

# Fiscal Policy, Urban-Rural Inequality and Rural Poverty in Brazil

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CEQ  
COMMITMENT  
TO EQUITY  
LATIN AMERICA



INTER-AMERICAN  
DIALOGUE



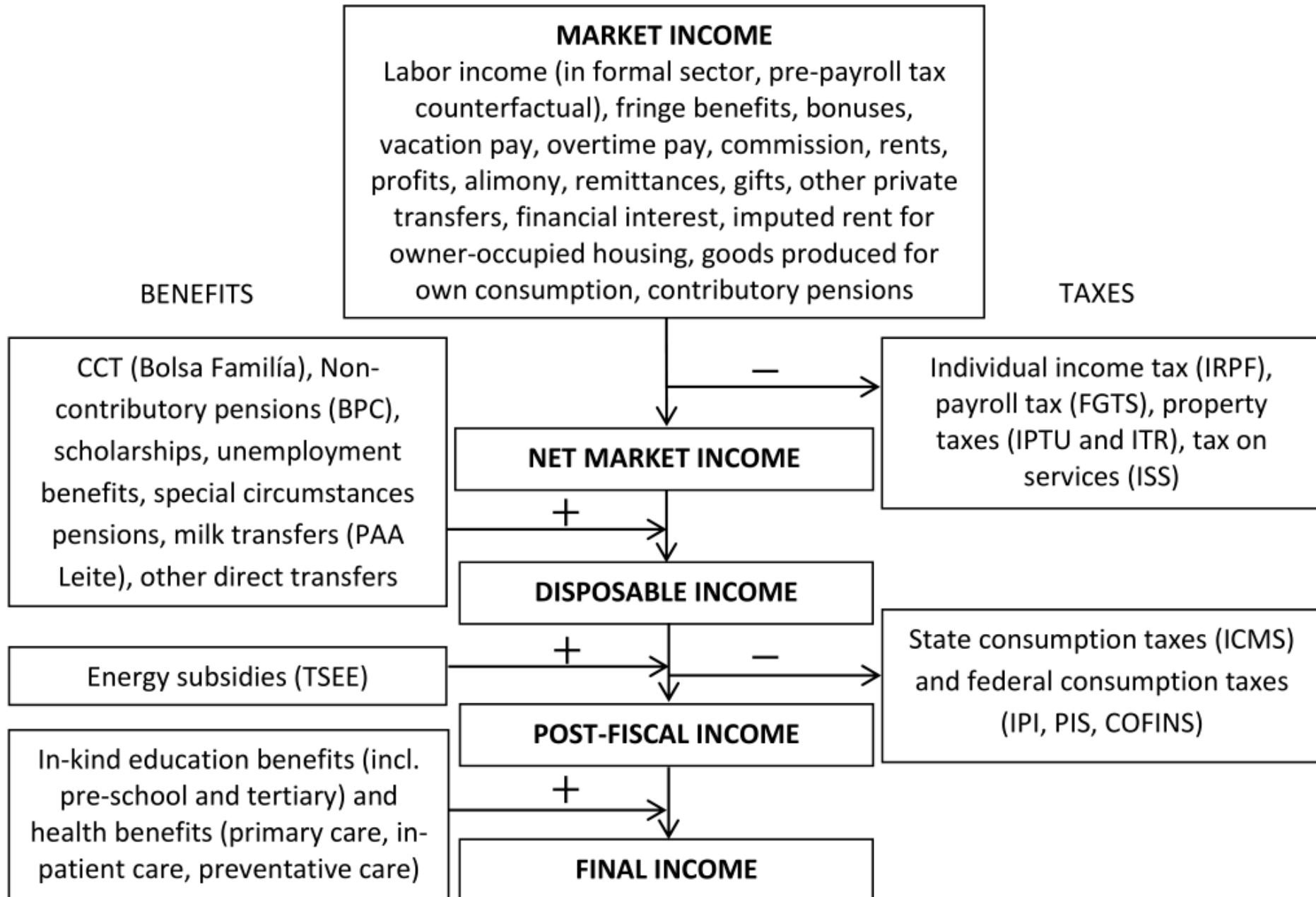
# Introduction

- Other studies
  - Helfand et al. (2008)
  - Neri (2011)
- Our contribution:
  - Most comprehensive study to date:
    - Transfers
    - Subsidies
    - Indirect taxes
  - Comparable methodology (CEQ)

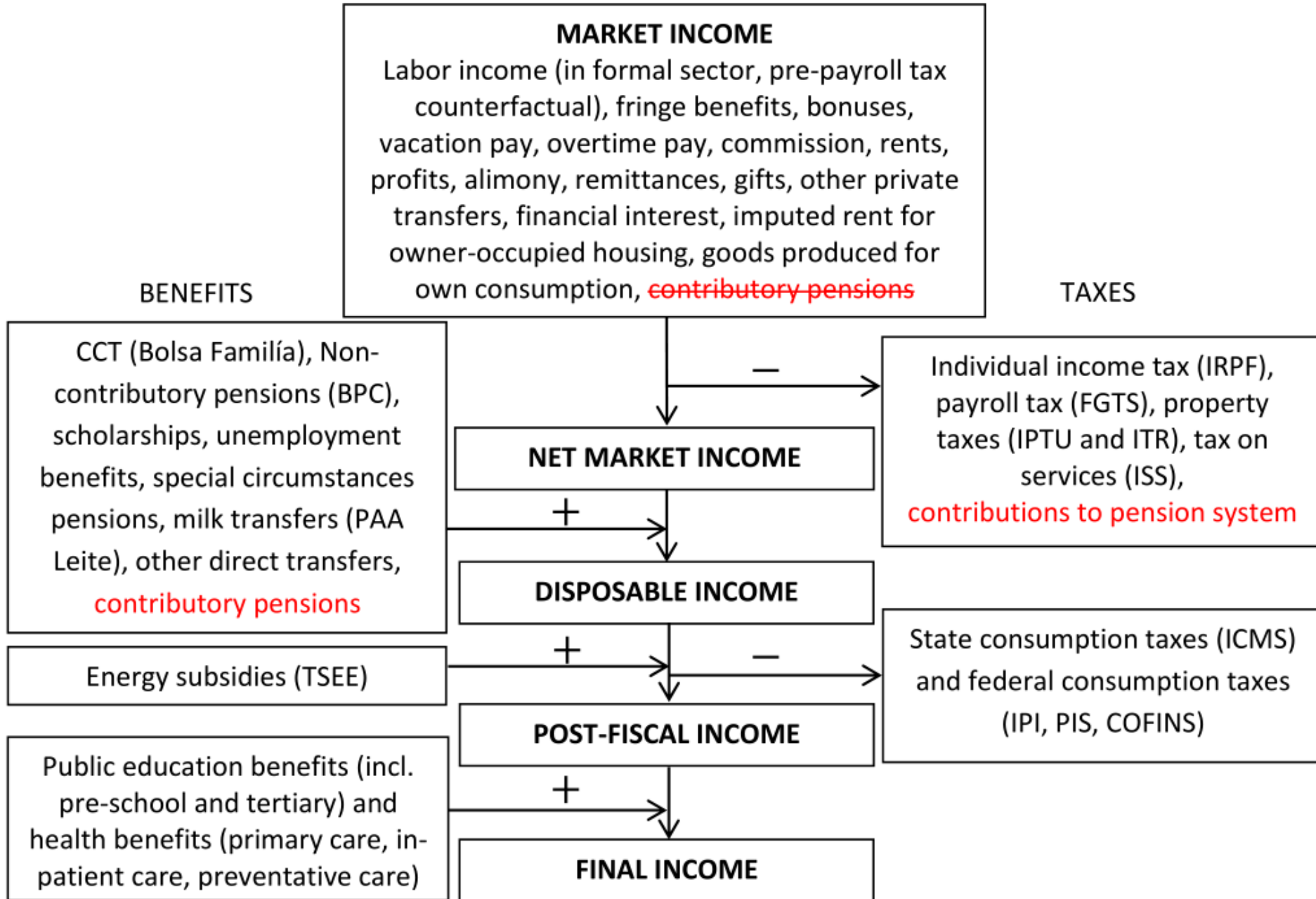
# Introduction

Population, 2009 (1000s)						
	Total	%	Urban	%	Rural	%
Brazil	191796		161041	83.96	30755	16.04
North	15555	8.11	12125	7.53	3430	11.15
South	27776	14.48	23113	14.35	4663	15.16
Northeast	54020	28.17	39310	24.41	14710	47.83
Southeast	80466	41.95	74203	46.08	6263	20.36
Midwest	13978	7.29	12289	7.63	1689	5.49

# Definition of income concepts: Benchmark case



# Definition of income concepts: **Sensitivity analysis**



# Data

- POF 2008-20009
  - Labor income
  - Direct taxes
  - Use of public education
  - Consumption
- Health
  - PNAD 2008
- National accounts
  - Revenue
  - Spending

# Direct Transfers

- Bolsa Família
  - Conditional cash transfer program for the poor
  - Health and education conditions
  - 41.2 million individuals in beneficiary families in 2009 (MDS 2011)
  - Average benefit per person living in a beneficiary household: \$0.35 PPP per day
- BPC
  - Non-contributory pension for elderly poor
  - 3.2 million beneficiaries in 2009 (SAGI/MDS 2012)
  - Average benefit per person living in a beneficiary household: \$2.18 PPP per day

# Direct Transfers (continued)

- Unemployment insurance
  - Require working continuously for six months prior to layoff
  - 8 million beneficiaries in 2009 (Ministério do Trabalho 2011)
  - Average benefit per person living in a beneficiary household: \$0.74 PPP per day
- Special circumstances pensions
  - Part of contributory system but considered non-contributory because of low or no contribution requirements and means-testing
  - 2.9 million beneficiaries in 2009 (INSS 2011)
  - Average benefit per person living in a beneficiary household : \$5.22 PPP per day



# Direct Transfers (continued)

- Milk transfers (PAA Leite)
  - Largest food transfer program in Brazil
  - Provides milk to low-income households with child, pregnant woman, or elderly
  - In Northeast region and part of Minas Gerais state
  - Eligible households receive one or two free liters of milk per day
- Other direct transfers
  - Minimum income programs (state and municipal)
  - Government auxílios
  - Basic food basket program

# Targeted Energy Subsidies

- Social Tariff on Electric Energy (TSEE)
  - Price subsidy for low income households with total energy consumption below 220 kWh per month
  - Discount ranges from 10% to 65%
  - Average benefit per person in a beneficiary household: \$0.36 PPP per day

# In-Kind Benefits

- Public education
  - Free at all levels including pre-school and tertiary
- Public health care
  - No national health insurance system
  - Unified Health System (SUS) guarantees free and unlimited access to care at public health facilities
    - Part of 1988 Constitution

# Taxes

- 35% of GDP
- Direct taxes are 45% of total, indirect 55%
- High exemption threshold and large informal sector  
→ less than 10% of economically active pay individual income tax
- Many indirect taxes
  - ICMS, IPI, PIS, COFINS, ...
  - “Cascading effect”

# Methodology: Direct Transfers

- Direct identification from survey
- Bolsa Família
  - Discrepancy between total beneficiary households in national accounts (12.1 million) and survey (7.3)
  - Use propensity score matching method (Souza, Osório, and Soares 2011) to impute benefits to very similar households who did not report receiving benefits
- Milk transfers (PAA Leite)
  - Assumed milk consumed with the form of purchase reported as “donation” by households in eligible states came from the program

# Methodology: Energy Subsidies

- Lack data on consumption in kilowatt hours (kWh) which determines program eligibility
- Have (post-tax) energy consumption in R\$/month
- Collect data on (pre-tax) prices for all Brazilian energy companies and within each state, average across companies in that state
- Combine with tax code for electricity in that state and with subsidy rates to determine consumption in kWh
- Calculate benefit
  - Spending for household's consumption in kWh at market rates minus actual spending

# Methodology: Indirect Taxes

- ICMS and IPI
  - Group consumption goods into nine categories
  - Apply effective tax rates for these categories calculated by Nogueira et al. (2011)
    - Uses input-output matrix
    - Accounts for evasion
- PIS and COFINS
  - Apply effective tax rates by decile calculated by Rezende and Afonso (2010)

# Methodology: Health Benefits

- Alternate survey (PNAD 2008 health supplement)
- Group types of health services reported in PNAD into 3 aggregate categories
  - Primary care
  - In-patient care
  - Preventative care
- From administrative data, calculate average per-visit spending by state and by type of care
- Impute this benefit to individuals in that state who received that type of care from a public facility



# Results

## Inequality

Benchmark					
	Market Income	Net Market Income	Disposable Income	Post-fiscal Income	Final Income
<b>National</b>	0.578	0.563	0.542	0.539	0.464
<b>Urban</b>	0.567	0.552	0.5331	0.535	0.448
% change wrt market income		-1.4	-3.4	-3.2	-11.8
% change wrt net market income			-1.9	-1.7	-10.4
<b>Rural</b>	0.559	0.552	0.516	0.0519	0.362
% change wrt market income		-0.06	-4.2	-4	-19.6
% change wrt net market income			-3.6	-3.3	-19

# Results

## Inequality

Sensitivity Analysis (pensions as government transfers)					
	Market Income	Net Market Income	Disposable Income	Post-fiscal Income	Final Income
<b>National</b>	0.594	0.591	0.540	0.537	0.460
<b>Urban</b>	0.586	0.581	0.531	0.533	0.443
% change wrt market income		-0.05	-5.6	-5.3	-14.2
% change wrt net market income			-5	-4.7	-13.7
<b>Rural</b>	0.599	0.594	0.514	0.516	0.359
% change wrt market income		-0.05	-8.5	-8.3	-24
% change wrt net market income			-8	-7.7	-23.5

# Results

## Poverty

Benchmark		
	Market Income	Post-fiscal Income
<b>National</b>		
Headcount index (%)		
\$1.25 PPP/day (ultra poor)	5.80%	4.50%
\$2.5 PPP/day (extreme poor)	15.10%	16.30%
\$4 PPP/day (poor)	26.20%	31.00%
<b>Urban</b>		
Headcount index (%)		
\$1.25 PPP/day (ultra poor)	4.30%	3.20%
\$2.5 PPP/day (extreme poor)	11.90%	13.00%
\$4 PPP/day (poor)	22.00%	26.70%
<b>Rural</b>		
Headcount index (%)		
\$1.25 PPP/day (ultra poor)	13.90%	11.20%
\$2.5 PPP/day (extreme poor)	32.50%	34.80%
\$4 PPP/day (poor)	49.40%	54.30%

- Poverty is worsened after accounting for all taxes and transfers !
- Indirect taxes have a deleterious effect on poverty
- But not true on sensitivity analysis (pensions as government transfers) for rural areas

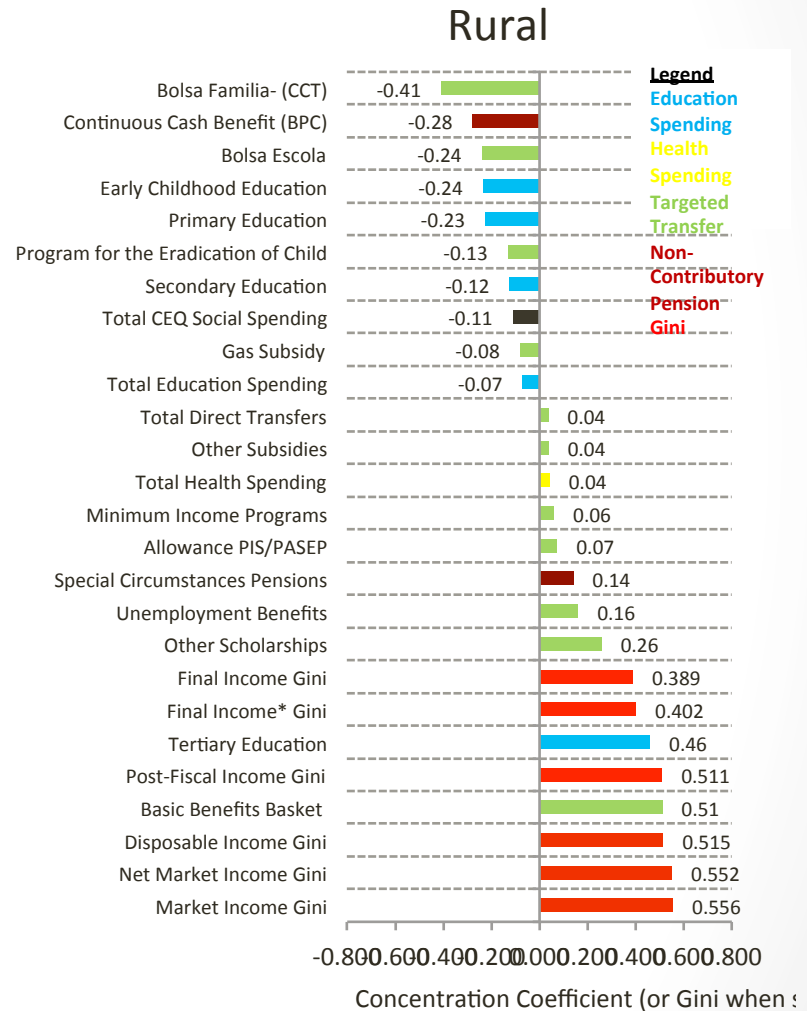
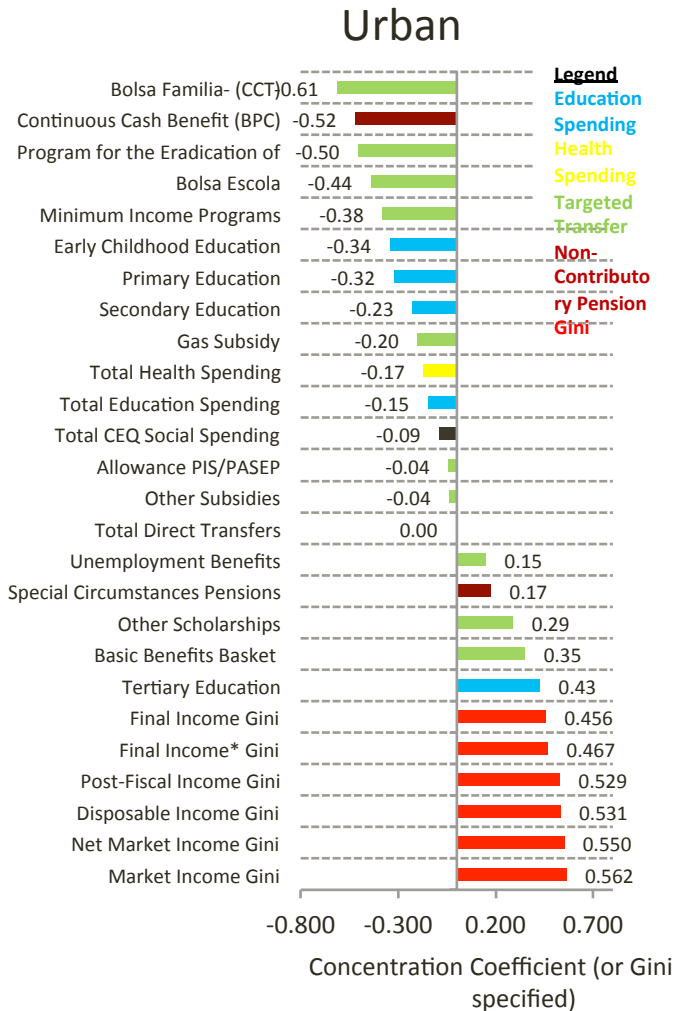
# Results

## Incidence of Taxes and Transfers

- Incidence of transfers is significantly higher in rural areas
- But indirect taxes have a deleterious effect on post-fiscal income
- At the national level, households from the fourth decile onward become net payers
- In rural areas, households in the fifth decile and above become net payers
- If we include in-kind transfers, final income for the first four deciles in rural areas is at least twice as large as market income. In urban areas, only the first decile more than doubles its income compared to market income.
- The overall urban population is a net payer

# Results

## Concentration Coefficients



# Results

## Coverage and Leakages

- For all programs (direct and in-kind), the share of benefits going to the poor is higher in rural areas
- 80% of total Bolsa Familia benefits paid to rural households accrue to the poor compared to 65% of the program's payments in urban areas. 94% of the rural extreme poor receive Bolsa Familia compared to 81% of the urban extreme poor
- Bolsa familia average benefit \$0.38/day in rural areas compared to \$0.35 PPP/day in urban areas
- All direct transfers:
  - Urban: 23% accrue to the poor
  - Rural: 57% accrue to the poor
- BPC, Tertiary education only 8% of benefits go to the poor
- "Urban bias" : average beneficiary in urban areas: \$0.99 PPP/day compared to \$0.64 PPP/day In rural areas (Special Circumstances pensions and scholarships)

# Results

## Closing extreme poverty gap

- It will require broader coverage and higher benefits in rural areas
- The two main programs: Bolsa Familia and BPC are well-targeted programs with low leakages, but eligibility cut-off needs to be changed
- Bolsa familia cut-offs:  
Unconditional benefit is \$1.34 PPP/day (R\$70/month) – just above the ultra poor line of \$1.25 PPP/day  
Conditional benefit: R\$140, lower than the poverty line used by IPEA for rural areas
- BPC cut-off: one fourth of one monthly minimum wage (R\$117 reais in 2009) is lower than IPEA's cost of basic need poverty lines
- Achieve universal coverage with current cut-off points  
(Soares, Ribas, and Soares ,2010): 19 million households (13.4 million in 2011)
- Fiscal feasibility: Bolsa Familia and BPC are less than 1% of GDP in 2009

# Conclusions

- Most progressive programs (Bolsa Família, BPC, milk transfers) are small
  - In terms of budget share (each <0.6% of GDP)
  - And in terms of average benefit per beneficiary
- Indirect taxes offset the poverty-reducing benefits of direct transfers and indirect subsidies
  - Post-fiscal income ***poverty is higher*** than market income poverty for most poverty lines
- Fiscal policy had a larger impact on inequality in rural than urban areas
- Poverty is higher in rural areas compared to urban areas



# Conclusions

- Coverage of the ultra-poor is not universal (Brasil Sem Miséria)
- Eligibility cut-off of Bolsa Família and BPC could be increased
- Tertiary education has low coverage among the poor in both urban and rural areas
- Health spending is only relatively progressive in rural areas

# Conclusions

- Policy recommendations:
  - Reform of the tax system (a very small change was implemented earlier this year). Basic food staples as rice and beans pay about 17% of indirect taxes.
  - Change on the eligibility cut-offs for Bolsa Familia and BPC
  - Increased access to tertiary education and public health for the rural poor
  - **“There is no future in rural poverty – the path to prosperity inevitably runs through cities”** (Ed Glaeser and A. Joshi-Ghani, Economic Premise, World Bank, Number 126, October 2013)

Obrigado !