New Patterns of Structural Change and Effects on Inclusive Development
A Case Study of South Africa and Brazil

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Prepared for UNU-WIDER Conference
September 5-6, 2014

Background

- Recent industrializers have not been following the previously observed patterns in terms of sectoral change and employment (Timmer and Akkus 2008; UNRISD 2010; van der Hoeven 2010, 2012; McMillan and Rodrik 2012; Rodrik 2013a, 2013b; Subramanian 2014).

- The effect of these changing structural patterns on well-being has not yet been systematically examined.

Overview

- Created a household level multi-dimensional indicator of well-being, analyzed using growth incidence curves and decomposition of change.

- Studying insertion of households into the economy via employment and geographical location and the extent to which the residents of those households are sharing in the benefits from growth.

Overview

- Initial results here suggest that current patterns contradict received models of development and distribution in some ways.

- Redistribution alone may not be insufficient in creating inclusive development if the patterns of structural change do not sufficiently involve people in the processes of growth, particularly through accessible and remunerative employment.

Methods of Analysis

- Focused country case studies, using qualitative and quantitative analysis.

- The analysis combines the household level multi-dimensional indicator of well-being with the applications of the non-income growth incidence curve (NIGIC) techniques of Klasen (2008) and Peragine et al (2013), as well as the techniques for decomposition of change by sector first introduced by Ravallion and Huppi (1991), with modifications based on van Ark and Timmer (2003).

Data

IPUMS-International (Minnesota Population Center 2013)
 Original Sources:

South Africa the Population Census 1996 and Community Survey 2007

Brazil 1991 General Census X and 2010 General Census XII

Sample sizes used (total households with sufficient data to create indicator):

South Africa 1996: 420,795 households
South Africa 2007: 98,753 households
Brazil 1991: 1,118,840 households
Brazil 2010: 1,448,319 households

Multidimensional Well-being

Table 1. Multidimensional Index of Well-Being			
Category	Variables	Weighting	Weighting by category
Health Index	Child Survival Rate	1/3	1/3
Material Conditions Index	Phone	1/18	1/3
	Water Supply (ordinal normalized to 0-1)	1/18	
	Toilet (ordinal normalized to 0-1)	1/18	
	Rooms per person(normalized to 0-1)	1/18	
	Electricity	1/18	
	Cooking Fuel	1/18	
Education Index	School Age Enrollment Rate	1/6	1/3
	Ratio of Adults Primary Completed	1/12	
	Ratio of Adults Higher Secondary Completed	1/12	

Household "Types"

Agriculture Rural
Agriculture Urban
Rural non-farm
Urban high-productivity secondary and mining
Urban low productivity services and secondary
Urban midlevel productivity services
Urban high productivity services
Urban public employment
Rural unemployed
Urban unemployed
Rural-not in labor market
Urban-not in labor market
Rural unclassified
Urban unclassified

"Type" NIGIC

$$g^T\left(\frac{i}{m}\right) = \frac{\mu_{it} - \mu_{i(t-1)}}{\mu_{i(t-1)}}, \forall i \in \{1 \ldots m\}$$

$\mu_{i(t-1)}$ = the mean score for type *i* and time *t-1*, calculated for all types *m*. The types are put in ascending order according to their means in time *t-1*.

Decomposition of Change

$$\Delta WBI = \Delta WBI^{within} + \Delta WBI^{shift}$$

Within Group:

$$\Delta WBI^{within,i} = (WBI_t^i - WBI_{(t-1)}^i) * \left(\frac{P_t^i + P_{(t-1)}^i}{2}\right), \forall i\{1 \dots m\}$$

Shift:

$$\Delta WBI^{shift,i} = (P_t^i - P_{(t-1)}^i) * ((\left(\frac{(WBI_t^i + WBI_{(t-1)}^i)}{2}\right) - WBI^{shrinking}), \forall i\{1 \dots k\}$$

South Africa

Policy:
- Combination of redistributive policy/ basic needs fulfillment welfare state and neoliberal macroeconomic policies such as trade and financial liberalization (Aliber 2003, Padayachee 2005).

Employment and Inequality:
- Income inequality rose, inequality within each racial group was a bigger contributor to overall inequality (Leibbrandt et al 2012) , attributed to labor market outcomes (Bhorat et al 2009, Seekings and Nattrass 2002, Leibbrandt et al 2012).

Economic Structure:
- From 2000-2007, agricultural employment declined to less than 10%, manufacturing employment stagnated at around 14%, Low productivity services increased to about 22% (ILO 2014).
- From 1990s-2000s, agricultural 3-4% GDP, Manufacturing drops from more than 20% (1995) to less than 15%, Tertiary sector more than 60% GDP and growing (UNSTATS 2013).

Brazil

Policy:
- 1990s -a series of liberalizing and privatization reforms, and the introduction of inflation targets and strict fiscal guidelines, along with an increase in spending on health, education, and on the social safety net (Burlamaqui, Souza, and Barbosa-Filho, 2006)
- Post-2004, continued focus on inflation targeting, along with increased efforts at social and economic inclusion (Salazar-Xirinachs, Nubler, and Kozul-Wright 2014), re-emphasis on industrial policy (Kupfer, Ferraz, and Marques 2013, Salazar-Xirinachs, Nubler, and Kozul-Wright 2014).

Employment and Inequality:
- Historically one of the world's most unequal countries, but positive improvements in income inequality in the 2000s (Lustig, Lopez-Calva, Ortiz-Juarez 2011).
- Lustig, Lopez-Calva, Ortiz-Juarez (2011) attribute the decline in inequality to three main factors, a decrease in the gaps between wages by education level, increased integration of urban and non-urban labor markets, and more and better targeted government transfers .

Economic Structure:
- From early 1990s to 2000s, manufacturing as % of GDP declined from 25% to 17%, agriculture from 10% to 5%, low productivity services (wholesale and retail trade, restaurants) from 7% GDP in 1991 to 20% in 2010 (UNSTATS 2013).
- Manufacturing peaked at 15%, and then began to decline after the late 1980s (Rodrik 2013a), to about 14% of the labor force in the 2000s (ILO 2014).
- Agricultural -almost 40% of total employment in 1980(de Vries et al 2011), in high teens and still shrinking in 2000s, Wholesale and retail trade-18% in 2009 (ILO 2014).

Results

South Africa:1996 - 2007

Brazil: 1991- 2010

Descriptive Statistics

Table 2.	South Africa 1996 Average Score	South Africa 2007 Average Score	Annual Rate of Change Over Period
All	65.63	73.61	1.04%
Black	60.38	70.88	1.46%
White	88.2	88.87	0.07%
Coloured	75.07	79.7	0.54%
Rural	54.08	64.9	1.66%
Urban	76.26	79.34	0.36%

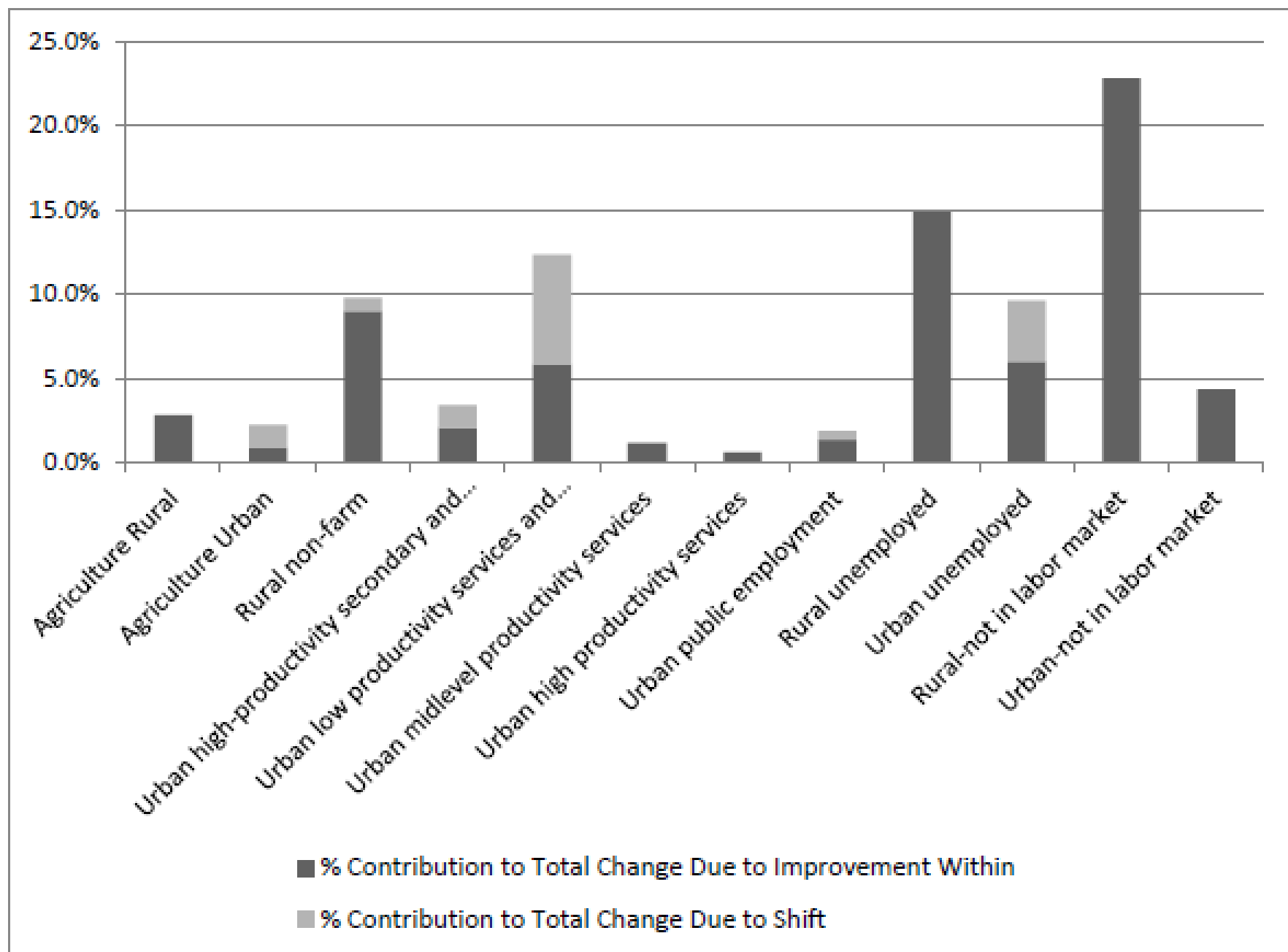| Table 3.	Brazil 1991 Average Score	Brazil 2010 Average Score	Annual Rate of Change Over Period
All	63.36	77.71	1.07%
White	68.35	80.18	0.84%
Black	57.79	76.25	1.46%
Indigenous	47.2	69.75	2.06%
Asian	78.75	78.98	0.02%
Brown	58.14	75.56	1.38%
Rural	48.27	68.48	1.84%
Urban	67.91	79.35	0.82%

Type-NIGICs
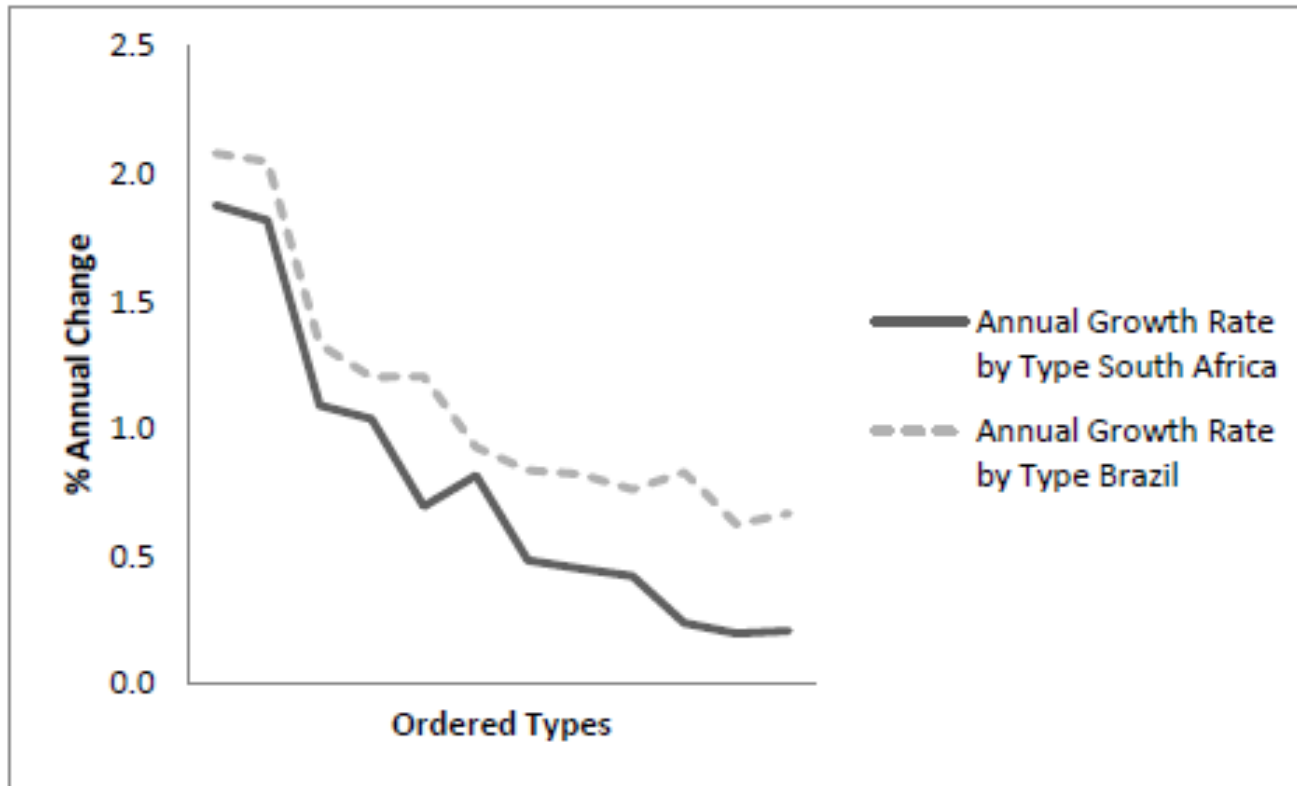
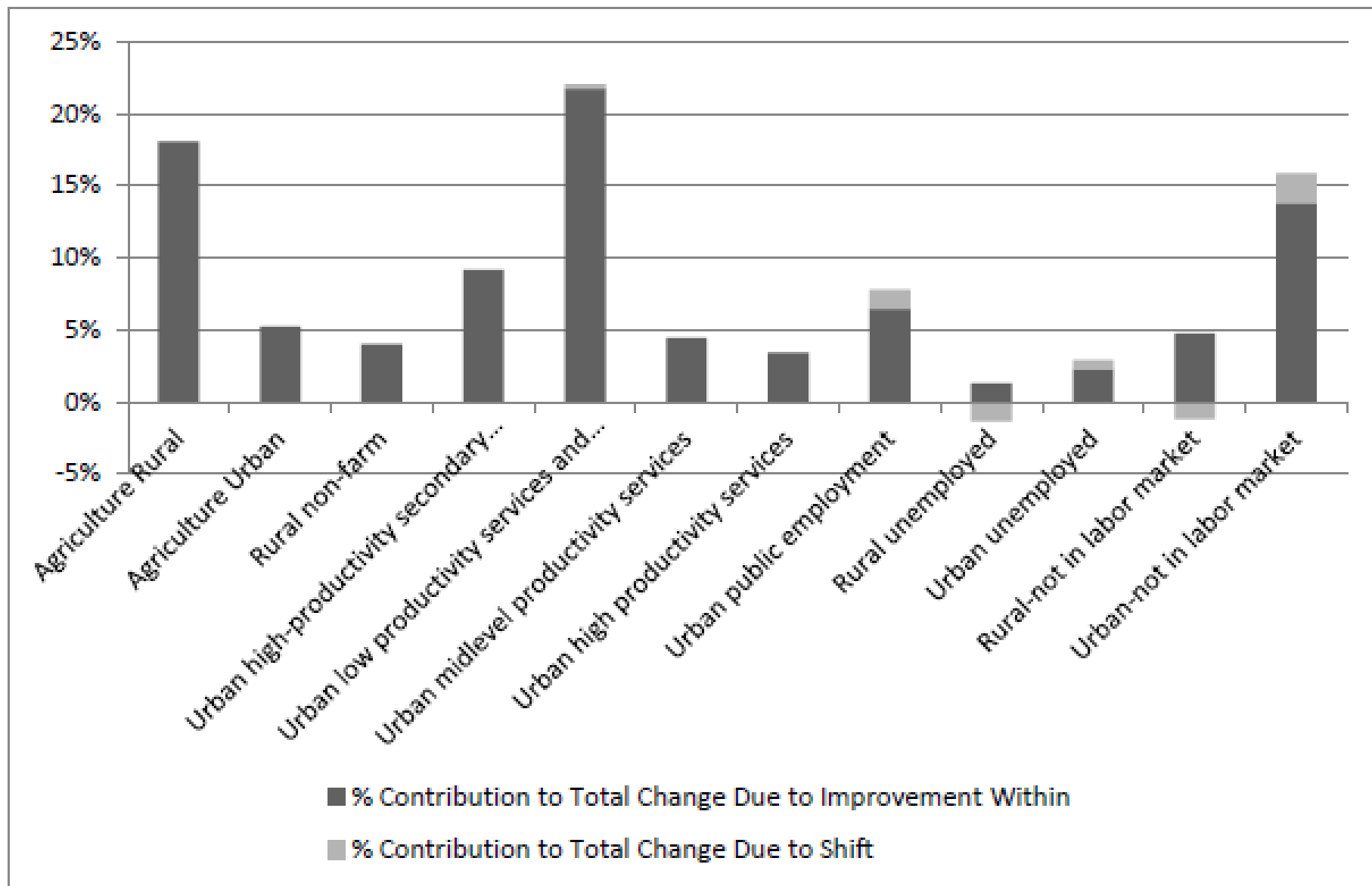| Table 4.	South Africa 1996		South Africa 2007		Annual Rate of Change Over Period
Geographic/Employment Groups	Average Score	% Pop.	Average Score	% Pop.	
Agriculture Rural	57.03	4%	64.31	2%	1.09%
Agriculture Urban	70.52	1%	77.16	1%	0.82%
Rural non-farm	62.15	9%	69.68	10%	1.04%
Urban high-productivity secondary and mining	79.58	8%	81.69	8%	0.24%
Urban low productivity services and secondary	75.32	10%	79.15	14%	0.45%
Urban midlevel productivity services	79.47	3%	83.25	2%	0.42%
Urban high productivity services	84.8	3%	86.75	2%	0.21%
Urban public employment	83.76	6%	85.59	6%	0.20%
Rural unemployed	53	11%	64.74	9%	1.82%
Urban unemployed	69.39	7%	74.91	10%	0.70%
Rural-not in labor market	50.38	22%	61.95	10%	1.88%
Urban-not in labor market	71.75	11%	75.68	7%	0.48%
Rural unclassified	58.75	2%	62.84	9%	0.61%
Urban unclassified	78.61	4%	78.93	10%	0.04%

Table 5.	Brazil 1991		Brazil 2010		Annual Rate of Change Over Period
Geographic/ Employment Groups	Average Score	% Pop.	Average Score	% Pop.	
Agriculture Rural	46.33	17%	68.38	6%	2.05%
Agriculture Urban	59	6%	74.19	3%	1.21%
Rural non-farm	57.75	4%	72.59	3%	1.20%
Urban high-productivity secondary and mining	69.48	13%	80.31	10%	0.76%
Urban low productivity services and secondary	67.3	26%	78.67	26%	0.82%
Urban midlevel productivity services	69.85	6%	81.77	5%	0.83%
Urban high productivity services	74.27	5%	83.64	5%	0.63%
Urban public employment	74.36	8%	84.42	9%	0.67%
Rural unemployed	50.79	0%	65.42	2%	1.33%
Urban unemployed	64.85	1%	76.03	4%	0.84%
Rural-not in labor market	44.91	2%	66.71	4%	2.08%
Urban-not in labor market	64.43	11%	76.86	19%	0.93%
Rural unclassified	50.32	0%	70.79	0%	1.80%
Urban unclassified	65.19	0%	81.06	4%	1.15%

Figure 3. Decomposition of Improvement South Africa

Legend:
- ■ % Contribution to Total Change Due to Improvement Within
- ■ % Contribution to Total Change Due to Shift

Categories (x-axis): Agriculture Rural, Agriculture Urban, Rural non-farm, Urban high-productivity secondary and..., Urban low productivity services and..., Urban midlevel productivity services, Urban high productivity services, Urban public employment, Rural unemployed, Urban unemployed, Rural-not in labor market, Urban-not in labor market

Y-axis: 0.0%, 5.0%, 10.0%, 15.0%, 20.0%, 25.0%

Table 6.	South Africa 1996-2007	
	% Contribution to Total Change Due to Improvement Within	% Contribution to Total Change Due to Shift
Agriculture Rural	3%	.
Agriculture Urban	1%	1%
Rural non-farm	9%	1%
Urban high-productivity secondary and mining	2%	1%
Urban low productivity services and secondary	6%	7%
Urban midlevel productivity services	1%	.
Urban high productivity services	1%	.
Urban public employment	1%	1%
Rural unemployed	15%	.
Urban unemployed	6%	4%
Rural-not in labor market	23%	.
Urban-not in labor market	4%	.
Rural unclassified	3%	-1%
Urban unclassified	0.3%	12%
Total	75%	25%

Figure 4. Decomposition of Improvement Brazil

Legend:
- % Contribution to Total Change Due to Improvement Within
- % Contribution to Total Change Due to Shift

Categories:
Agriculture Rural, Agriculture Urban, Rural non-farm, Urban high-productivity secondary..., Urban low productivity services and..., Urban midlevel productivity services, Urban high productivity services, Urban public employment, Rural unemployed, Urban unemployed, Rural-not in labor market, Urban-not in labor market

Table 7.	Brazil 1991-2010	
	% Contribution to Total Change Due to Improvement Within	% Contribution to Total Change Due to Shift
Agriculture Rural	18%	.
Agriculture Urban	5%	.
Rural non-farm	4%	.
Urban high-productivity secondary and mining	9%	.
Urban low productivity services and secondary	22%	0.3%
Urban midlevel productivity services	4%	.
Urban high productivity services	3%	.
Urban public employment	6%	1%
Rural unemployed	1%	-1%
Urban unemployed	2%	1%
Rural-not in labor market	5%	-1%
Urban-not in labor market	14%	2%
Rural unclassified	0.3%	-0.1%
Urban unclassified	2%	1%
Total	97%	3%

Initial Observations

South Africa

- Initially poorer performing households and groups have gained more but large gaps remain "catch-some groups were still performing worse in 2007 than even mid-level groups were in 1996.

- Majority of the improvement came from improvement within the lower performing groups, and much less of the improvement came from movement from lower to higher groups.

- Biggest positive change from structural shift was towards low productivity urban services. But, low productivity urban services are worse performers than urban high productivity work and public employment were in 1996.

Brazil

- Higher portion still in agriculture. Agricultural workers, though, were underperforming all groups except rural unemployed and not in labor market, and were still doing worse than most urban groups were in 1991.

- Almost no improvement from structural change. Large portion of the population already in low-level urban work, and the major source of improvement is within that type.

- Both countries have raised the floor on living standards for the worst performing groups, certainly, but have not succeeded in truly enabling members of those groups to "catch up. "

"Raising the floor" or "true inclusion"?