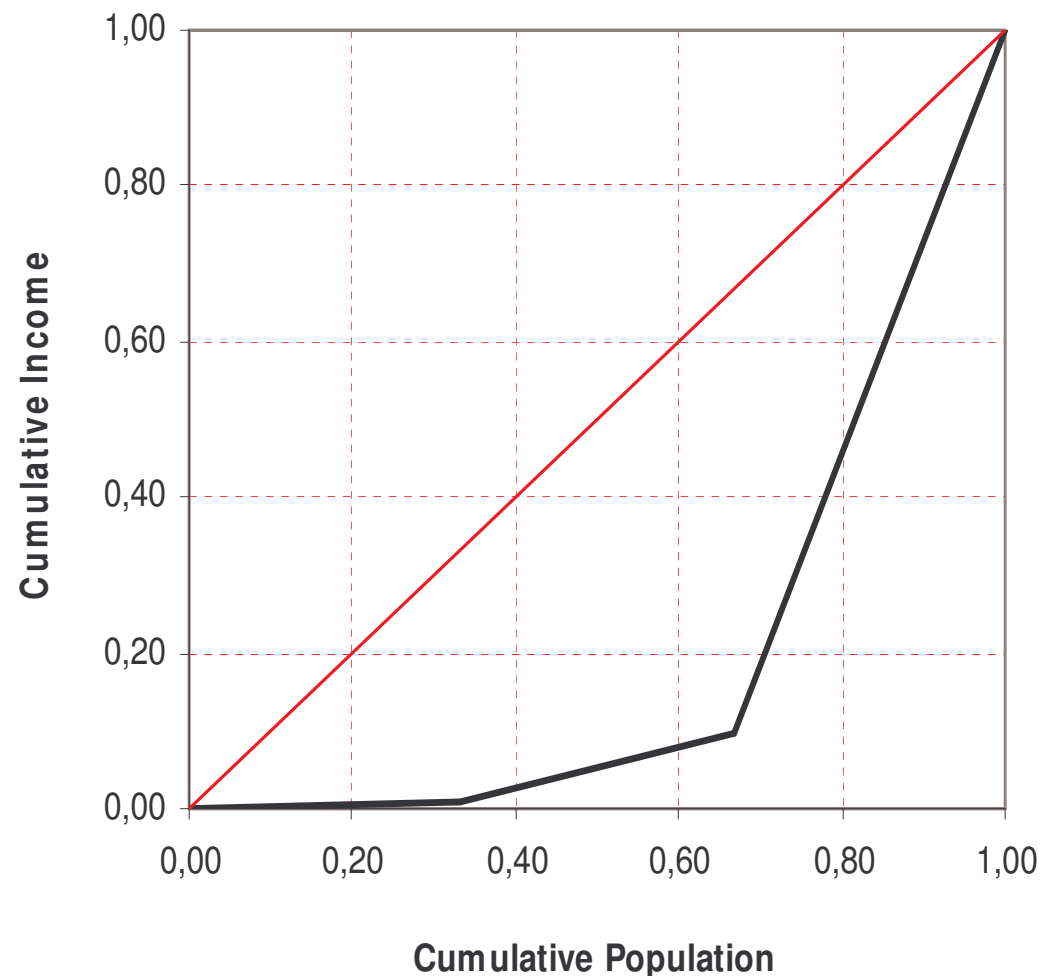


**Bi-regional conference on social protection
and poverty reduction**

**Conditional Cash Transfers and
Inequality**

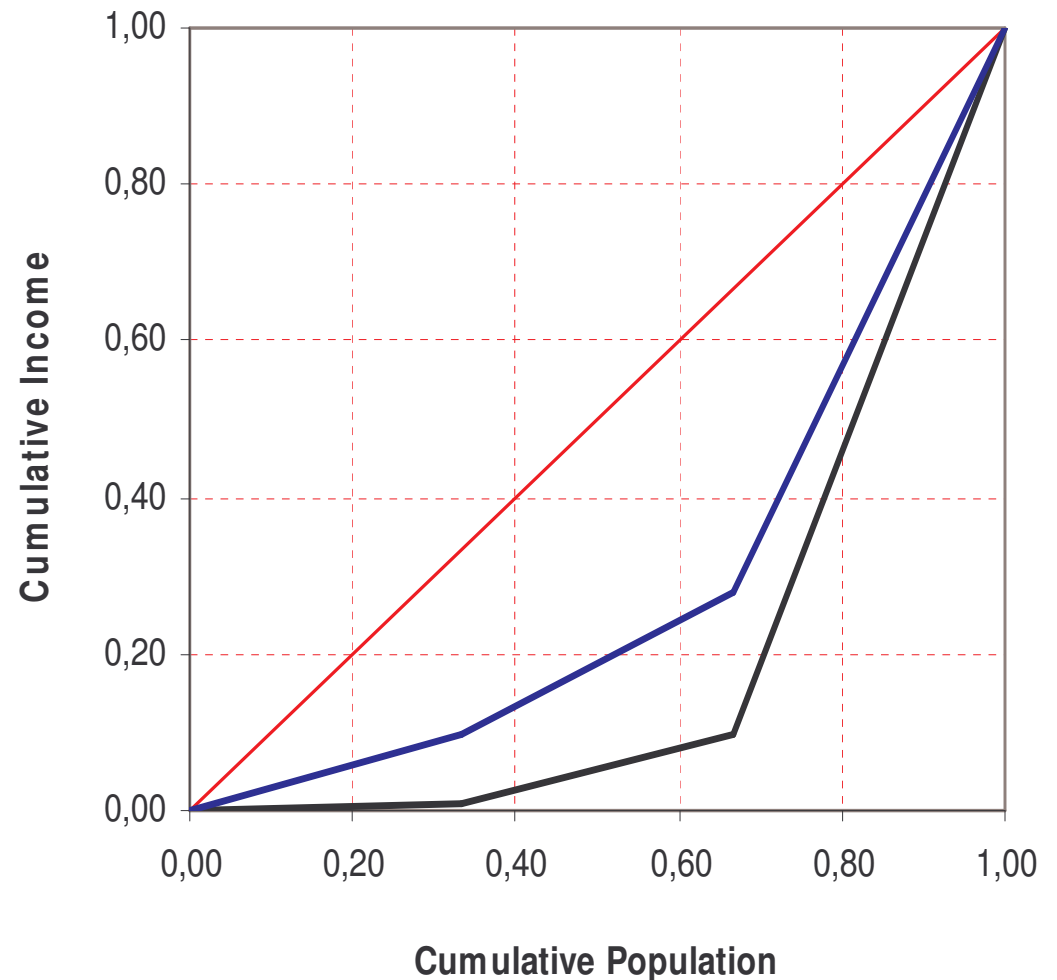
How to calculate the Lorenz Curve and Gini Coefficient

- Sort people according to income
- Accumulate on the horizontal axis the percentage of the population from 0% to 100%.
- Accumulate on the vertical axis the percentage of total income earned by the same population.
- Example: 3 people with incomes of R\$ 1, R\$ 10, R\$ 100



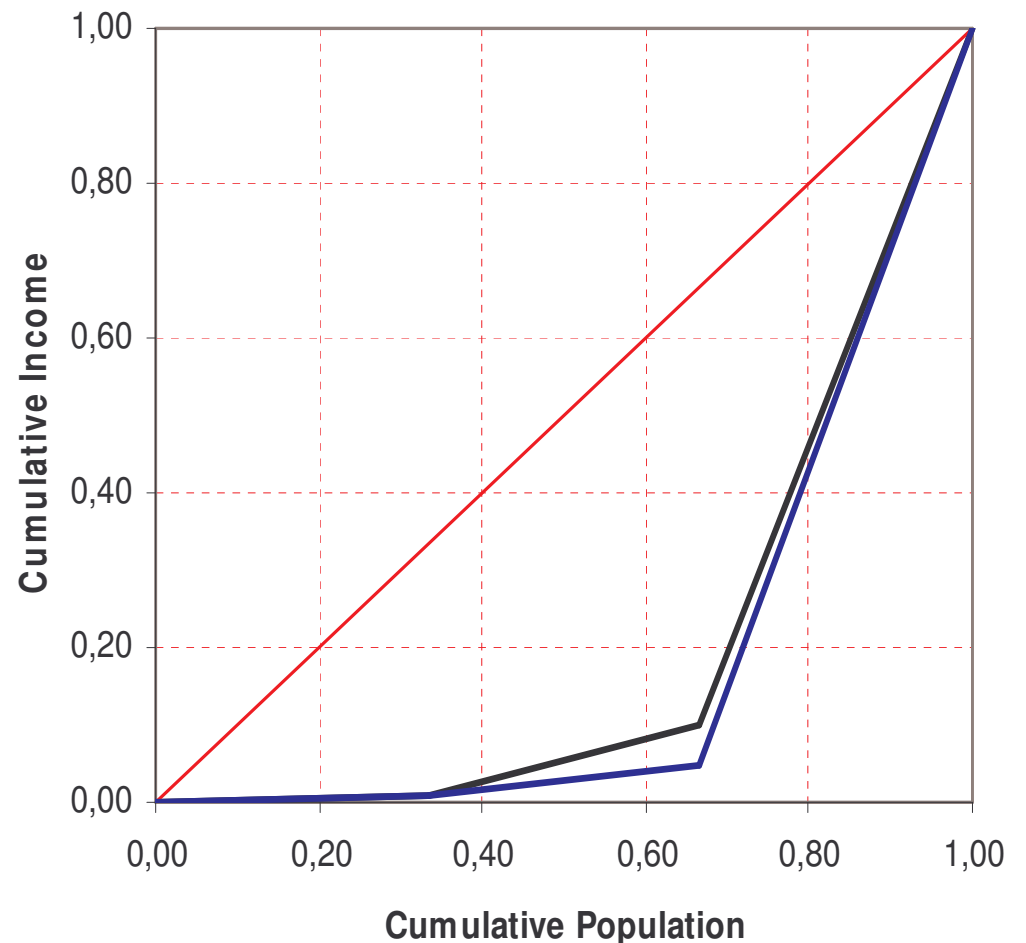
What happens if we levy a R\$ 20 tax on the wealthy and distribute it to the others?

- The income distribution is now R\$ 11, R\$ 20, and R\$ 80.
- The new curve is located entirely *inside* the old one.
- We can unambiguously affirm that there is less inequality.



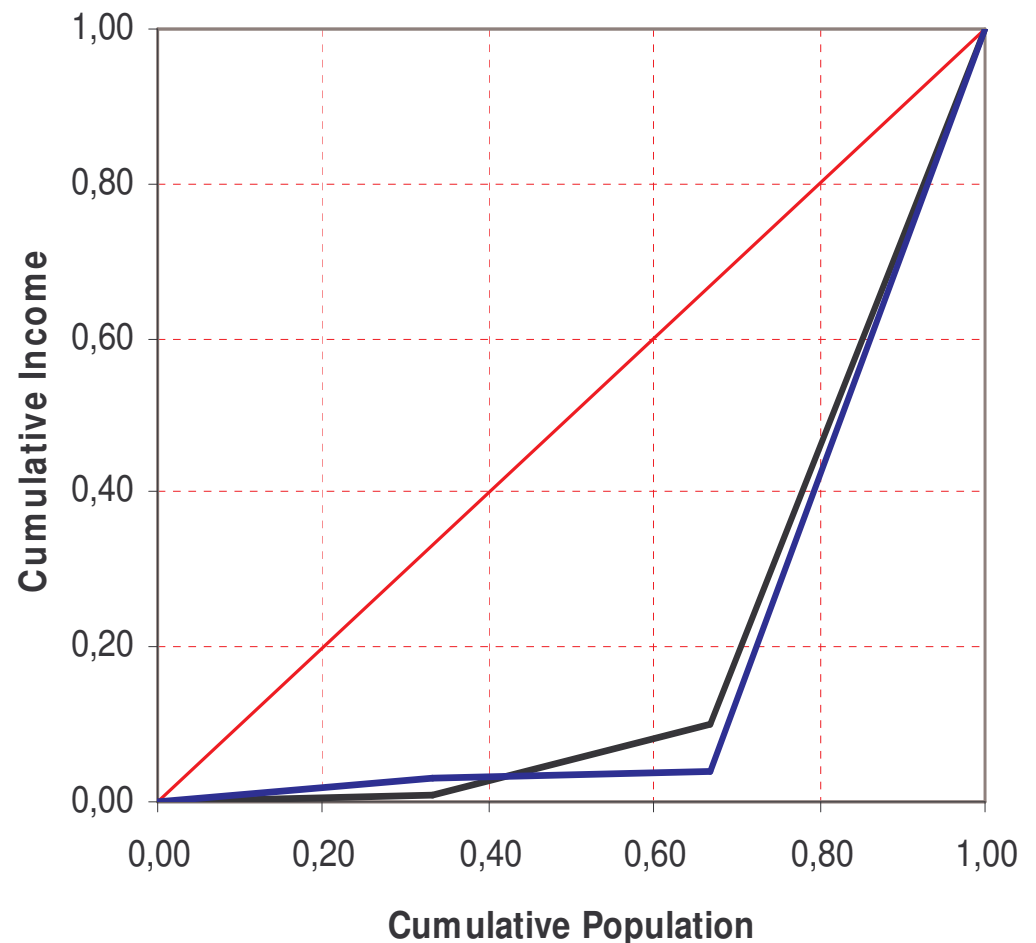
What happens if we levy a R\$ 5 tax on the middle individual and redistribute it to the rich one?

- The income distribution is now R\$ 1, R\$ 5, and R\$ 105.
- The new curve lies *outside* the old one.
- With no ambiguity, we can say there is more inequality.



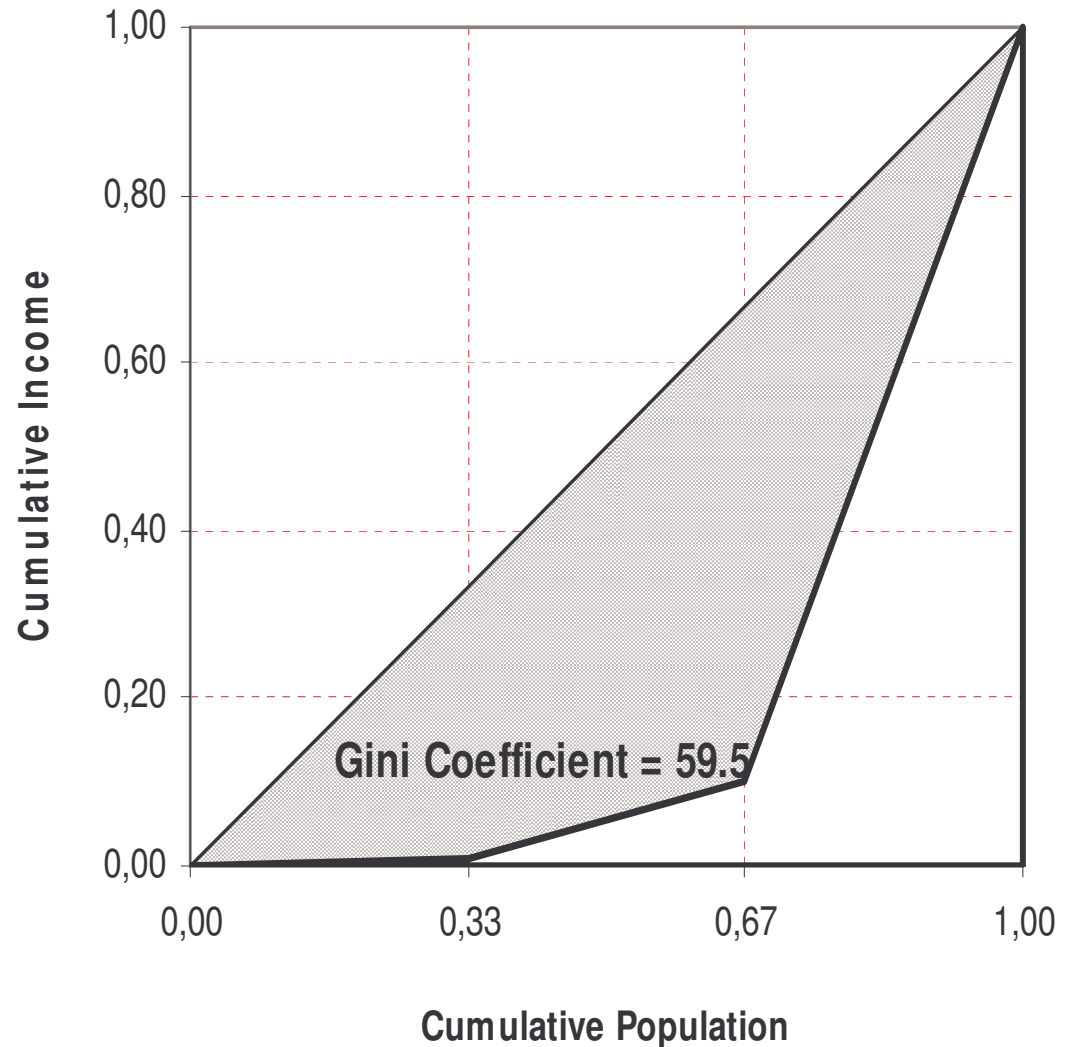
Now we tax the middle individual at R\$ 6, giving R\$ 2 to the poor one and R\$ 3 to the rich one. What happens?

- The income distribution is now R\$ 3, R\$ 4, and R\$ 103.
- The two Lorenz curves intersect.
- Neither can be classified as unambiguously more unequal.
- Some measures of inequality will elect the old distribution as the more unequal one and others, the new one.

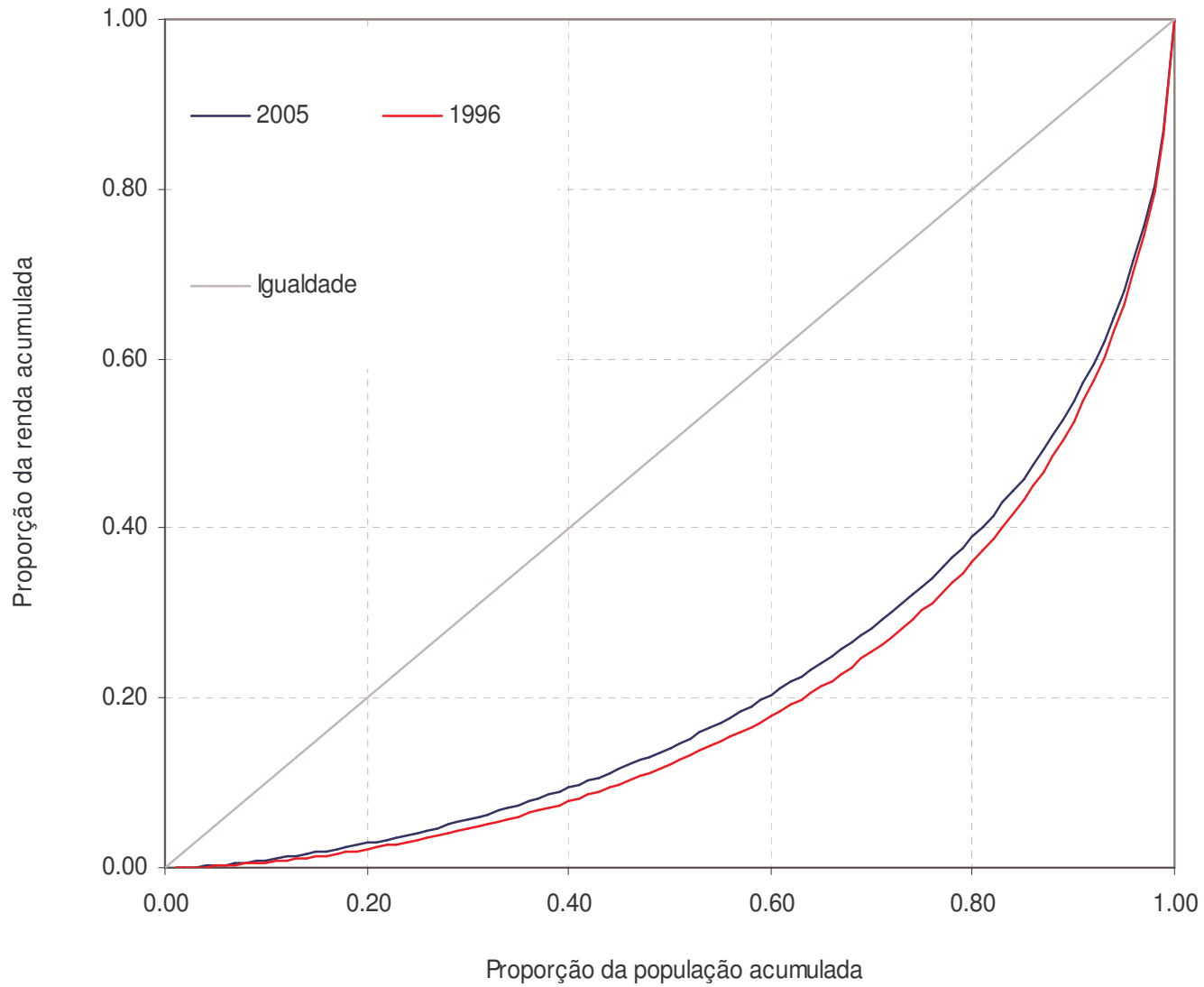


The Gini Coefficient

The Gini Coefficient is twice the area between the Lorenz Curve and the Line of Perfect Equality



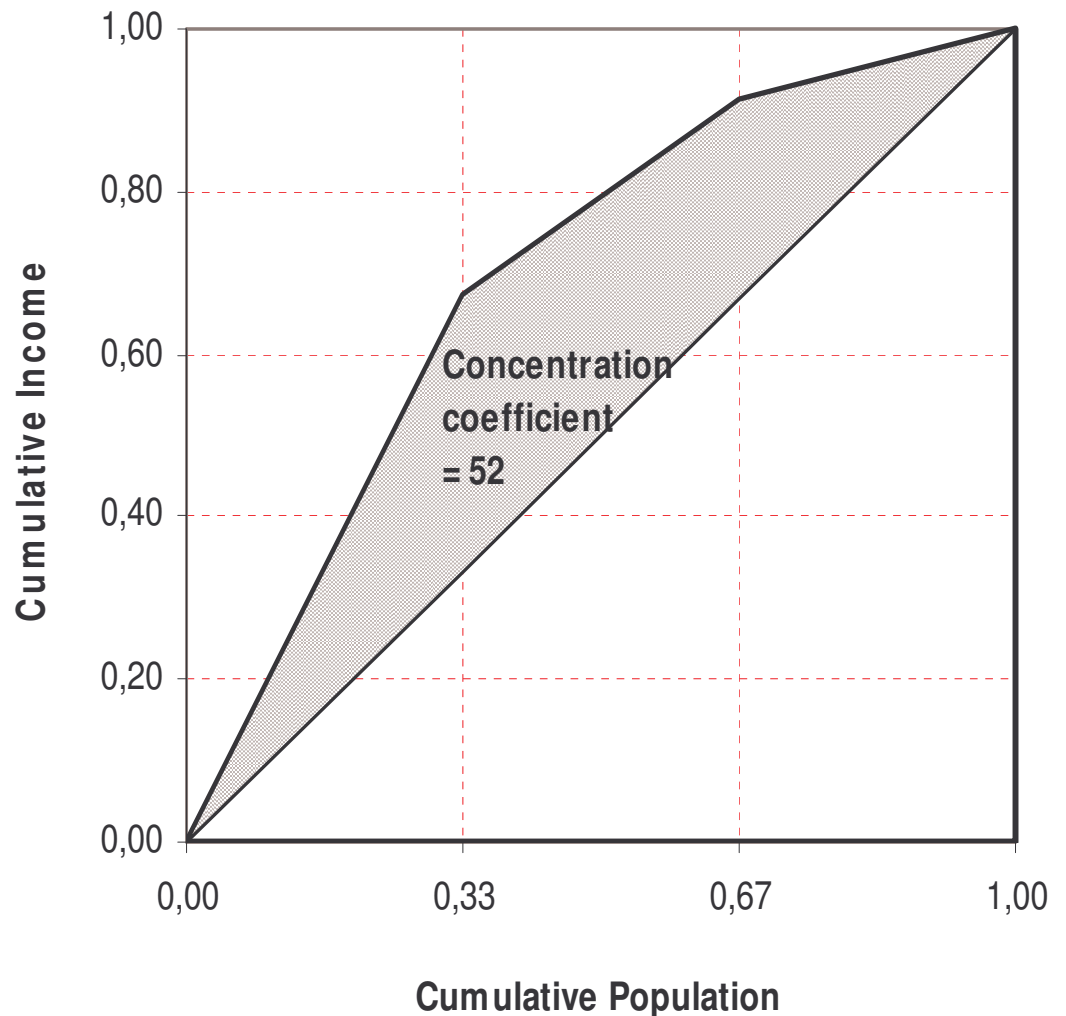
Two Real Lorenz Curves: Brazil 1996 and 2005



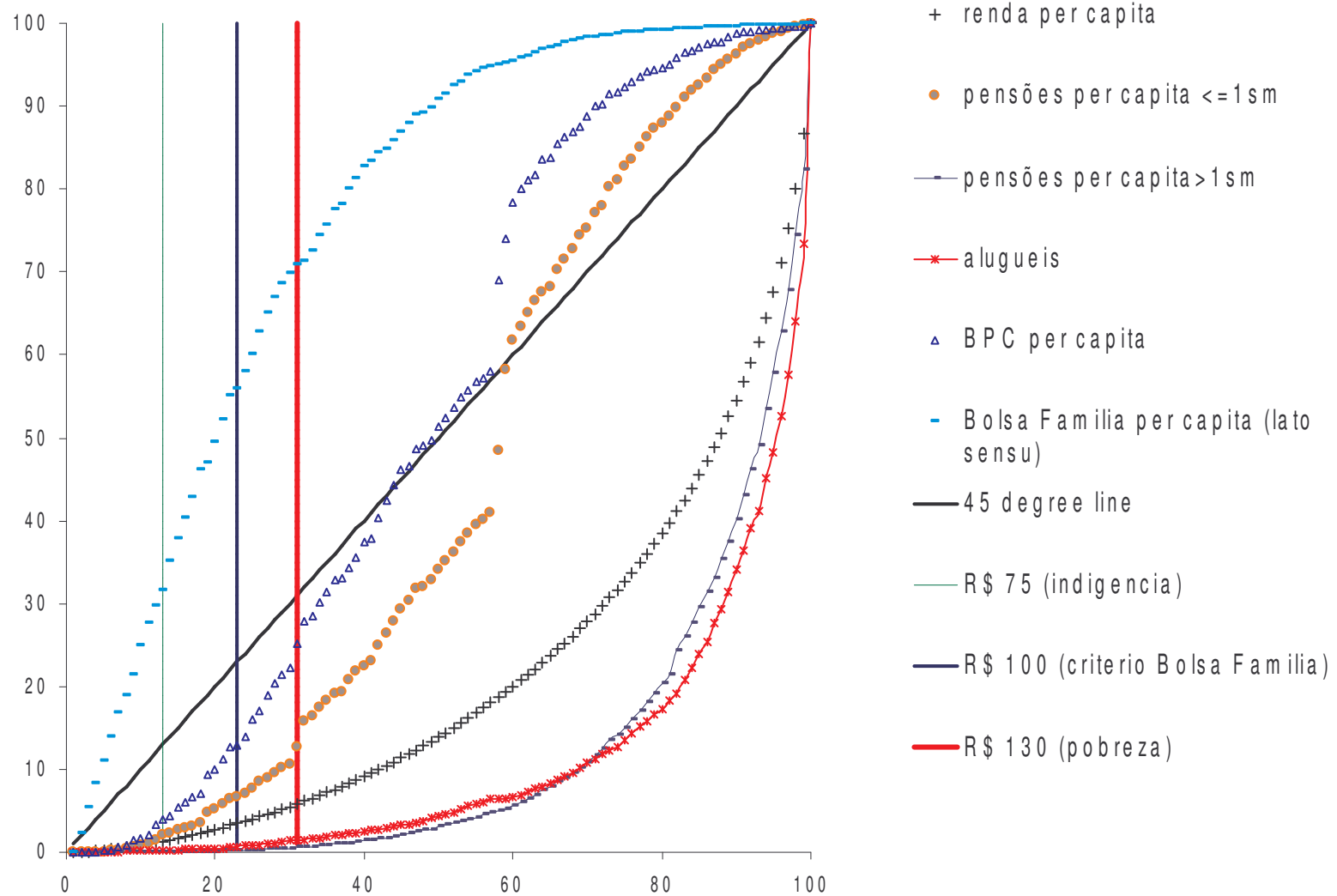
Can we calculate the Gini Coefficient for only one income source?

Yes.

- Keep people ordered according to *total* income.
- Accumulate, as before, on the horizontal axis, the percentage of population.
- But now accumulate income source *k* on the vertical axis.
- Example: A CCT applied to the previous income distribution providing the three individuals with additional R\$ 1, R\$ 0,36, and R\$ 0,13.



2004 Concentration Curves for Various Income Sources in Brazil



It so happens that the Gini coefficient is exactly the income-weighted sum of all its concentration coefficients.

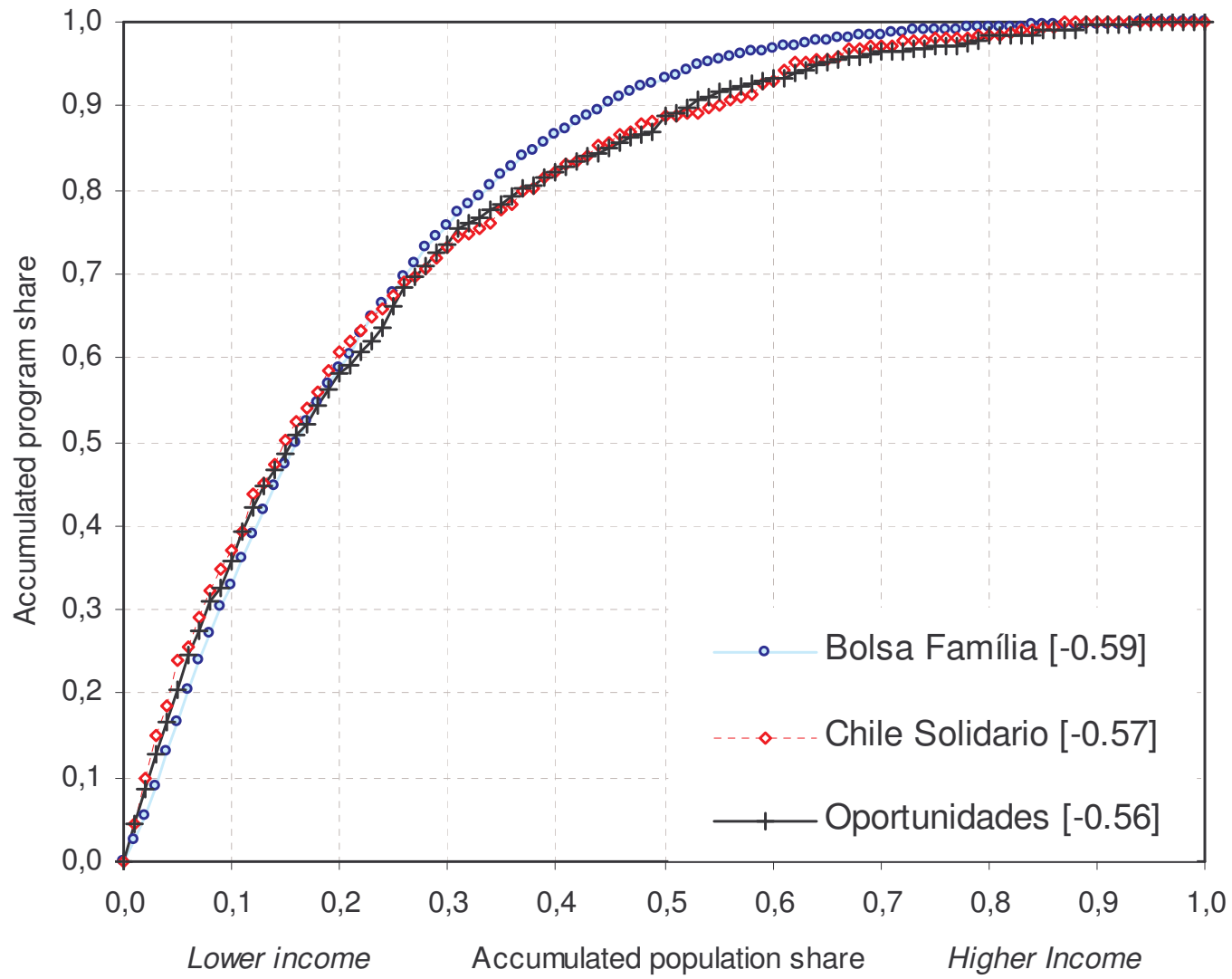
$$G = \sum_k c_k \mu_k$$

G is the Gini Coefficient,

c_k is the Concentration Coefficient for income source k

m_k is the percentage of income k in total income.

Comparative conditional cash transfer programs



What are the concentration coefficients and weights?

	Income Source	Brazil		Chile		Mexico	
		1995	2004	1996	2003	1996	2004
G - Gini	Total	0.5985	0.5711	0.5630	0.5620	0.5374	0.5103
	Labour	0.5943	0.5633	0.5692	0.5815	0.5420	0.5080
Conc. Coefficient	Social Security	0.5858	0.6118	0.4778	0.4201	0.5646	0.6320
	Other	0.7422	0.6206	0.5715	0.5186	0.4764	0.5264
	CCT		-0.5271		-0.5383		-0.4855
	Labour	0.8204	0.7260	0.8319	0.8164	0.8906	0.8600
Weight in total income	Social Security	0.1425	0.2270	0.0701	0.0794	0.0298	0.0501
	Other	0.0371	0.0419	0.0980	0.1041	0.0795	0.0844
	CCT		0.0051		0.0001		0.0055
	Labour	0.8204	0.7260	0.8319	0.8164	0.8906	0.8600

Contribution to inequality reduction

	Income Source	Brazil		Chile		Mexico	
		Value	%	Value	%	Value	%
- Change in Gini	Total	-0.0274	100	-0.0011	100	-0.0272	100
Concentration effect	Labour	-0.0239	87.3	0.0101	-941.2	-0.0297	109.5
	Social Sec.	0.0048	-17.5	-0.0043	401.7	0.0027	-9.9
	Other	-0.0021	7.5	-0.0048	450.2	0.0018	-6.7
Composition effect	Labour	0.0006	-2.1	-0.0002	18.6	0.0000	0.1
	Social Sec.	0.0012	-4.3	-0.0011	98.1	0.0015	-5.6
	Other	-0.0023	8.3	-0.0006	57.9	0.0022	-7.9
Sum	Labour	-0.0234	85.2	0.0099	-922.7	-0.0298	109.6
	Social Sec.	0.0060	-21.8	-0.0054	499.8	0.0042	-15.5
	Other	-0.0043	15.8	-0.0054	508.2	0.0040	-14.7
	CCT	-0.0057	20.8	-0.0002	14.7	-0.0056	20.5

Conclusions (valid for middle-income countries)

- There are many paths to targeting.
 - Chile – close support by agent
 - Mexico – census of the poor (and sophisticated decision)
 - Brazil – municipalities do the selection (with guidance)
- The “conditional” is perhaps not necessary for targeting, and thus, for inequality reduction.
- In the long run? In the long run we are all dead and people are hungry now.