

Post-Apartheid Income and Expenditure Series (PIES)

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Post-Apartheid Income and Expenditure Survey (PIES) Project

- Background: Income And Expenditure Surveys (IES)
 - Quinquennial, nationally representative, sampled household surveys, containing details about households' income and expenditure patterns
 - Primary purpose is to update the Consumer Price Index (CPI) basket
 - 4 cross-sectional data points thus far: 1995, 2000, 2005/06 and 2010/11.
- Purpose: prepare, align, and stack individual datasets into a single, unifying, updating data file with information at the lowest item level possible.
- Key instrument for detailed intertemporal analyses on household's income and *item expenditure* patterns/movements.

PIES Project - Outputs

- Products:
 1. A dataset: items-matched, weights-adjusted, stacked/appended IES's.
 2. Metadata describing how the dataset was constructed, as well as detailed descriptions for the variables in the PIES dataset. (Varmatch.xlsx)
 3. A consistency report that highlights internal inconsistencies, discrepancies and comparability issues of the dataset.
- Specific activities/additions:
 1. Item-matching
 2. New weights (Branson & Wittenberg)
 3. Adjust for item-specific inflation

1. Item Matching

- Problem of changing set of questions regarding item-incomes/expenditures in the surveys
 - New/old items; technological change;
 - Change from Standard Trade Classification (STC) to Classification of Individual Consumption According to Purpose (COICOP) in 2005
 - Researchers pick & choose income and expenditure items without a universal base as reference
- Approach (Metadata)
 - Systematic approach
 - provide as much detail as possible
 - Clear and `obvious' matches
 - Unmatchable or uncertain items are retained in an `other' item within major categories

1. Item Matching – Preliminary

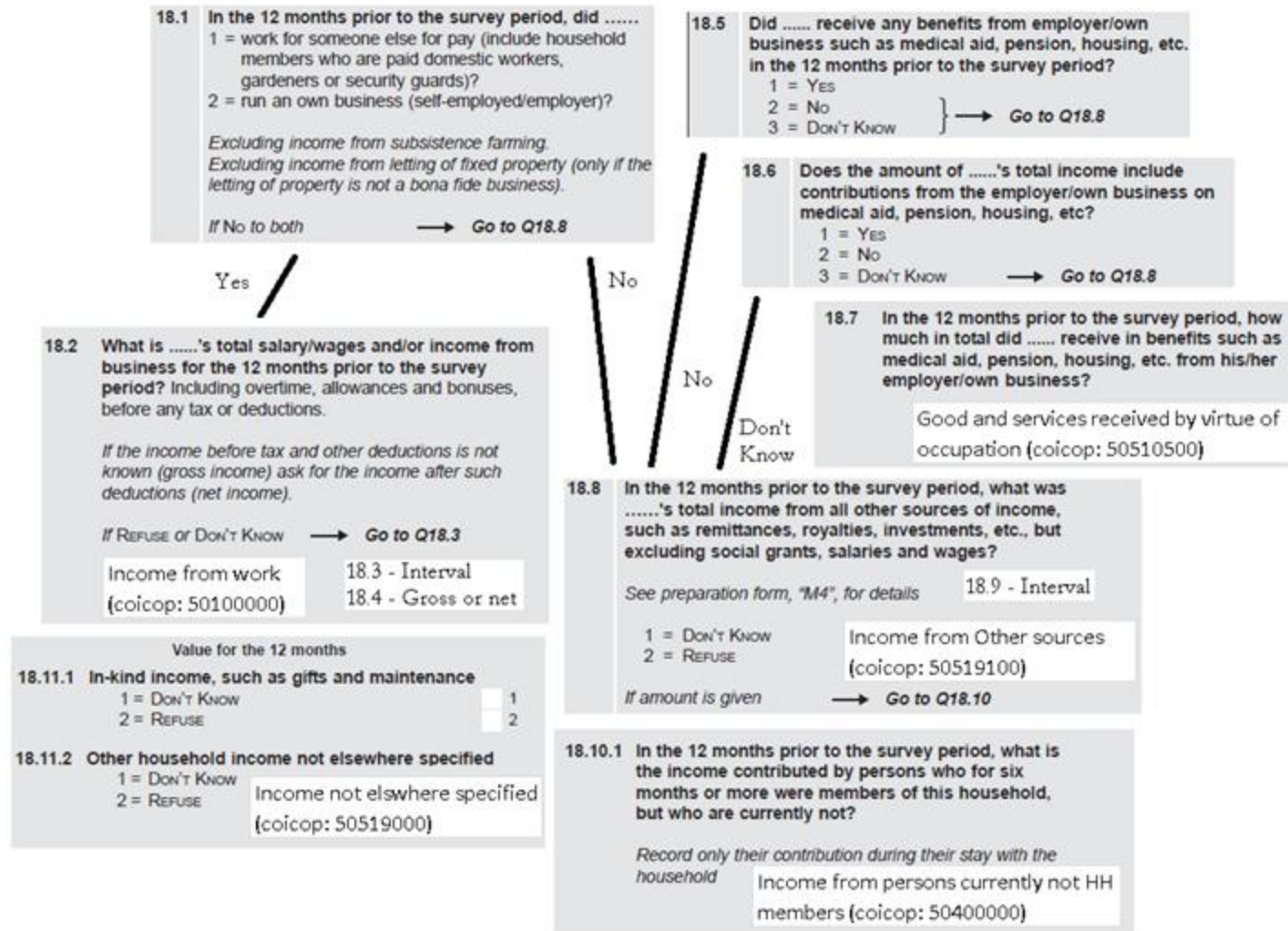
1995		2000		2005		2010		New Var
v b06f010	Estimated value of dwelling	v	0	y exp52210000	Cost of Other Dwelling	y exp52210000	Cost of Other Dwelling	h_new_other
m b06f006	Estimated monthly rent			y exp4211001	Imputed rent on owned dwelling	y exp4211001	Imputed rent on owned dwelling	I 7% Per
m b17f006	Beef and Veal	m P0502Q010101	Expenditure on beef	y exp1121000	Beef and veal (incl heads and feet)	y exp1121000	Beef and veal (incl heads and feet)	f_2_beef
m b16f001	Beef and Veal							
m b17f017	Other meat	m P0502Q010405	Expenditure on other	y exp1127100	Other meat (incl heads and feet)	y exp1127100	Other meat (incl heads and feet)	f_2_other
m b16f005	Other meat	m P0502Q010105	Expenditure on other	y exp1126501	Other meat and meat products (including ham)	y exp1126501	Other meat and meat products (including ham)	
				y exp1125203	Ham	y exp1125203	Ham	
				y exp1125303	Mopane worms	y exp1125303	Mopane worms	
				y exp1126601	Meat patties	y exp1126601	Meat patties	
y	0	y	0	y exp3131001	Clothing accessories such as scarves, ties, handkerchiefs, etc.	y exp3131001	Clothing accessories such as scarves, ties, handkerchiefs, etc.	c_1_other
				y exp3126000	otherclothing	y exp3126000	otherclothing	
				y exp3121002	Sports clothing	y exp3122002	Specially made-up clothes (eg clothes made by dressmakers and tailors)	
				y exp3122002	Specially made-up clothes (eg clothes made by dressmakers and tailors)			
m b56f003	Taxi & rented (metered)	y P1502Q03	Expenditure on rented	y exp7321310	Metered cab attending educational	y exp7321310	Metered cab attending educational	t_2_taxi_meter
m b56f004	Taxi & rented (other)	y P1502Q0401	Expenditure on metered	y exp7321311	Metered cab other than educational	y exp7321311	Metered cab other than educational	
		y P1502Q0402	Expenditure on other	y exp7241700	Rented vehicles educational trips	y exp7241700	Rented vehicles educational trips	
				y exp7241701	Rented vehicles other than educational	y exp7241701	Rented vehicles other than educational	
				y exp7321320	Minibus taxi/combi (including 30 seaters)	y exp7321320	Minibus taxi/combi (including 30 seaters)	
				y exp7321321	Minibus taxi/combi (including 30 seaters)	y exp7321321	Minibus taxi/combi (including 30 seaters)	
				y exp7321330	Other (including bakkies used as taxis)	y exp7321330	Other (including bakkies used as taxis)	f
				y exp7321331	Other (including bakkies used as taxis)	y exp7321331	Other (including bakkies used as taxis)	f
				y exp7321510	Lift clubs educational trips	y exp7321510	Lift clubs educational trips	
y b58f001	Personal pc, software, calculator	y P1601Q01	Expenditure on personal	y exp9131100	Personal desktop computers (excluding laptops and palm tops)	y exp9131100	Personal desktop computers (excluding laptops and palm tops)	co_all
		y P1601Q02	Expenditure on software	y exp8211600	Repairs of computers and communication equipment	y exp8211600	Repairs of computers and communication equipment	
		y P1601Q03	Expenditure on calculator	y exp9131700	Parts and upgrading of computers	y exp9131200	Laptops and palm tops	
		y P1601Q04	Expenditure on diskettes	y exp9131200	Laptops and palm tops	y exp9131300	Software (excluding games, play-station)	
		y P1601Q05	Expenditure on printers	y exp9131300	Software (excluding games, play-station)	y exp9131400	Calculators	
		y P1601Q06	Expenditure on modems	y exp9131400	Calculators	y exp9141100	Diskettes, CDs, flash disks and other consumables	
				y exp9141100	Diskettes, CDs, flash disks and other consumables	y exp9131500	Printers/scanners/copiers	
				y exp9131500	Printers/scanners/copiers	y exp9131600	Modems	
				y exp9131600	Modems	y exp9131201	Palm tops	
						y exp9131801	Computer Parts (CPU; memory; RAM)	
						y exp9131802	flash disks and portable external hard drives	
						y exp9131803	CDs; DVDs; Blu-ray disks	
						y exp9131804	Other Consumables (Tuners and ink cartridges)	

	1995		2000		2005		2010		
	var	descriptio code	var	descriptio code	var	descriptio code	var	descriptio code	new var
y	b83f005	Profit from gen hinc_iy	P2401Q01	Salaries at gen hinc_iy	exp50110	Household gen hinc_iy	exp50100	Income from gen hinc_i	hinc_inc
y	b84f005	Profit from business y	P2401Q01	Bonuses and income y	exp50120	Household self-employment and business			
y	b85f005	Profit from business y	P2401Q01	Commission and director's fees					
y	b86f005	Profit from business y	P2401Q02	Net profit from business/professional practice/farming					
y	b87f005	Profit from business y	P2401Q01	Part-time work and cash allowances					
y	b83f002	Bonuses, overtime of household head							
y	b84f002	Bonuses, overtime of spouse							
y	b85f002	Bonuses, overtime of member 1							
y	b86f002	Bonuses, overtime of member 2							
y	b87f002	Bonuses, overtime of member 3							
y	b84f001	Salaries, wages of spouse							
y	b83f001	Salaries, wages of household head							
y	b85f001	Salaries, wages of member 1							
y	b86f001	Salaries, wages of member 2							
y	b87f001	Salaries, wages of member 3							
y	b83f003	Commission, director's fees of household head							
y	b84f003	Commission, director's fees of spouse							
y	b85f003	Commission, director's fees of member 1							
y	b86f003	Commission, director's fees of member 2							
y	b87f003	Commission, director's fees of member 3							
y	b83f004	Part-time work, cash allowances of household head							
y	b84f004	Part-time work, cash allowances of spouse							
y	b85f004	Part-time work, cash allowances of member 1							
y	b86f004	Part-time work, cash allowances of member 2							
y	b87f004	Part-time work, cash allowances of member 3							

	1995	2000	2005
Salaries and wages	001	1 SALARIES AND WAGES	19.1 Salaries and wages (including overtime, bonuses, cash allowance in respect of transport, housing and clothing, etc.)
Bonuses and income from overtime	002	1.1 Salaries and wages for normal hours worked	
Commission and director's fees	003		19.1.2 Income from business or professional practice/activities or farming (excluding interest and dividends) conducted on a full-time or regular part time basis (see also Q19.3, item 1)
Part-time work and cash allowances in respect of transport, housing and clothing	004	1.2 Bonuses and income from overtime	
Net profit from business or professional practice/activities or farming (excluding interest and dividends) conducted on a full-time basis (see also section 22.2 item 1) If net loss, show it in section 19.6	005	1.3 Commission and director's fees	
		1.4 Part-time work and cash allowances in respect of transport, housing and clothing	
		2 Net profit from business or professional practice/activities or farming (excluding interest and dividends) conducted on a full-time or regular part-time basis (see also part 24.2, item 1). If a net loss, show it in part 21.6, page 39	

1. Item Matching - Income

Figure 1: IES2010 Income Questionnaire Format



2. Weights

- Problem:
 - Inconsistencies in the surveys' projected populations
 - Different level adjustments until 2003: 1995 and 2000 IESs' person-level and household-level weights do not agree
- Solution (following Branson & Wittenberg):
 - Sample weights recalculated using Cross-Entropy estimation technique and the latest population estimates from the Actuarial Society of South Africa (ASSA).
 - Incorporated in the PIES to improve intertemporal consistency of income and expenditure trends

2. Weights – Results (Preliminary)

Table 1: Population size by Province

Province	1995		2000		2005		2010	
	Sample Share (A)	Population Share (B)	(A)	(B)	(A)	(B)	(A)	(B)
WC	10.9	9.8	9.7	10.1	11.4	10.4	11.7	10.4
EC	18	15.5	13.2	14.6	13.4	14.1	13.2	13.7
NC	4.9	1.9	5	1.9	8.2	1.9	4.8	1.8
FS	11.1	6.7	8.9	6.2	8.3	5.9	8.6	5.5
KZN	17.5	20.9	16.9	20.9	22.4	20.6	14.3	21.2
NW	8.3	8.1	10.7	8	7.4	7.9	10	7.3
G	11.8	18.1	15.1	19.4	11.8	20.3	15.3	21.9
MP	8.5	7.1	8.7	7	8	7	9.1	6.7
LIM	9	11.9	11.8	11.8	9.2	12	13.1	11.5
Total	100	100	100	100	100	100	100	100
Abs.	(29582)	40829394	(26224)	44871938	(21118)	47486215	(25328)	50423022

Source: Post-Apartheid Income and Expenditure Survey (PIES) and Own calculations.

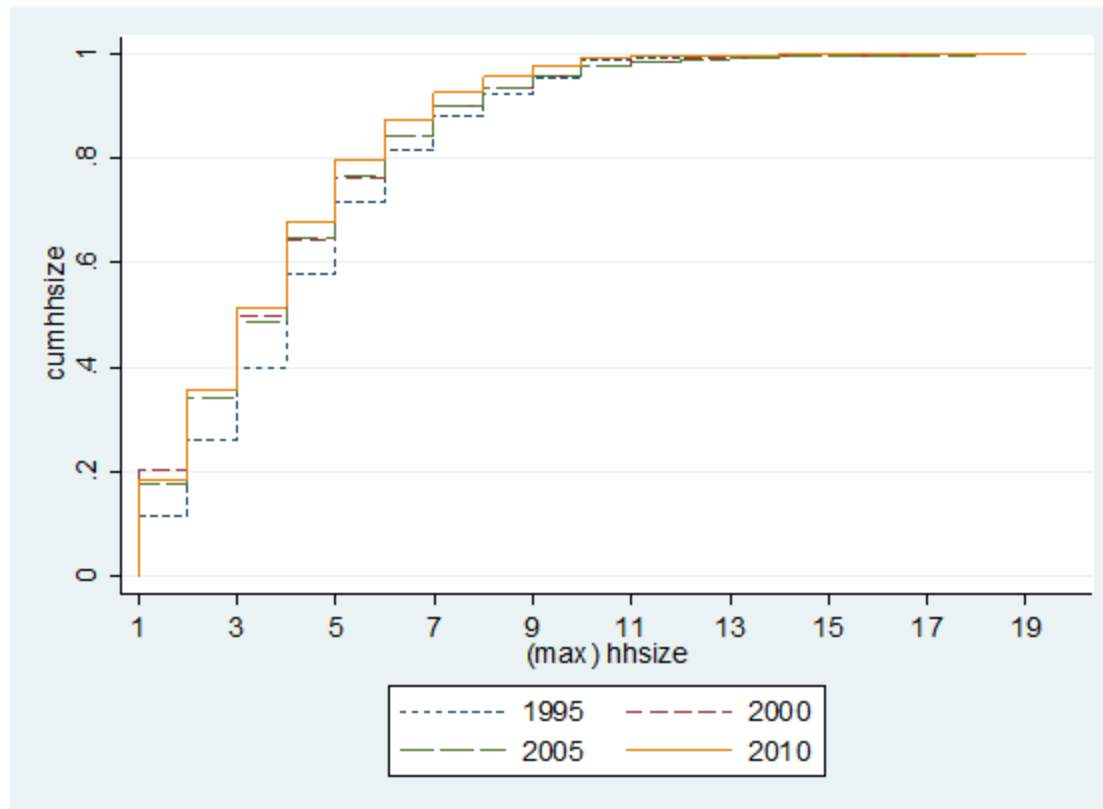
Table 2: Comparison between PIES and StatsSA's Mid-year Population Shares

	1995		2000		2005		2010	
	StatsSA	PIES	StatsSA ⁵	PIES	StatsSA	PIES	StatsSA	PIES
WC	9	9.8	9.7	10.1	10	10.4	10.4	10.4
EC	15.7	15.5	15.7	14.6	15	14.1	13.5	13.7
NC	1.8	1.9	2	1.9	1.9	1.9	2.2	1.8
FS	6.7	6.7	6.4	6.2	6.3	5.9	5.6	5.5
KZN	21.1	20.9	20.5	20.9	20.6	20.6	21.3	21.2
NW	8.1	8.1	8.2	8	8.2	7.9	6.4	7.3
G	17.1	18.1	18	19.4	19.2	20.3	22.4	21.9
MP	7.3	7.1	6.9	7	6.9	7	7.2	6.7
LIM	13.1	11.9	12.7	11.8	12	12	10.9	11.5
Population (in 1000s)	41 245	40 829	43 291	44 872	46 888	47 486	49 991	50 423

Source: Post-Apartheid Income and Expenditure Survey (PIES), StatsSA Mid-year Population estimates and own calculations.

2. Weights – Results (Preliminary)

Figure 1: Household Size in South Africa, 1995-2010



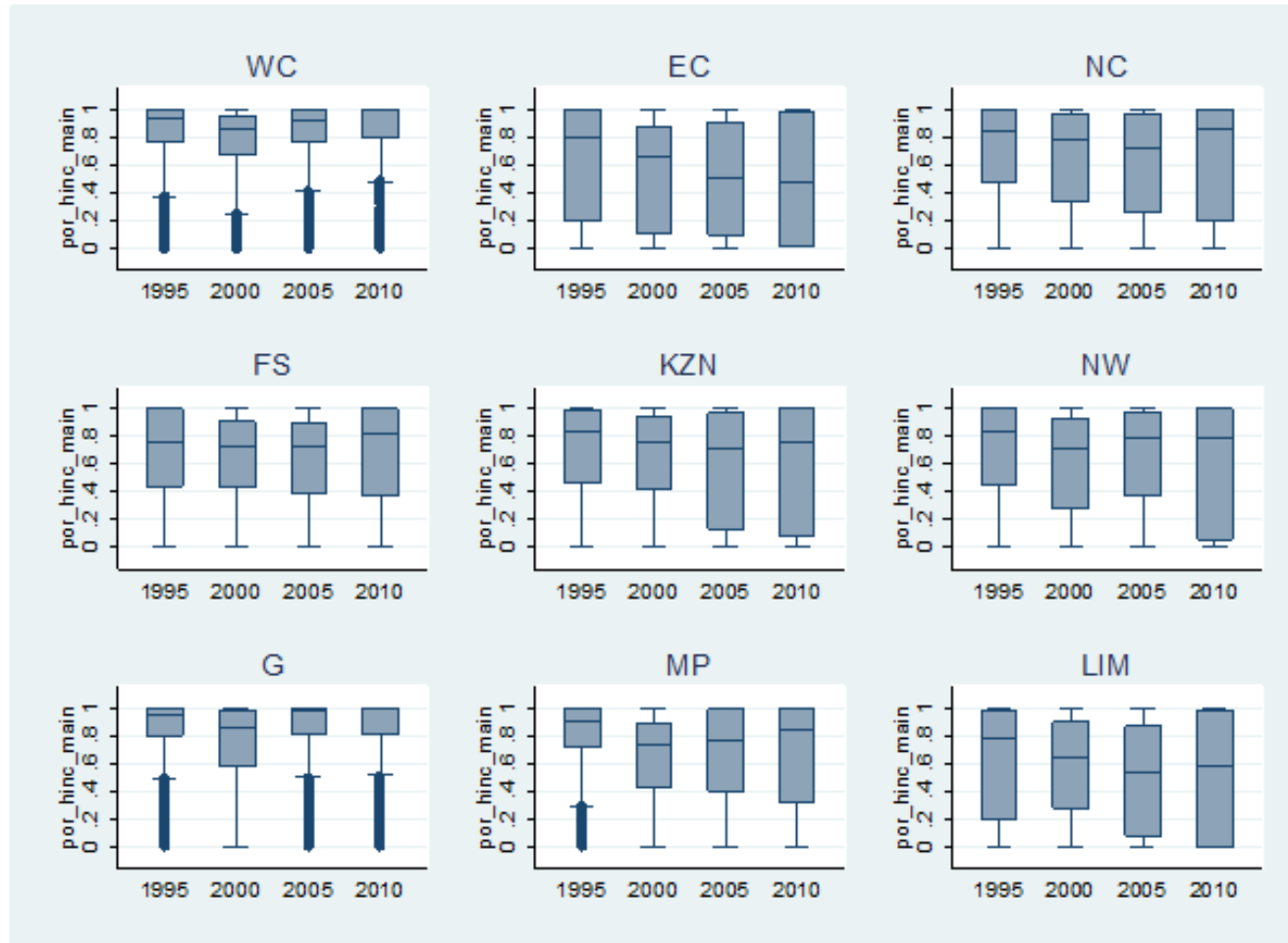
Source: Post-Apartheid Income and Expenditure Survey (PIES), and Own calculations.

3. Adjust for Item-Specific Inflation

- Most analyses adjust for inflation using a single CPI (All Items)
 - But assumption is that prices move at the same rate across all expenditure items and across all household types.
- Remedy:
 - (Expenditure) Inflation-adjust at the item-level (as far as possible).
 - Real-items then summed to calculate household aggregates
 - (Income) All-Items CPI.
 - Base year: 2008 (LCS 2008/09)

PIES – Preliminary Results

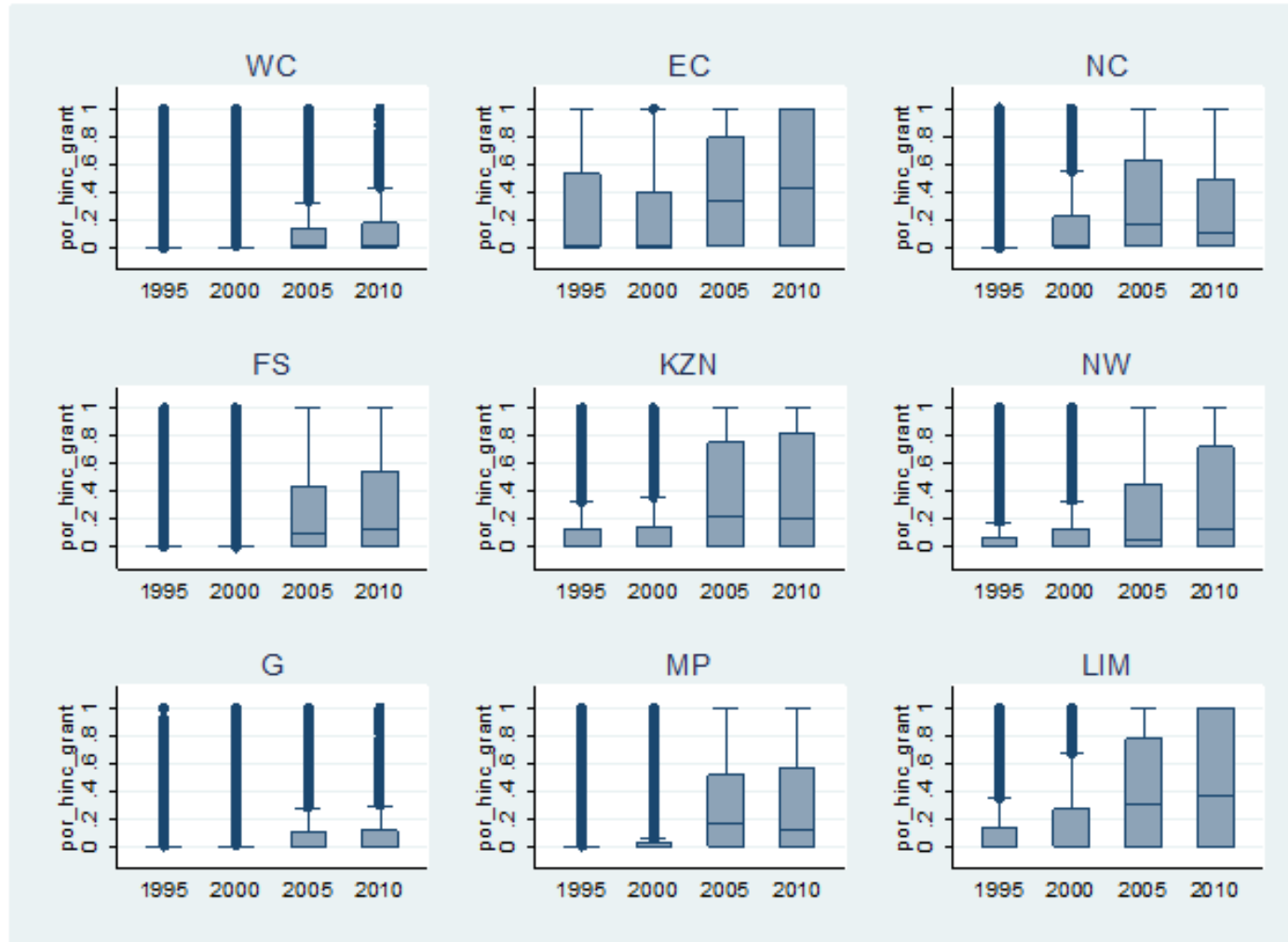
Figure 9: Main Household Income Share 1995-2010, by Province



Source: Post-Apartheid Income and Expenditure Survey

PIES – Preliminary Results

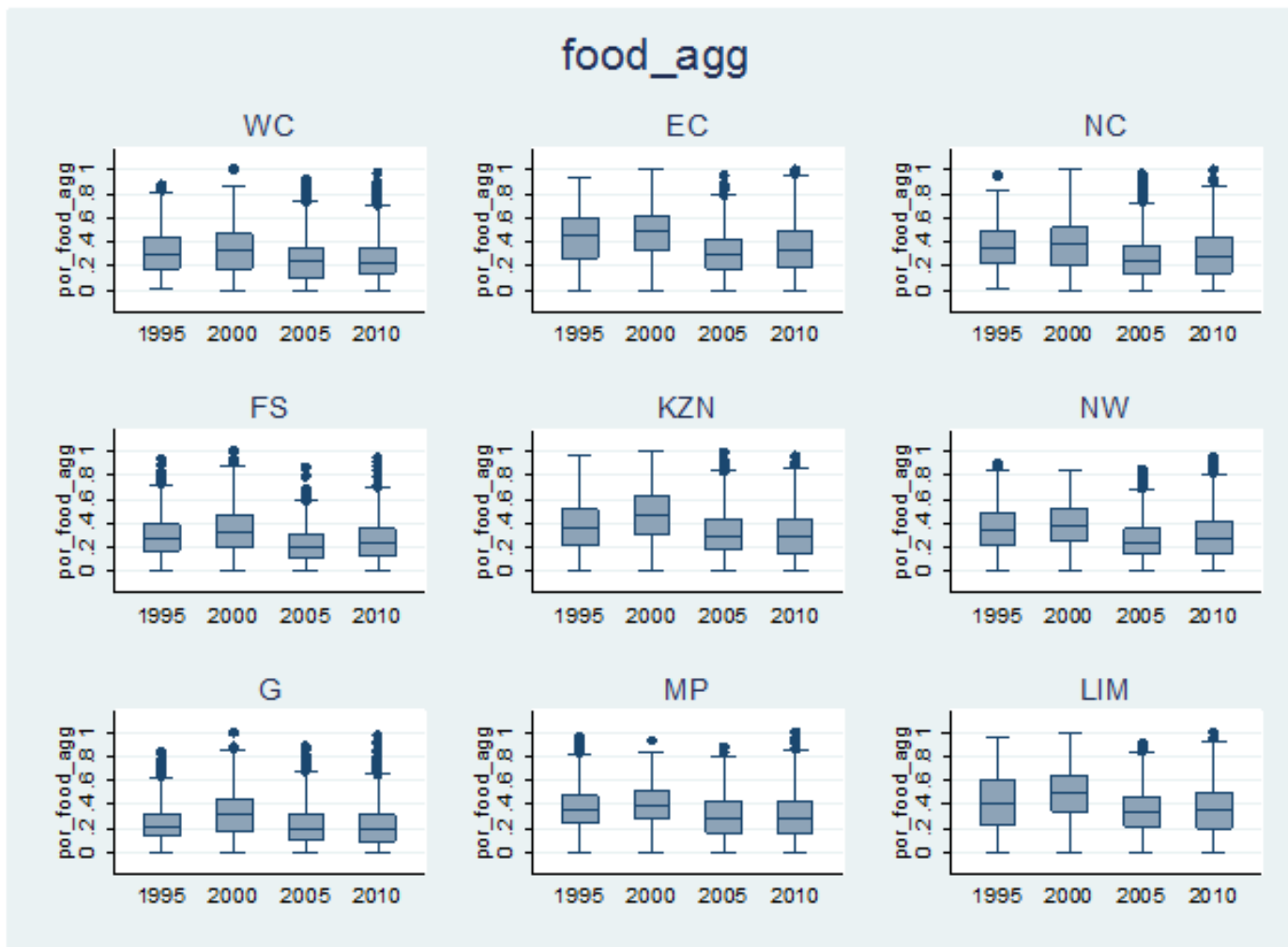
Figure 10: Household Grant Income Share 1995-2010, by Province



Source: Post-Apartheid Income and Expenditure Survey

PIES – Preliminary Results

Figure 13: Household Food Expenditure Share 1995-2010, by Province



Source: Post-Apartheid Income and Expenditure Survey

Conclusion

- To do list:
 1. 2011 Census weight
 2. Release
 3. Comparability with admin. data (Income Tax data?) and other survey datasets (NIDS, LCS, LMD and PALMS).
 4. When does “Post-apartheid” start?
 5. Update