



# Poverty and Food Security: The Indian Experience

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# The Context

- India has been the second fastest growing economy in the last decade
- It is also the country with highest malnutrition levels
- Recent evidence clearly points to increasing inequality in all dimensions
- Latest data also shows a significant decline in poverty (2004-05 to 2009-10)
- The data also shows that despite all this, malnutrition levels are not showing similar improvement either based on outcome indicators or intake indicators such as calories

# Poverty, Nutrition and Food Security

- Link between poverty and food security
- Existence of Poverty-Nutrition Trap in developing countries
- Food expenditure is the largest component of expenditure for the poor
- In fact most absolute poverty lines are still anchored to some notion of nutrition or food intake
- Any food security intervention not only allows poor to get out of poverty nutrition trap but also allows them to escape poverty by improving welfare

# Even in United States

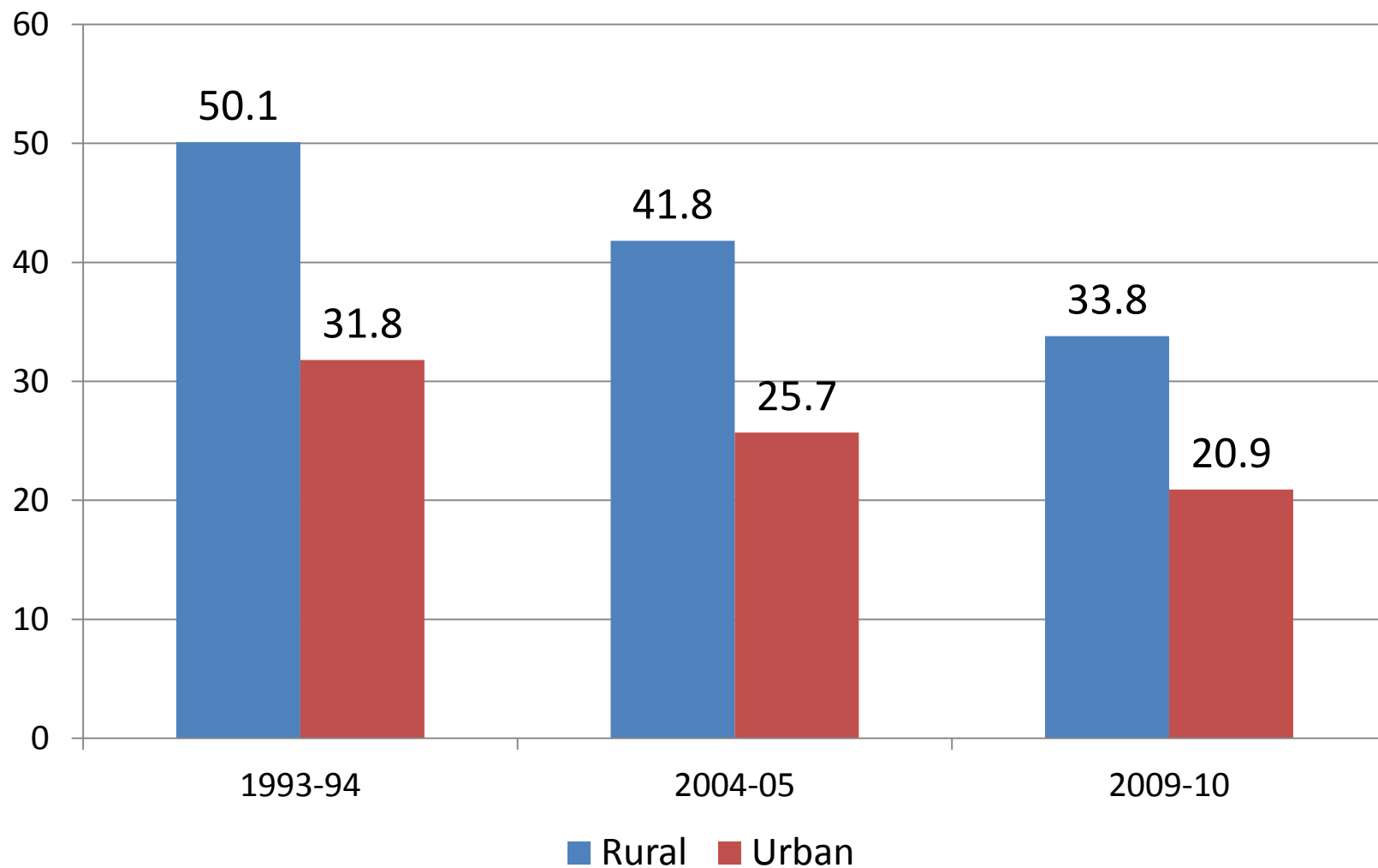
- According to the latest US census bureau annual poverty estimate, 46.2 million still live in poverty.
- But more important: Social Security alone kept 21.4 million out of poverty, unemployment benefit 2.3 million, SNAP(food stamps) 3.9 million and tax credits 5.7 million
- 280000 children benefit from free school lunch program

# India: Poverty

- Sporadic evidence on impact on poverty due to food security interventions
- The limited evidence does point to a significant impact on poverty
- The issue of food security and nutrition have been an important part of Indian poverty debate, particularly the calorie debate
- Primarily, because the trend in poverty has always been opposite of the trend in calorie intake

# Trends in Poverty

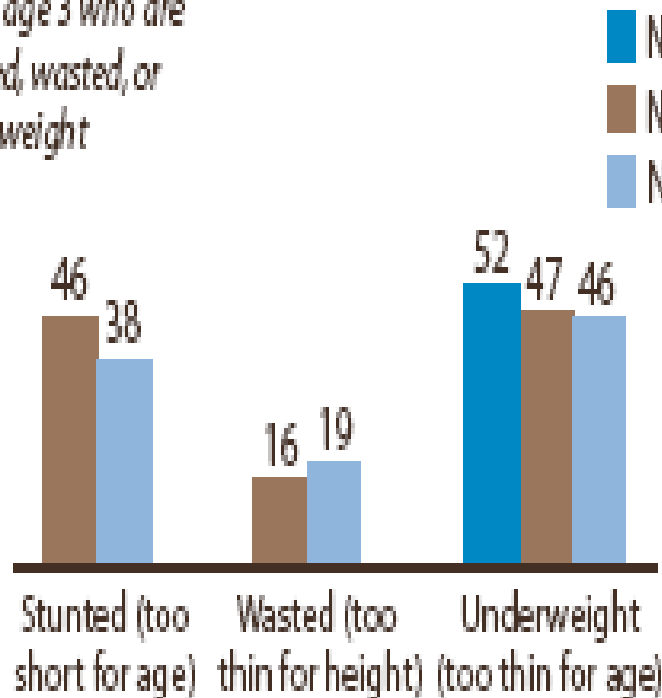
Poverty Head Count (Tendulkar Method)



# Nutritional Indicators: Recent data not available except calorie intake data.

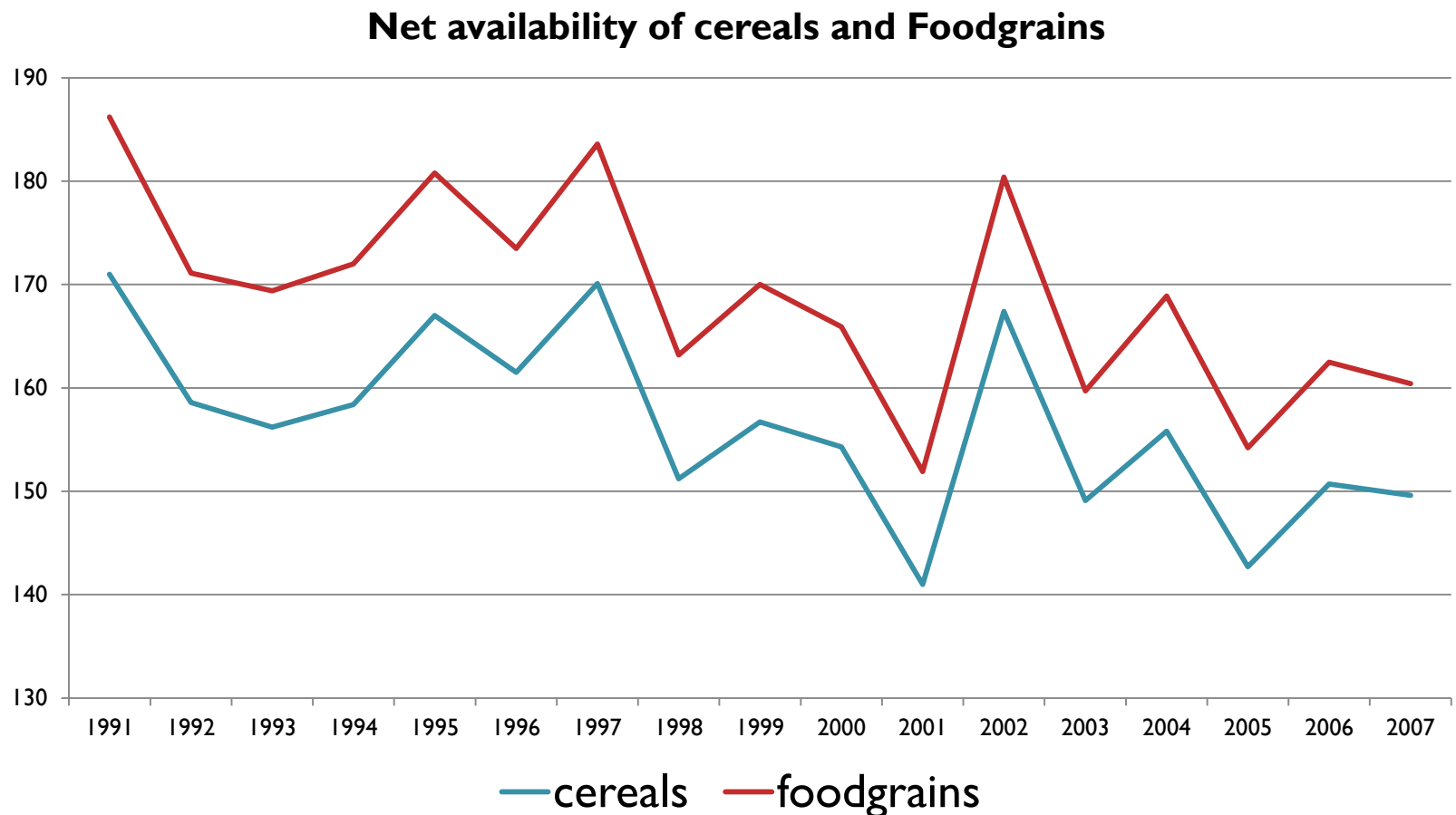
## Trends in Children's Nutritional Status

Percentage of children under age 3 who are stunted, wasted, or underweight



	Rural	Urban
1972-73	2266	2107
1983	2221	2089
1993-94	2153	2071
1999-00	2149	2156
2004-05	2047	2020
2009-10	2020	1946

Net availability of cereals and foodgrains have declined since the 1990s, reaching an all time low in the last three decades





# How to account for transfer payments

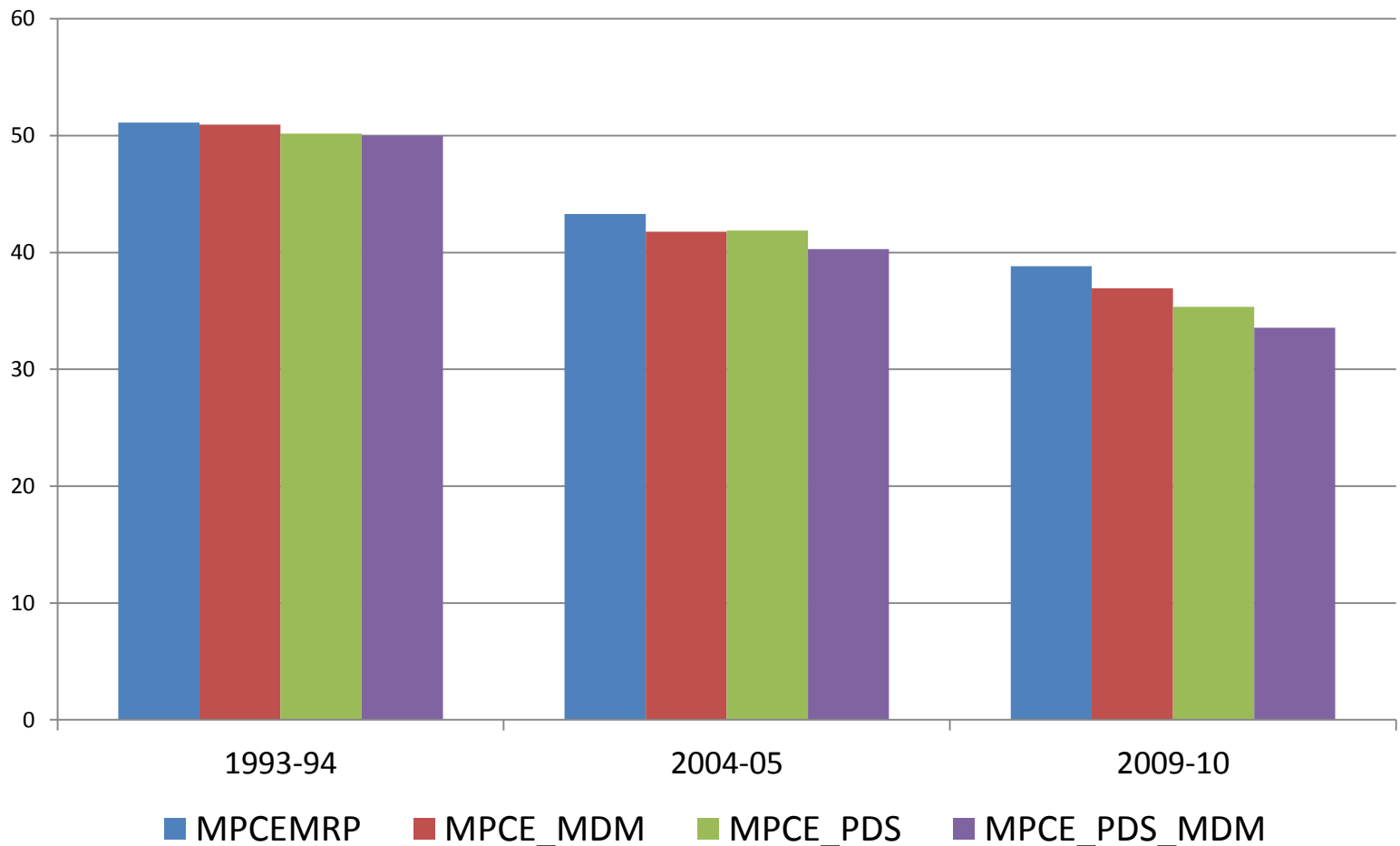
- The debate on poverty estimates in India has already raised the issue of how to treat transfer payments
- The 2009-10 round of data includes Mid-day-meal (MDM) expenditure as private expenditure.
- Excluding these poverty reduction is only 5.7 percentage points and not 7.4
- 18 million persons were lifted out of poverty just by inclusion of MDM expenditure

# PDS transfers

- Public distribution system is the largest food security intervention.
- Varies across states
- Quantum of transfers varies on the prices paid by consumers and also the access to households
- Different models exist but largely grain based
- A proper analysis also requires adjusting the poverty line
- Since PDS consumption is valued at paid out prices, the poverty line should be adjusted to take into account market prices

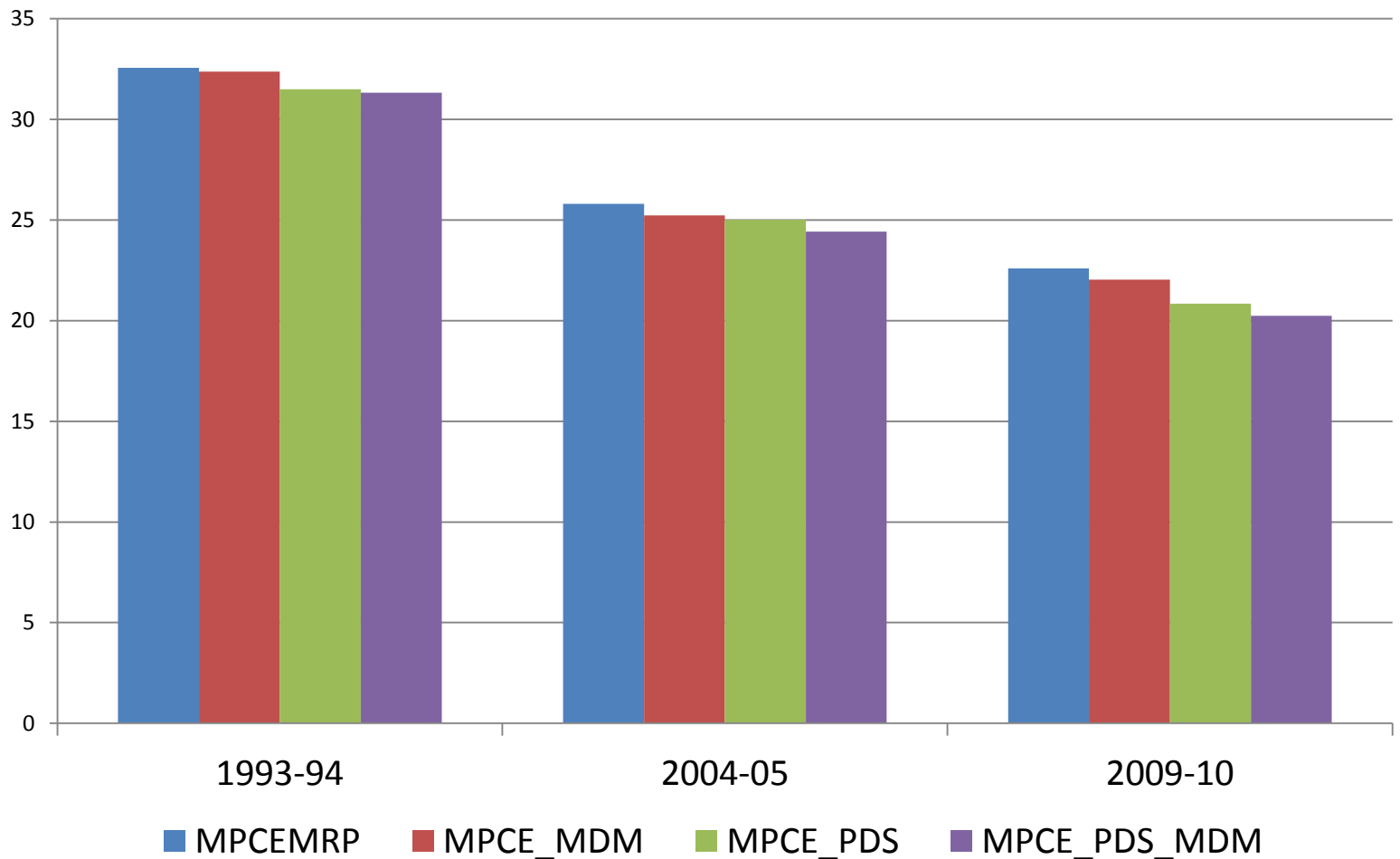
# Trends with poverty measures accounting for transfers: Rural

## Rural Poverty By Different Measures



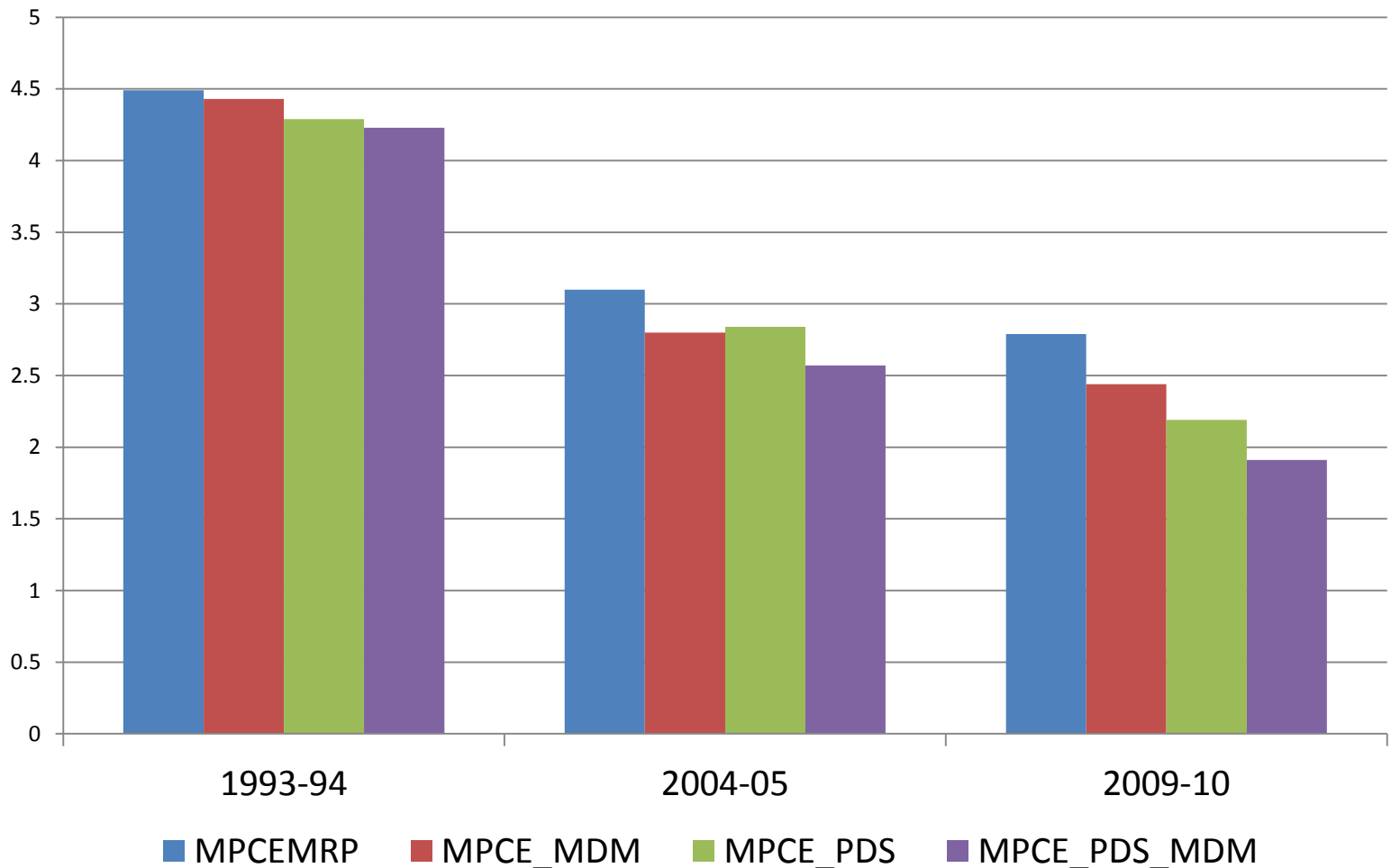
# Urban

## Urban Poverty By Different Measures



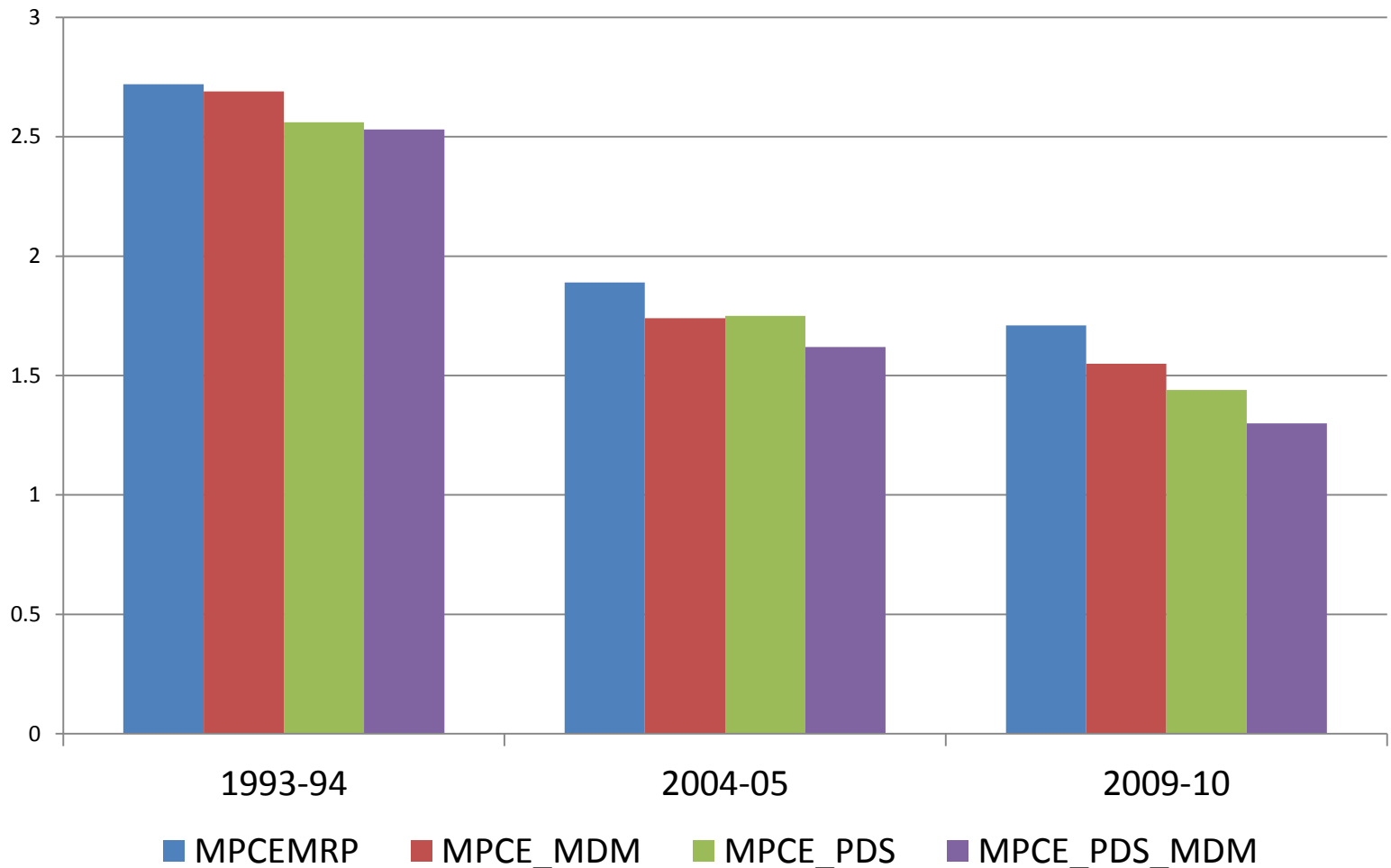
# The impact is much larger in case of higher order measures of poverty: Rural

Rural SPG By Different Measures



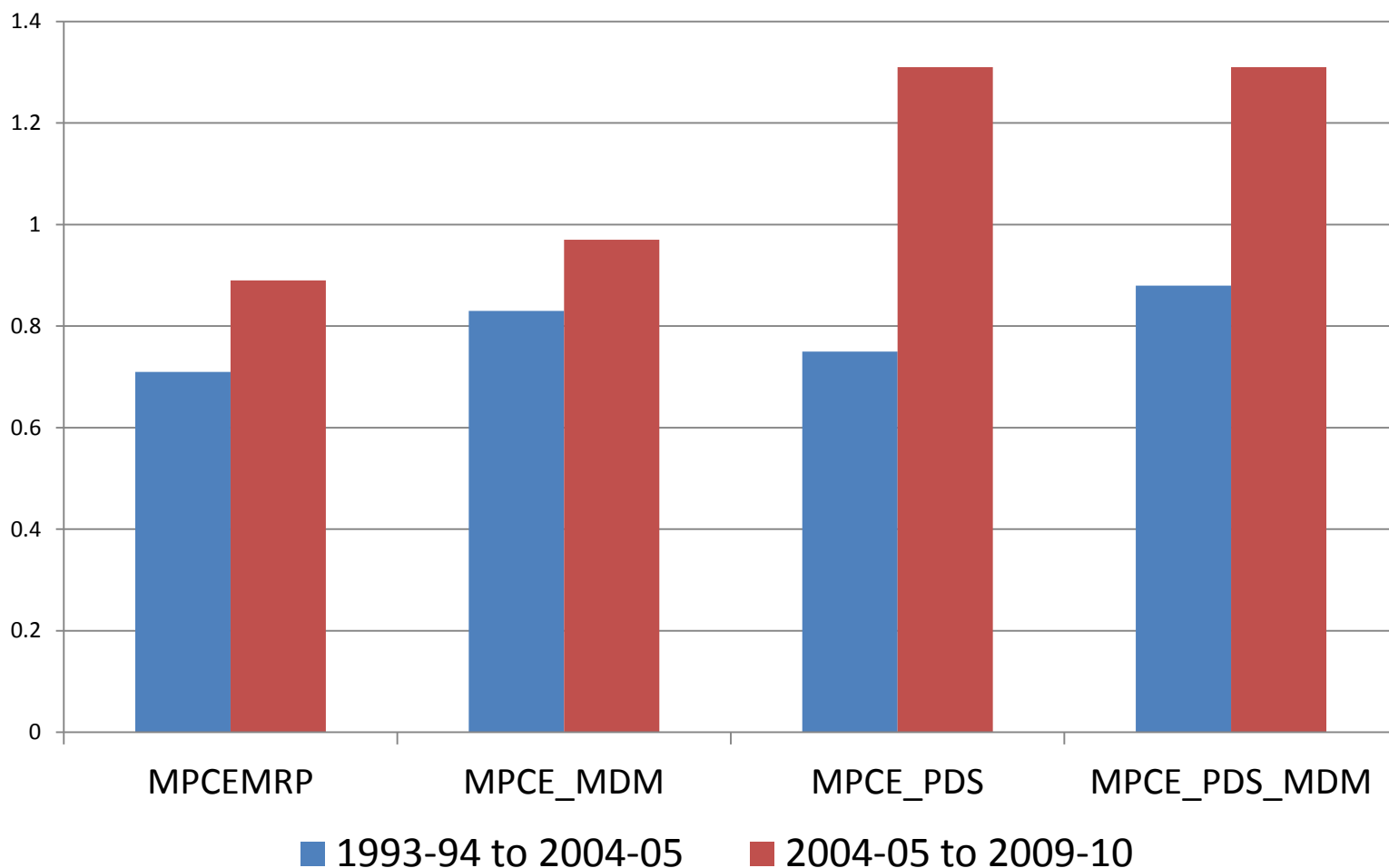
# Even Urban areas have seen a large impact of these transfers

Urban SPG By Different Measures



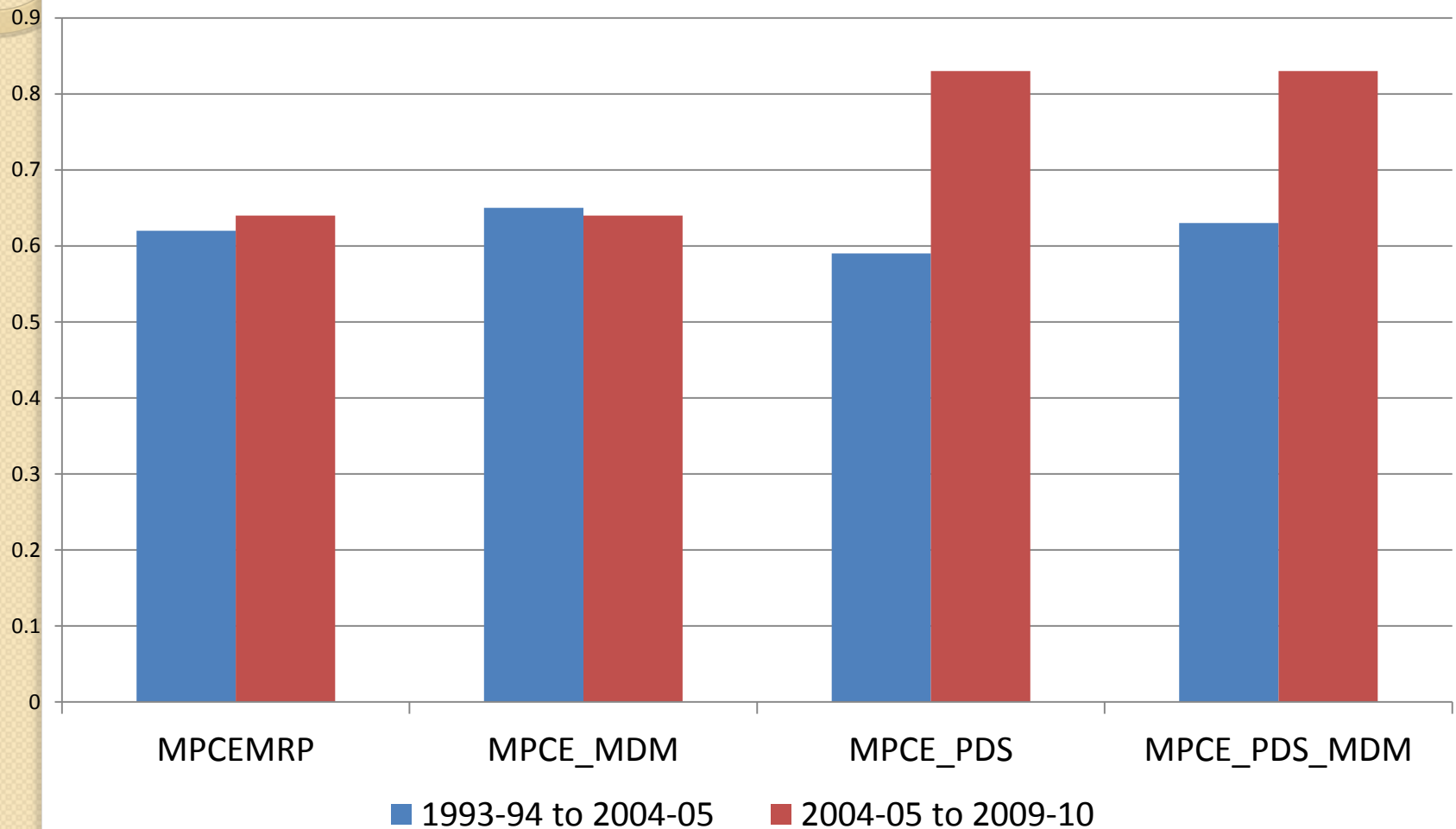
Although comparable poverty decline has been faster in the later period, it is much more significant in case of measures including transfers: Rural

**Percentage point decline per annum: Rural HCR**



# Urban

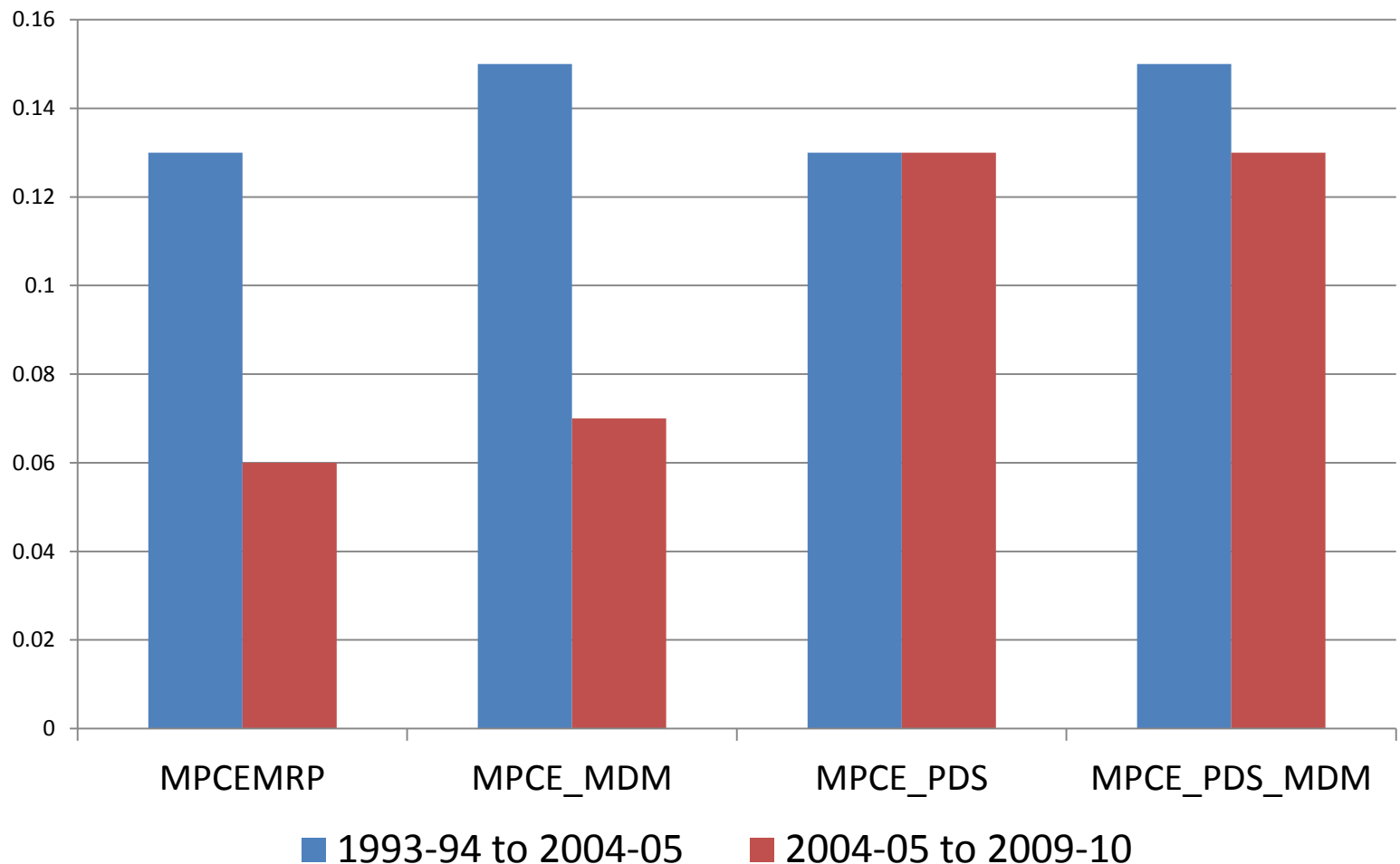
## Percentage point decline per annum: Urban HCR





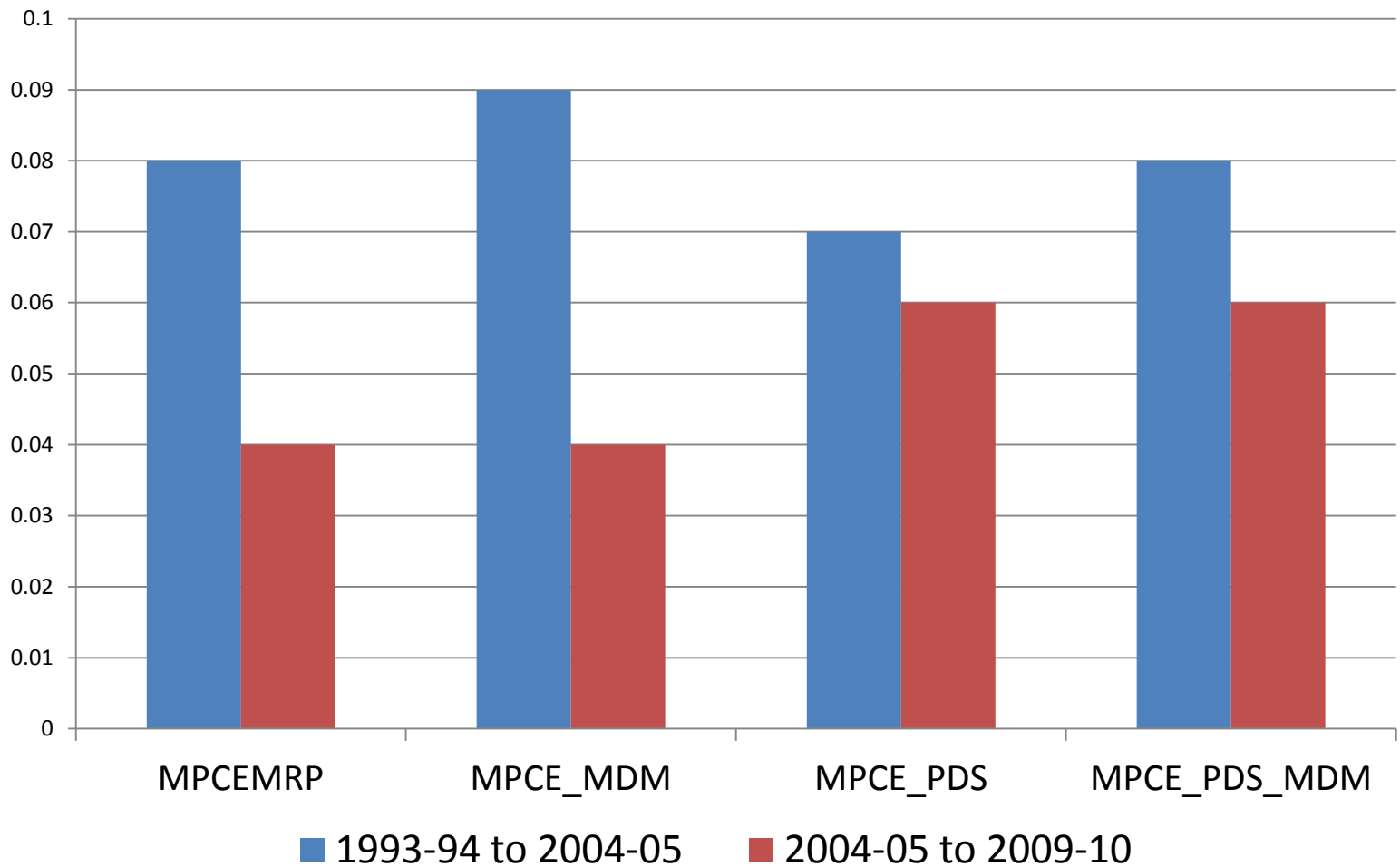
# However, matters are complicated once we use the higher order measures of poverty: Rural SPG

Percentage point decline per annum: Rural SPG



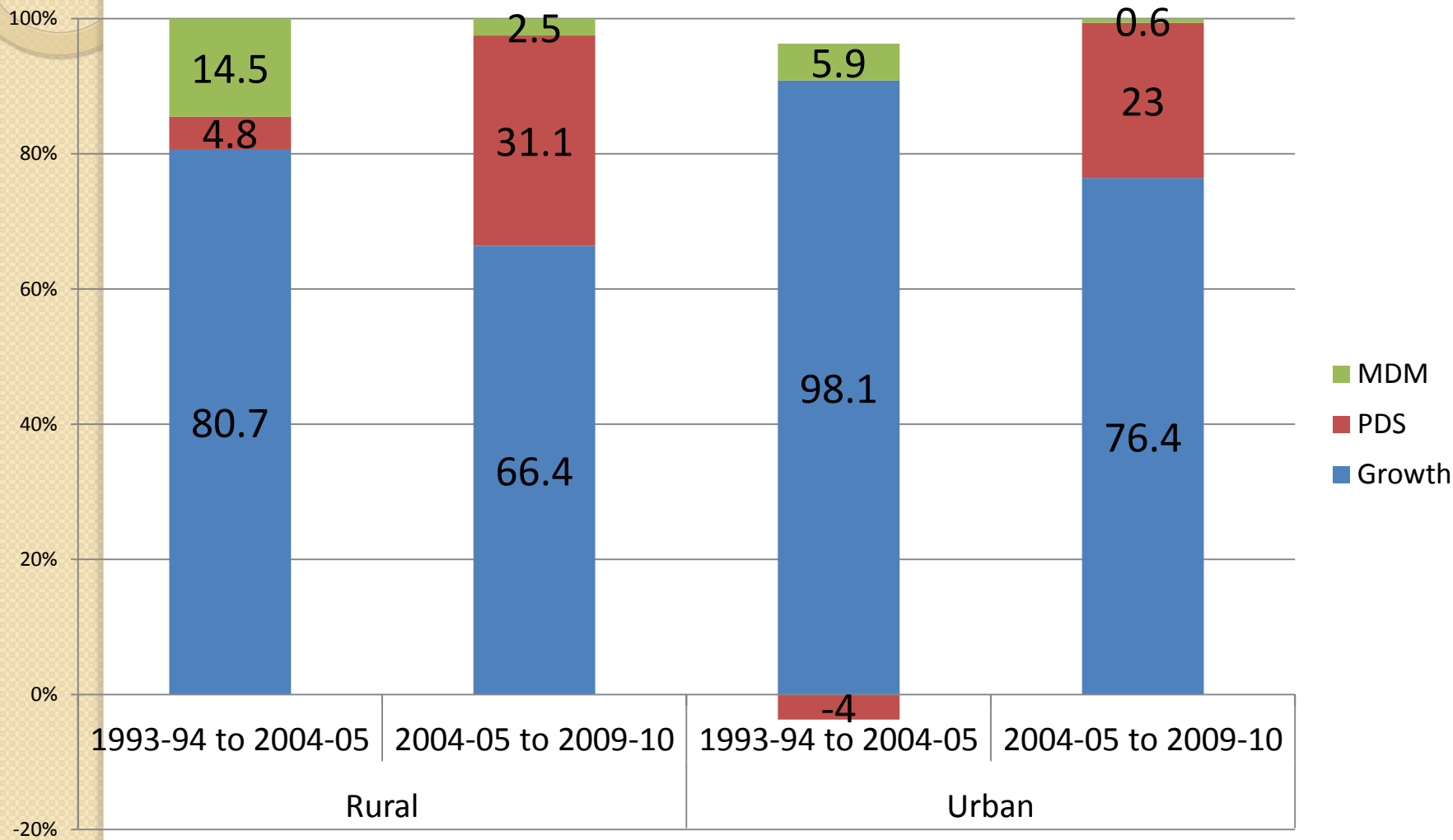
# Urban

**Percentage point decline per annum: Urban SPG**



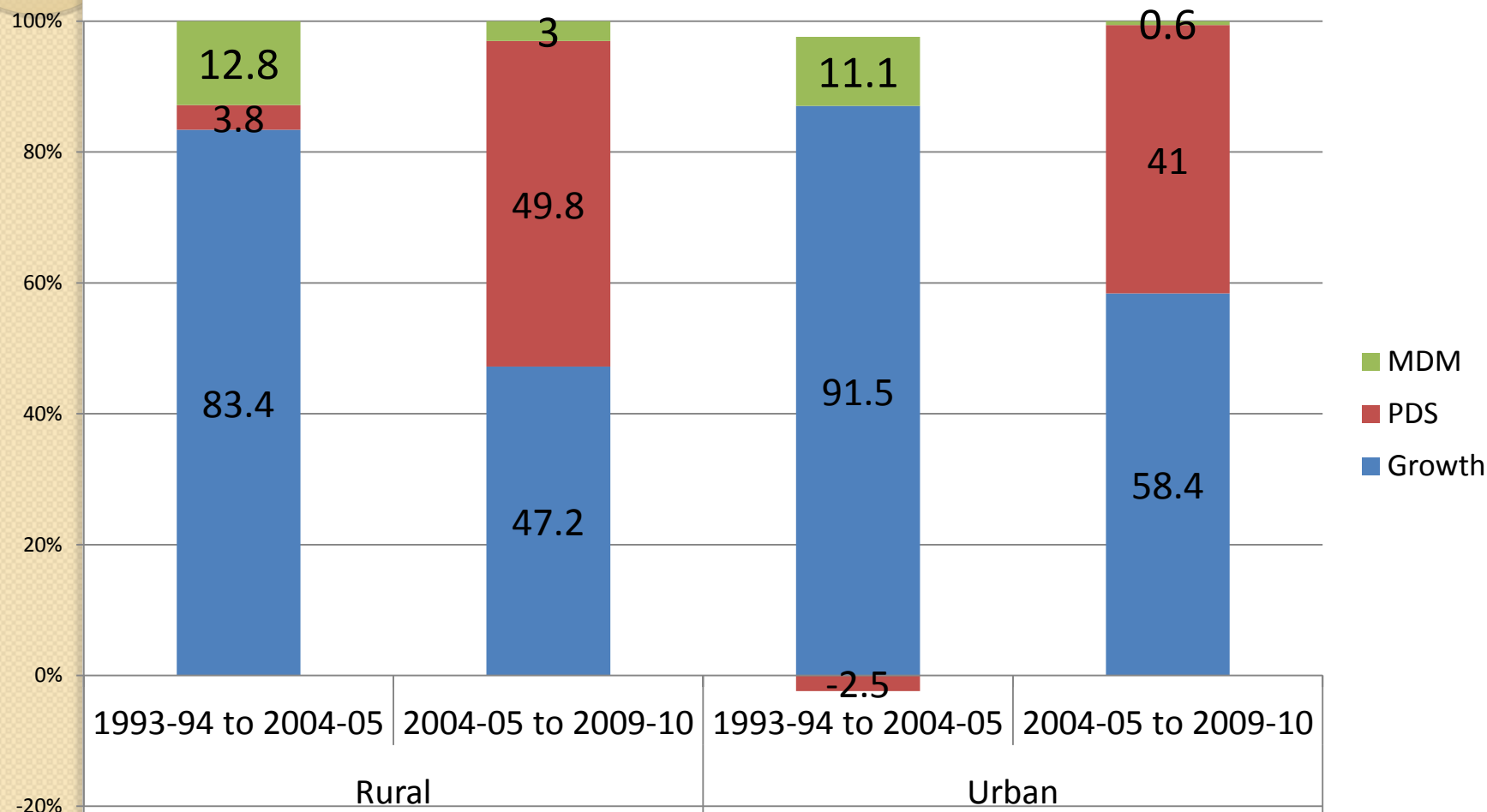
# Poverty decomposition: HCR

Decomposition of Poverty decline: HCR



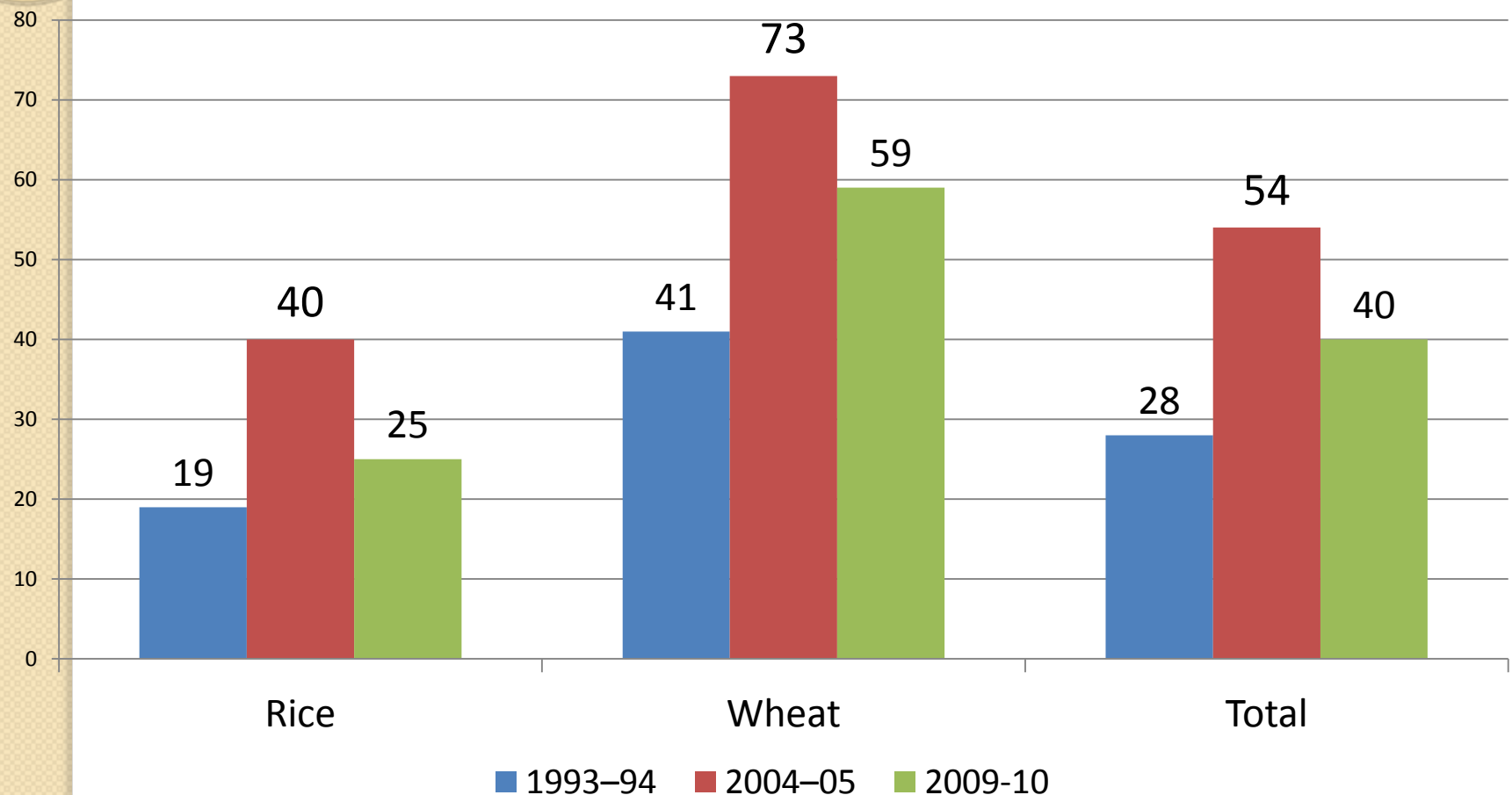
However, with the SPG measures, PDS contribution is higher than the growth contribution in the later period

## Decomposition of Poverty decline: SPG

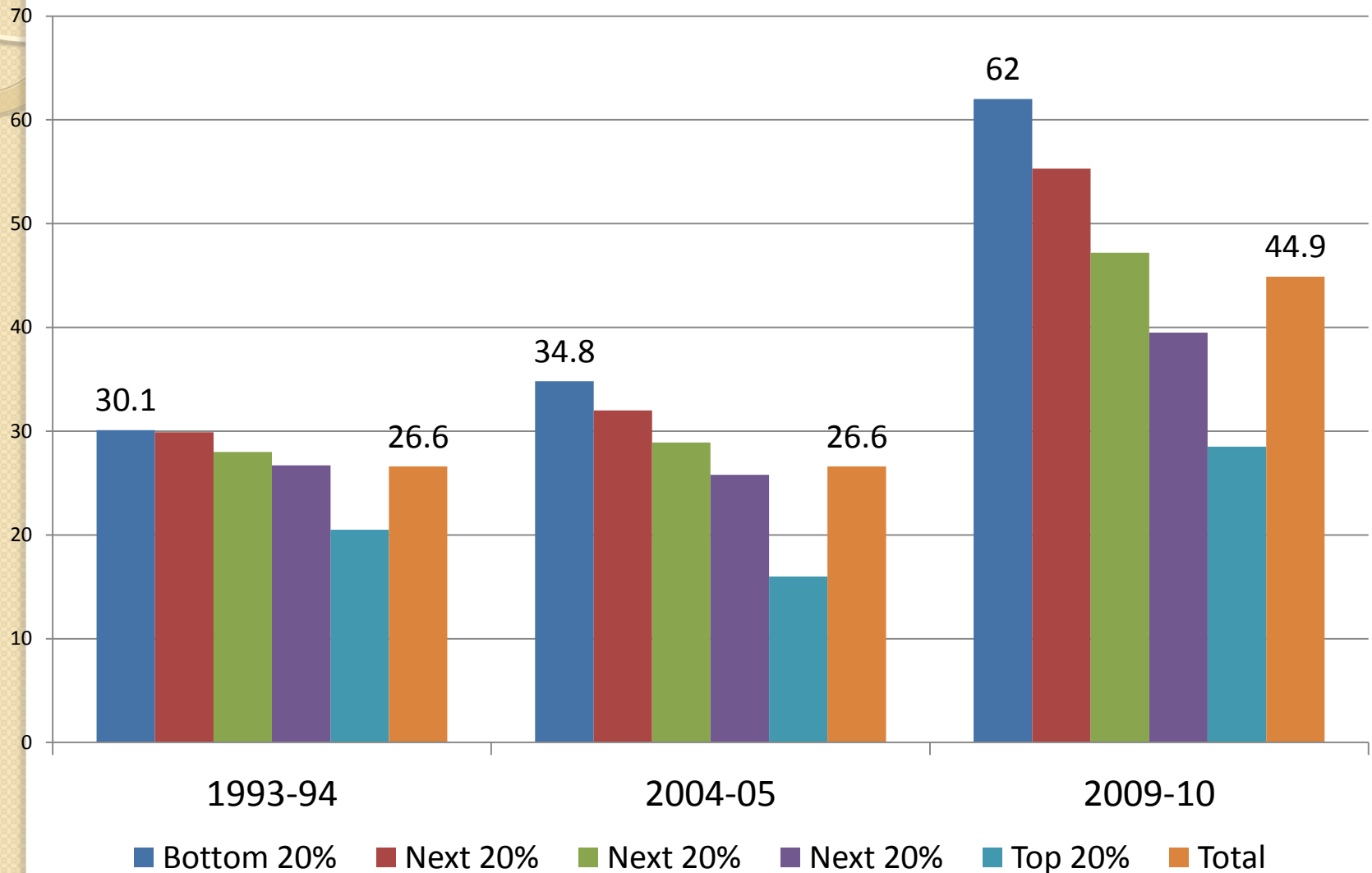


The significant impact in PDS is largely due to the reforms after 2004-05 which also had the impact of reduction in leakages

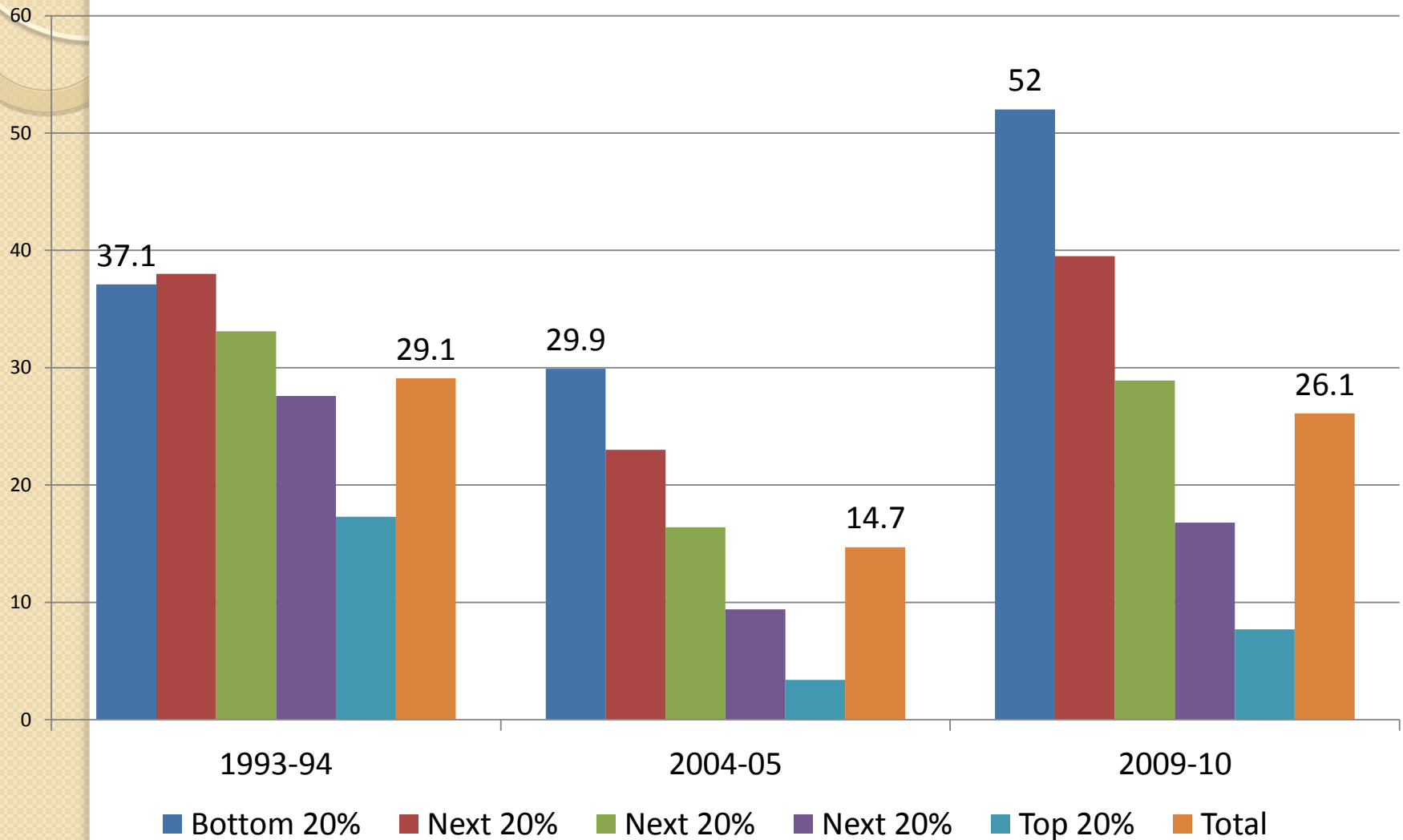
## Leakages in PDS



# Percentage of households accessing PDS has increased significantly: Rural

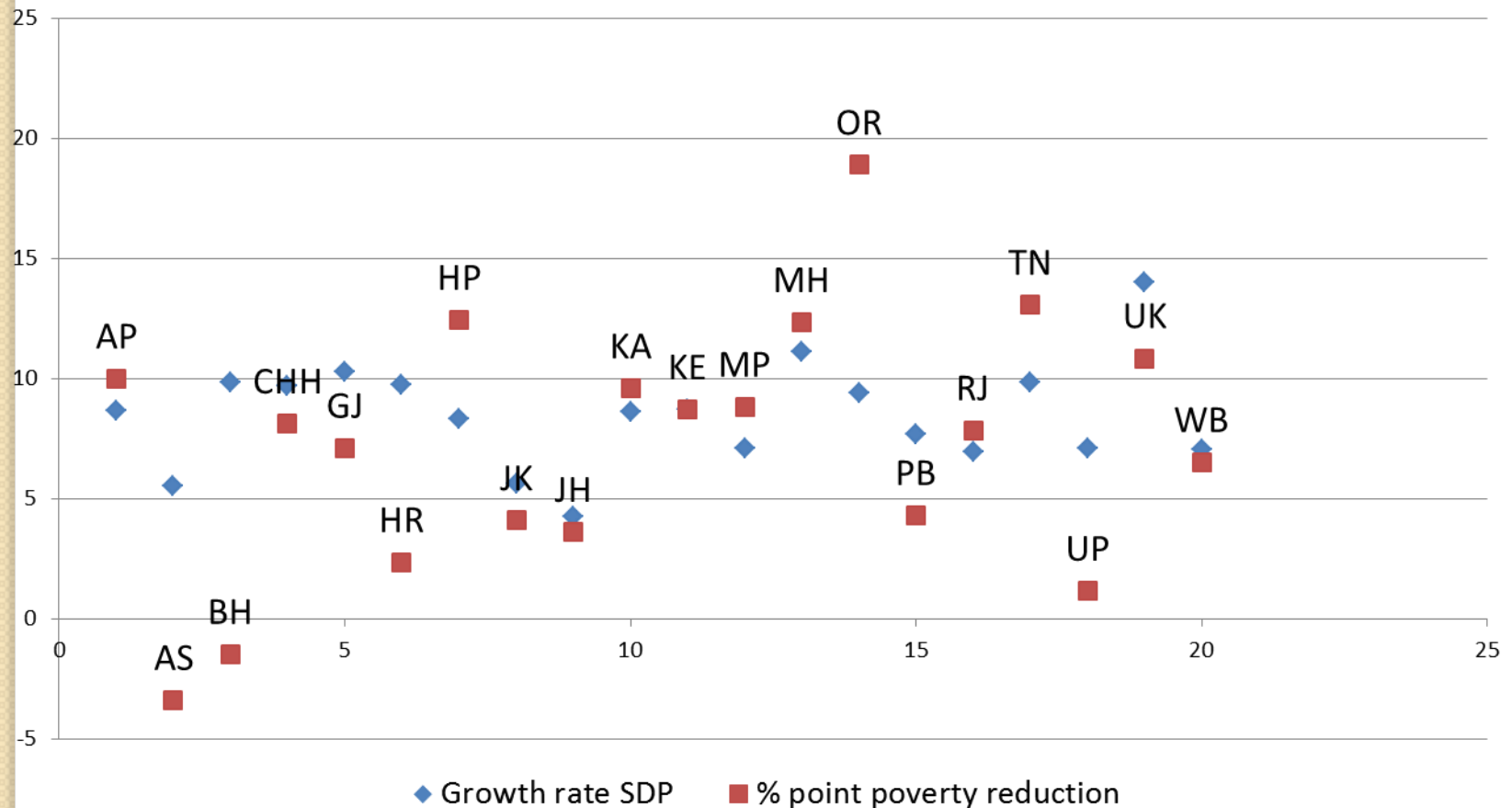


# Urban



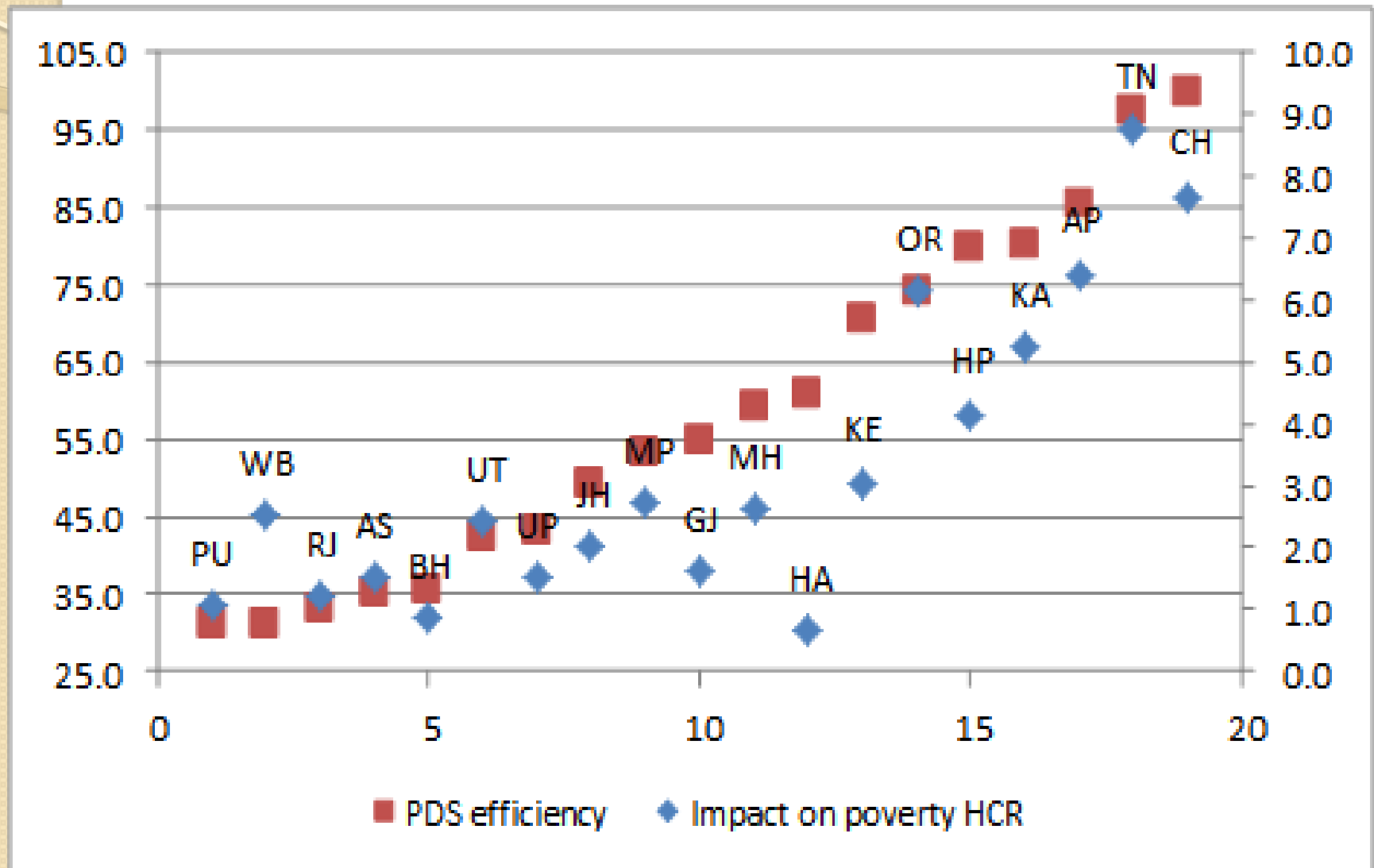
While there does not appear to be any relationship between the growth rate of SDP and the extent of poverty reduction for the most recent period.

**Scatter of Poverty reduction and GDP growth (2005-10)**

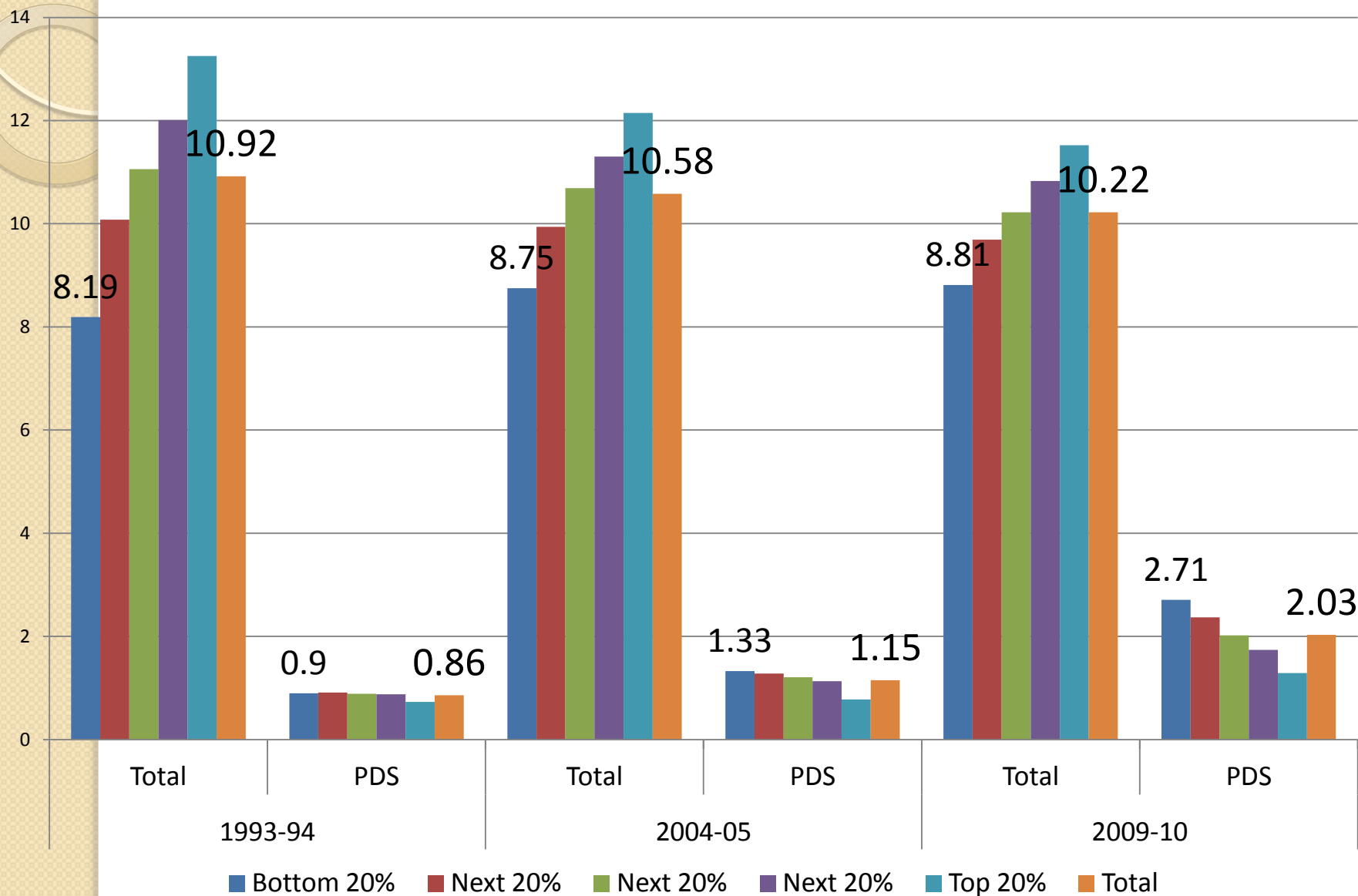




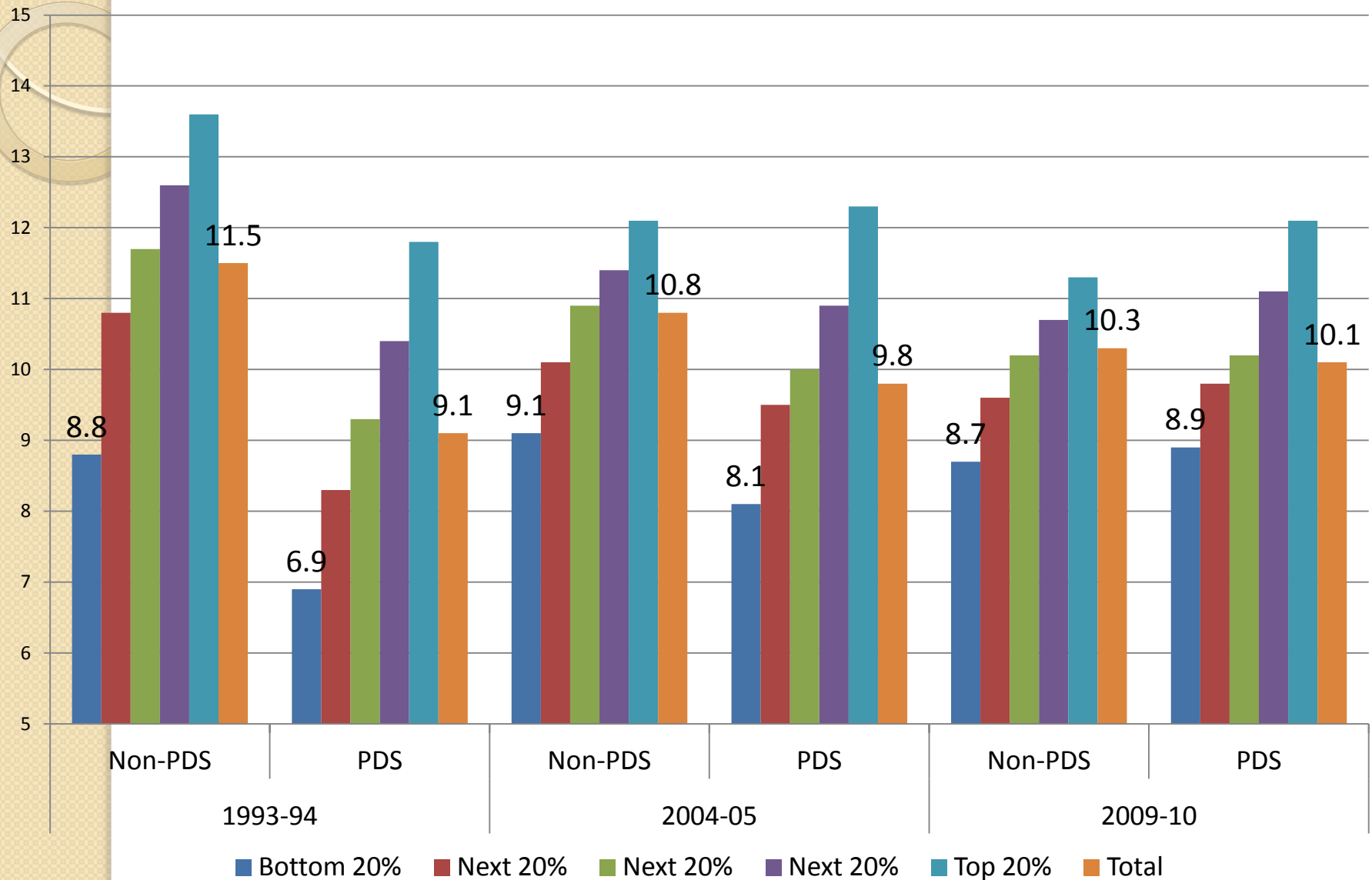
# PDS reforms did have an impact on poverty



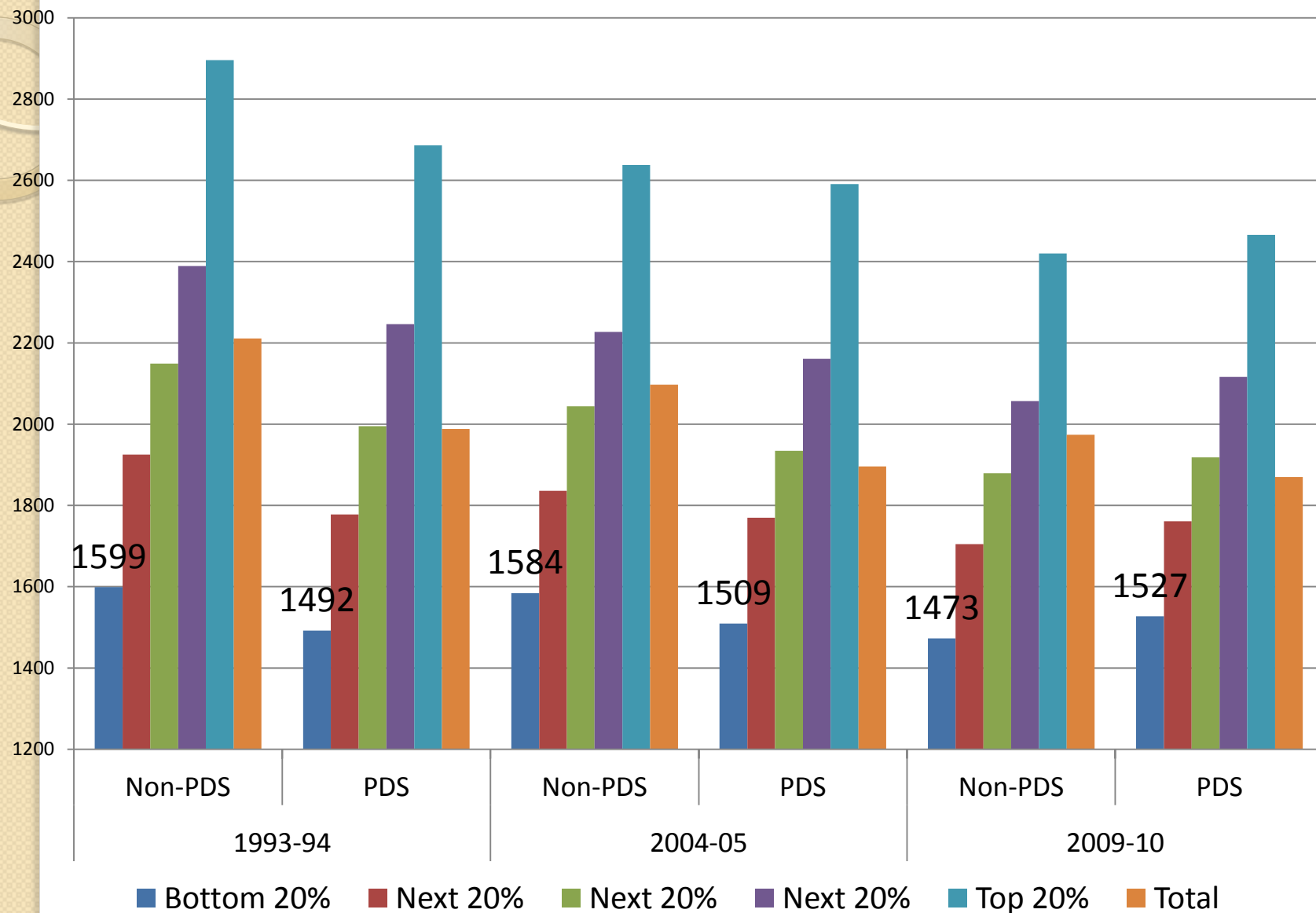
# Consumption of Rice and wheat: Rural



# Consumption of rice and wheat by PDS and Non-PDS households



# Per capita per day calorie intake: Rural



# Regression results: Rural (pooled)

Rural				
VARIABLES	ln_calpcperday	ln_calpcperday	ln_qty_cereal_pc	ln_qty_cereal_pc
ln_hhsize	-0.0640***	-0.0546***	-0.0523***	-0.0419***
	(0.000970)	(0.000979)	(0.00127)	(0.00128)
ln_realmpce	0.406***	0.418***	0.209***	0.221***
	(0.00109)	(0.00111)	(0.00142)	(0.00145)
cultivator	0.0632***	0.0637***	0.0546***	0.0545***
	(0.00106)	(0.00105)	(0.00138)	(0.00137)
ln_cerealpricereal	-0.0369***	-0.0280***	-0.0392***	-0.0306***
	(0.000940)	(0.000950)	(0.00123)	(0.00124)
pds_cereal_yes	0.0435***		0.0565***	
	(0.00127)		(0.00165)	
ln_totaltransferratio		0.852***		0.956***
		(0.0145)		(0.0189)
Constant	5.111***	4.997***	1.344***	1.233***
	(0.00926)	(0.00948)	(0.0121)	(0.0124)
Observations	195,172	195,172	195,168	195,168
R-squared	0.513	0.519	0.268	0.273

# Regression Results: Urban (pooled)

Urban				
	ln_calpcperda y	ln_calpcperda y	ln_qty_cereal_p c	ln_qty_cereal_p c
ln_hhsize	-0.102***	-0.0975***	-0.0951***	-0.0911***
	(0.00127)	(0.00128)	(0.00174)	(0.00175)
ln_realmpce	0.314***	0.316***	0.0824***	0.0824***
	(0.00119)	(0.00120)	(0.00163)	(0.00165)
ln_cerealpricereal	-0.104***	-0.0966***	-0.125***	-0.127***
	(0.00194)	(0.00207)	(0.00265)	(0.00284)
pds_cereal_yes	0.0289***		0.0400***	
	(0.00180)		(0.00246)	
ln_totaltransferratio		0.419***		0.324***
		(0.0228)		(0.0313)
Constant	5.942***	5.911***	2.397***	2.411***
	(0.0107)	(0.0112)	(0.0147)	(0.0154)
Observations	123,543	123,543	123,541	123,541
R-squared	0.497	0.497	0.225	0.224
Standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

# Conclusion

- Poverty and food security are linked
- Any direct food security intervention has a much larger impact on poverty as well as food security than growth
- Implicit transfers due to cheaper and universal PDS are more effective than cash transfers both in terms of poverty reduction as well as on nutrition