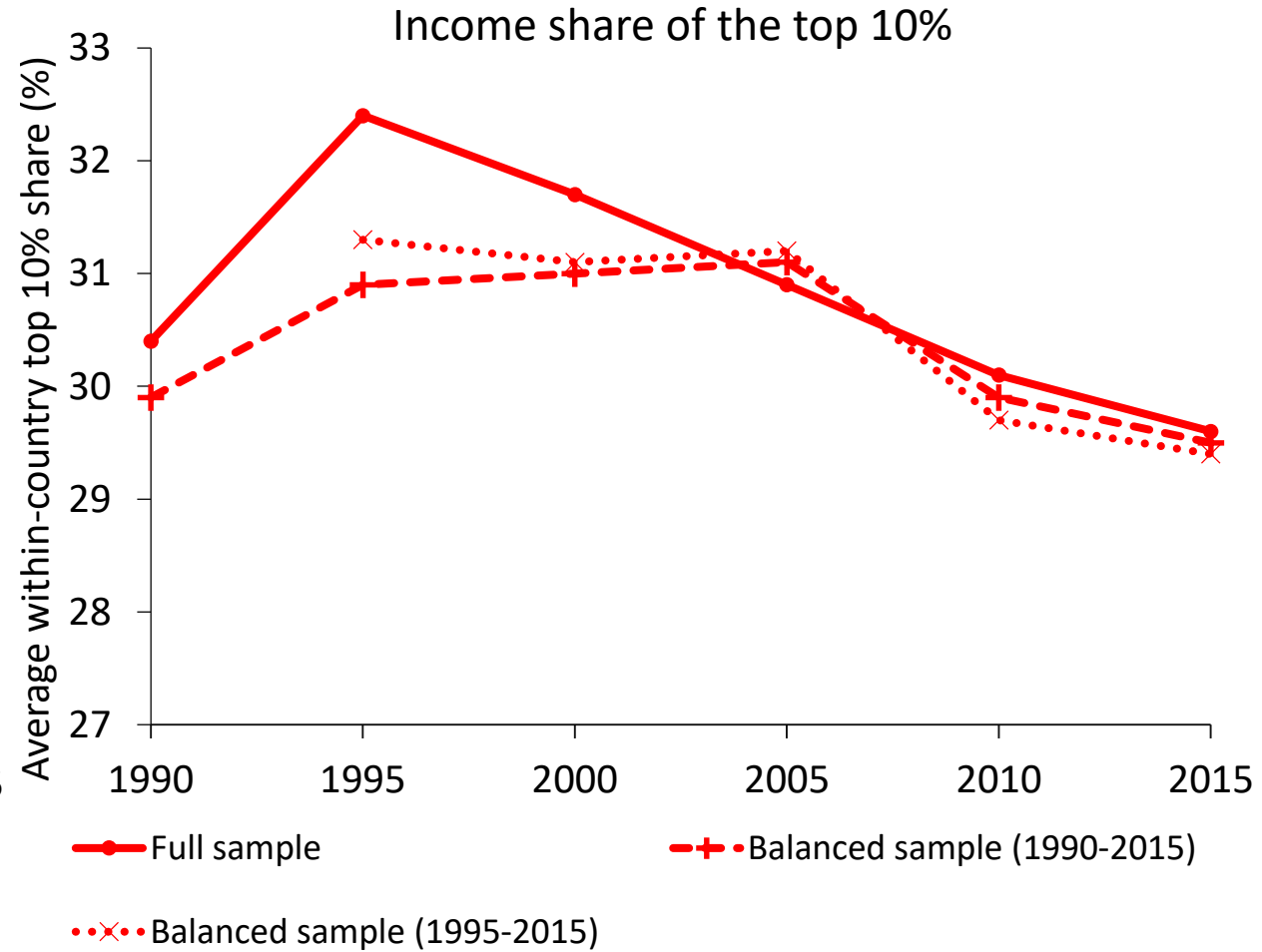
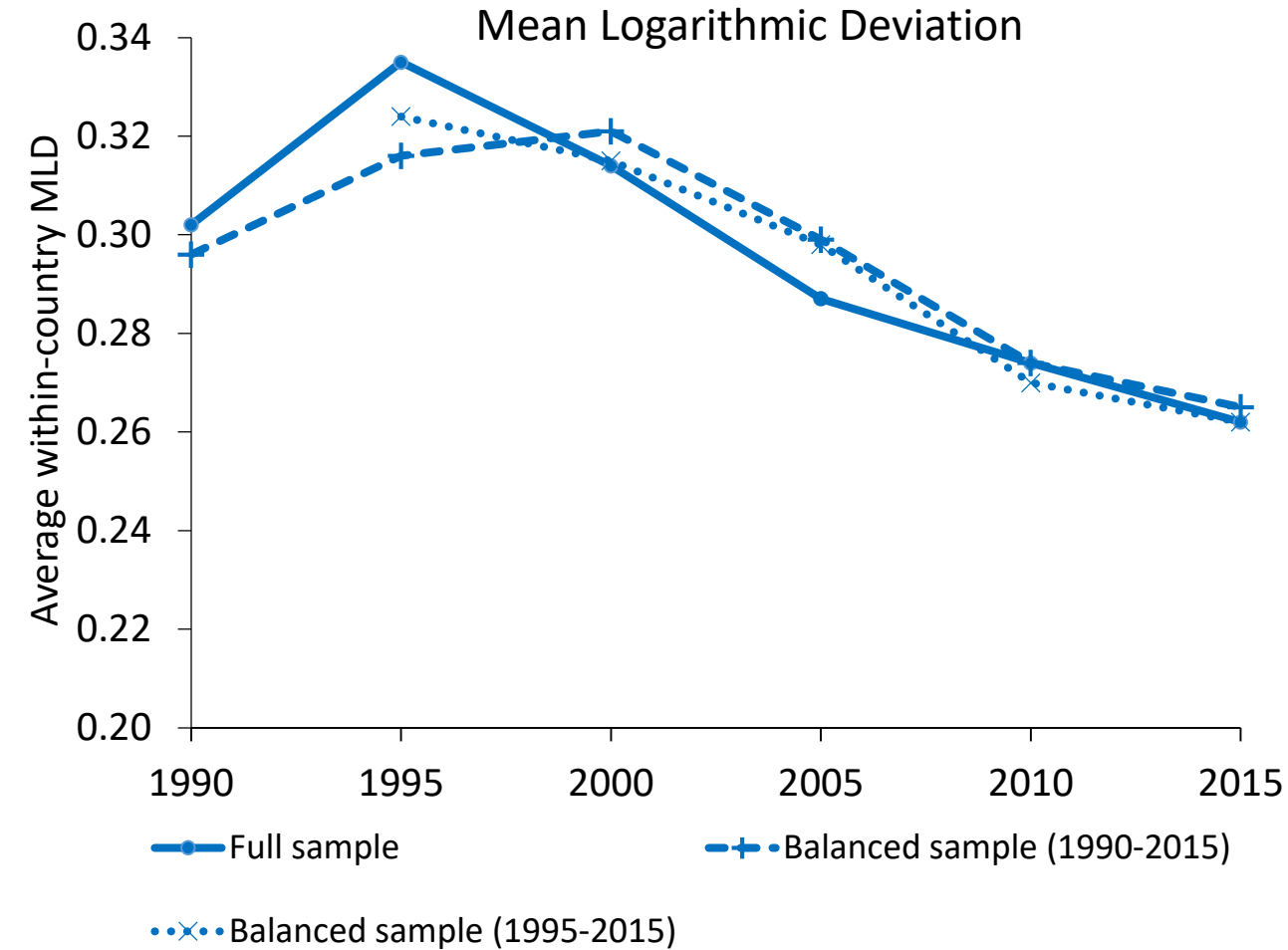
Differences across regions



Decline also in balanced panel of countries...



...and for alternative inequality measures.



Looking directly at country-level trends

	1990-2000						2000-2015					
	Number of countries with:				Mean Gini		Number of countries with:				Mean Gini	
	↑	+/-1pp	↓	Total	1990	2000	↑	+/-1pp	↓	Total	2000	2015
E. Asia & Pacific	2	0	4	6	37.1	37.1	1	3	6	10	37.5	36.4
E. Europe & C. Asia	3	1	1	5	30.1	31.0	3	4	9	16	33.1	30.7
L. America & Caribbean	8	1	7	16	50.4	52.6	0	1	16	17	53.4	46.7
M. East & N. Africa	1	3	1	5	39.7	39.1	2	1	3	6	38.9	37.0
S. Asia	2	0	1	3	31.1	34.9	1	0	2	3	34.9	35.2
Sub-Saharan Africa	4	0	4	8	44.0	41.3	6	2	6	14	45.5	44.8
Industr. Countries	12	4	2	18	30.2	31.9	9	9	3	21	31.9	32.4
World	32	9	20	61	38.8	39.7	22	20	45	87	39.7	37.8

Robustness checks I: Alternative survey data

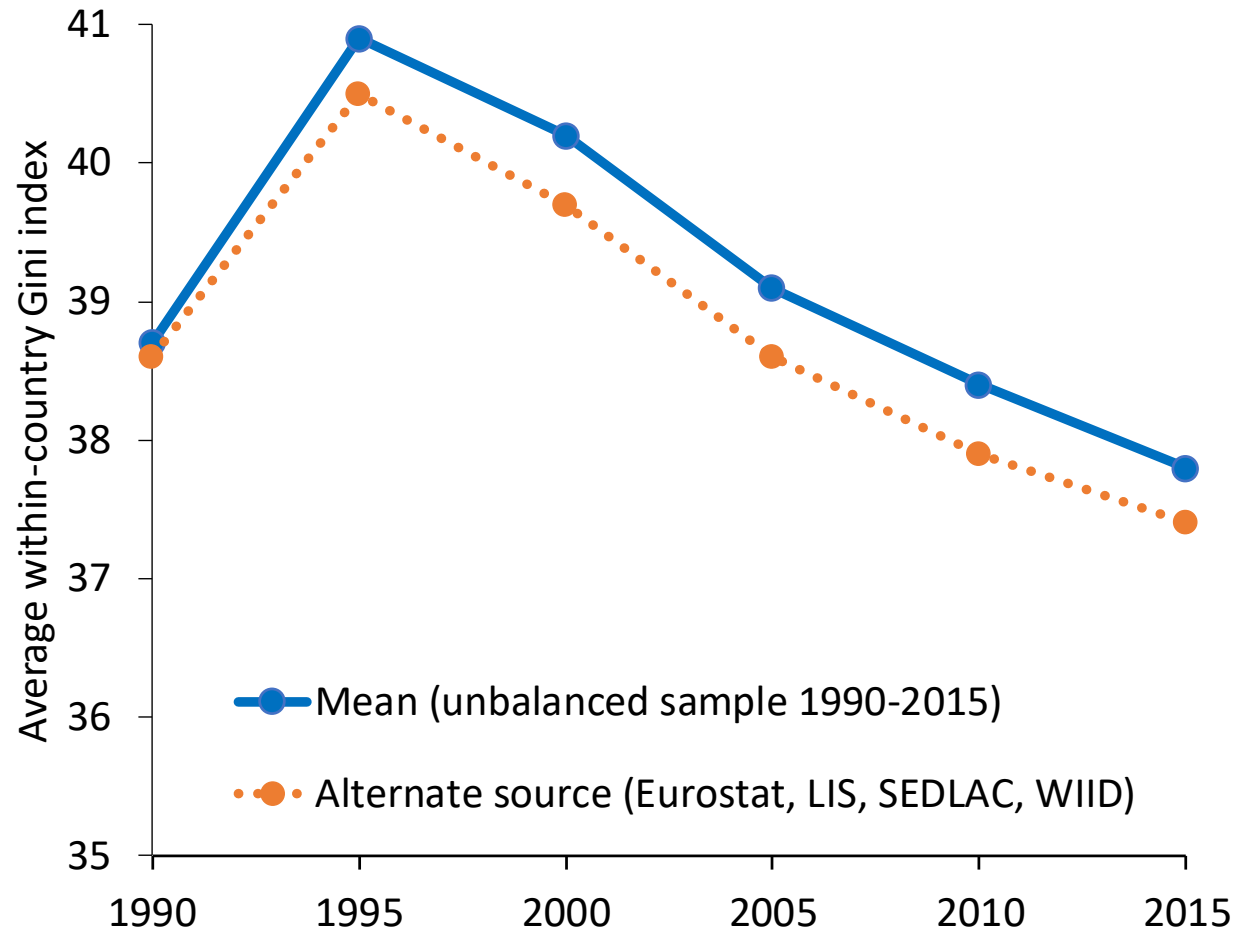
1. Income and consumption surveys: Global trend – but not level – results are robust to scaling down income-based Gini indices (factor of 0.861 from Alvaredo and Gasparini (2015))
2. Alternative inequality databases: Results are robust to using alternative microdata-based databases.
 - 2015 special issue of the *Journal of Economic Inequality*: Review of different databases; shows that country-trends can be quite different (also see Atkinson and Brandolini, 2001)
 - Our main source: PovcalNet (+LIS).
 - Replace with observations from Eurostat, LIS (key figures), SEDLAC and WIID.

Robustness check: alternative databases

Level differences

Dataset	$G_{PovcalNet} - G_{alt}$	1990	1995	2000	2005	2010	2015
Eurostat	Mean difference		2.49	2.80	1.76	1.48	1.44
	N		11	21	29	32	33
LIS	Mean difference	2.88	2.75	2.18	2.32	2.21	2.18
	N	17	21	24	21	35	17
OECD	Mean difference	1.93	1.24	2.11	1.77	1.08	2.79
	N	7	13	13	27	31	2
SEDLAC	Mean difference	1.11	0.39	0.23	0.16	0.29	0.22
	N	8	14	16	17	17	16
CEPAL	Mean difference	-0.14	-0.58	-2.17	-2.39	-2.44	-7.02
	N	9	7	13	14	16	1
SWIID	Mean difference	1.67	1.98	1.06	0.91	-0.05	0.64
	N	68	96	107	120	121	89
WIID	Mean difference	0.43	0.55	-0.15	0.36	0.02	0.46
	N	43	59	73	102	104	86
PovcalNet total # of observations		73	99	119	135	139	118

Robust to alternative survey data



- Limited number of pairwise comparisons possible
- (1) Begin with baseline sample (PovcalNet + LIS)
- (2) Replace with observations from Eurostat, LIS (key figures), SEDLAC and WIID (in this order of preference)
- Possible to replace around 40% of observations from baseline

Robustness check: Country-trends (2000-2015)

Database	↑↑ & ↑	?	↓ & ↓↓	Disagree ment	Total
PovcalNet	22	20	45		87
PovcalNet vs. SWIID	22	10	36	2	70
PovcalNet vs. WIID	8	5	32	0	45
PovcalNet vs. (Eurostat + LIS + SEDLAC)	12	5	21	0	38
PovcalNet vs. (Eurostat + LIS + SEDLAC + WIID)	18	6	40	0	64

↑↑ both PovcalNet & alternative source show significant increase

↑ one database shows significant increase, while other is insignificant

? change insignificant in both databases

Disagreement They go in opposite directions (and significant).

Robustness checks II: Is it all top incomes?

Do the survey-based results show a decline in inequality because they don't capture changes at the top?

Robustness checks

1. Correct national Gini index with the gap between national accounts and household surveys (Chandy and Seidel, 2017, using similar method proposed by Lakner and Milanovic, 2013)
 - Also find decline since early 2000s.
2. For 2000-2015, compare trend in survey-based top 10% share with top 10% share reported by World Inequality Database (WID) [based in part on tax data]
 - Survey and WID data mostly go in same direction, but WID sample overrepresents rich countries where inequality increased.

Comparison of 2000-2015 trend with WID

Database	↑↑ & ↑	?	↓ & ↓↓	Disagree ment	Total
PovcalNet (Top 10%)	20	26	41		87
PovcalNet vs. WID 10%	15	5	7	4	31
PovcalNet vs. WID 10% (high quality)	8	2	1	1	12
PovcalNet vs. WID 1%	10	8	5	2	25
PovcalNet vs. WID 1% (high quality)	7	1	2	1	11

- For 31 countries, can compare top 10% share in PovcalNet and WID.
- Top 10% shares go mostly in same direction: Only 4 of 31 (13%), go in opposite direction. No indication that survey systematically misrepresents trend.
- **Comparison sample is biased towards countries with increasing inequality:** 15 of 31 (48%) show rising inequality, compared with 22 of 87 (25%) in full sample.
 - **Using WID sample would indeed show rising inequality between 2000 and 2015.**

WID overrepresents rich countries, where inequality increased

	PovcalNet vs. WID: Comparison of Top 10% share						Baseline	
	↑↑ & ↑	?	↓ & ↓↓	Disagre ement	Total		Total	
					# countries	%	# countries	%
E. Asia & Pacific	1	0	0	0	1	3	10	11
E. Europe & C. Asia	3	0	2	3	8	26	16	18
L. America & Caribbean	0	0	0	1	1	3	17	20
M. East & N. Africa	1	0	2	0	3	10	6	7
S. Asia	0	0	0	0	0	0	3	3
Sub-Saharan Africa	0	0	0	0	0	0	14	16
Industr. Countries	10	5	3	0	18	58	21	24
World	15	5	7	4	31	100	87	100

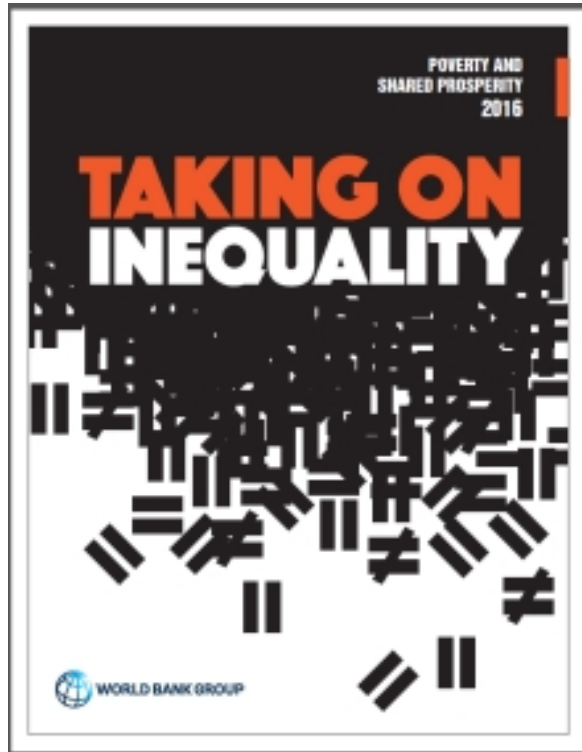
- More than 80% of comparison countries from Industrialized and Eastern Europe.
- Industrialized (58% of sample) are the countries where inequality increased!

Conclusion

- For the average country, Gini index began to fall in the early 2000s.
- Between 2000 and 2015, for every country where the Gini index increased by more than 1 point, there are two countries where it fell by more than 1 point.
- This trend is driven by developing countries, and Latin America in particular. Increases are more frequent among rich countries.
- The trends are robust to: (i) (basic) adjustments for income-consumption differences; (ii) population weights; (iii) alternative measures; and (iv) comparisons with other cross-national datasets.
- WID sample shows opposite result (for both survey and top corrected data), but rich countries overrepresented.
- Caveats:
 - Special period: Top incomes suffered more during the Great Recession.
 - Benign environment: E.g. high commodity prices in Latin America.
 - Measurement issues: Missing top incomes, consumption surveys.

Thank you!

Main results available here:



Updated paper available soon!

worldbank.org/psp