Background Paper Series

PROVIDE PROJECT

The Provincial Decision-making Enabling Project

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A profile of Gauteng: Demographics, poverty, inequality and unemployment

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PROVIDE PROJECT

The Provincial Decision-making Enabling Project

Overview

The Provincial Decision-Making Enabling (PROVIDE) Project aims to facilitate policy design by supplying policymakers with provincial and national level quantitative policy information. The project entails the development of a series of databases (in the format of Social Accounting Matrices) for use in Computable General Equilibrium models.

The National and Provincial Departments of Agriculture are the stakeholders and funders of the PROVIDE Project. The research team is located at Elsenburg in the Western Cape.

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For the original project proposal and a more detailed description of the project, please visit www.elsenburg.com/provide

A profile of Gauteng: Demographics, poverty, inequality and unemployment [1]

Abstract

This paper forms part of a series of papers that present profiles of South Africa's provinces, with a specific focus on key demographic statistics, poverty and inequality estimates, and estimates of unemployment. In this volume comparative statistics are presented for agricultural and non-agricultural households, as well as households from different racial groups, locations (metropolitan, urban and rural areas) and district municipalities of Gauteng. Most of the data presented are drawn from the Income and Expenditure Survey of 2000 and the Labour Force Survey of September 2000, while some comparative populations statistics are extracted from the National Census of 2001 (Statistics South Africa). The papers should be regarded as general guidelines to (agricultural) policymakers as to the current socio-economic situation in Gauteng, particularly with regards to poverty, inequality and unemployment.

[1] The main author of this paper is Kalie Pauw.

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1. Introduction

According to the National Census of 2001 Gauteng is home to about 19.7% of South Africa's population. Measured by its total current income, Gauteng is the richest province in South Africa. In *per capita* income terms the province also ranks first (SSA, 2003a).[2] Despite these relative fortunes, the province is still marred by high poverty rates, inequalities in the distribution of income between various population subgroups, and unemployment, although not to the same degree as other regions in South Africa. Poverty and unemployment in South Africa are often rural phenomena, and given that many of the rural inhabitants are linked to agricultural activities, the various Departments of Agriculture in South Africa have an important role to play in addressing the needs in rural areas. In this paper an overview of the demographics, poverty, inequality and unemployment in Gauteng is presented. A strong focus on agriculture and agricultural households is maintained throughout.

There are various sources of demographic data available in South Africa. In addition to the National Census of 2001 (SSA, 2003a), Statistics South Africa conducts a variety of regular surveys. Most suited to this type of study and fairly recent is the Income and Expenditure Survey of 2000 (IES 2000) (SSA, 2002a), which is a source of detailed income and expenditure statistics of households and household members. The twice-yearly Labour Force Survey (LFS) is an important source of employment and labour income data. In this paper we use the LFS September 2000 (LFS 2000:2) (SSA, 2002b) as this survey can be merged with the IES 2000. Although there are some concerns about the reliability of the IES and LFS datasets, whether merged or used separately, as well as the comparability of these with other datasets, one should attempt to work with it as it remains the most recent comprehensive source of household income, employment and expenditure information in South Africa. For a detailed description of the data, as well as data problems and data adjustments made to the version of the dataset used in this paper, refer to PROVIDE (2005a).

This paper is organised as follows. Section 2 presents a brief overview of the spatial distribution of households within the province, while also presenting some estimates of the number of people or households involved in agricultural activities. Section 3 focuses on poverty, inequality and unemployment in the province, while section 4 draws some general conclusions.

[2] These population figures and income estimates are based on the Census 2001. Statistics South Africa warns that the question simply asked about individual income without probing about informal income, income from profits, income in kind etc. As a result they believe this figure may be a misrepresentation of the true income. Comparative figures from the IES 2000 also ranks Gauteng first both in terms of total provincial income and in terms of *per capita* income.

2. Demographics

2.1. Spatial distribution of households

In 2000 Gauteng was home to 3.07 million households and a total of 7.75 million people (IES/LFS 2000). These estimates are different from the Census 2001 estimates of 2.65 million households (8.84 million people, see Table 1). The discrepancy is partly explained by changes in the population size and structure experienced between 2000 and 2001, but also points to the outdated IES/LFS 2000 sampling weights.[3] Compared to the Census 2001 data African and Coloured people were over-represented while Asian and White people were under-represented in the IES/LFS 2000.

Table 1: Racial composition of Gauteng

	IES/LFS 2000	*Population share*	*Census 2001*	*Population share*
African	5,832,238	75.3%	6,522,789	73.8%
Coloured	315,659	4.1%	337,974	3.8%
Asian/Indian	174,922	2.3%	218,013	2.5%
White	1,427,452	18.4%	1,758,396	19.9%
Total	*7,750,271*	*100.0%*	*8,837,172*	*100.0%*

Sources: IES/LFS 2000 and Census 2001.

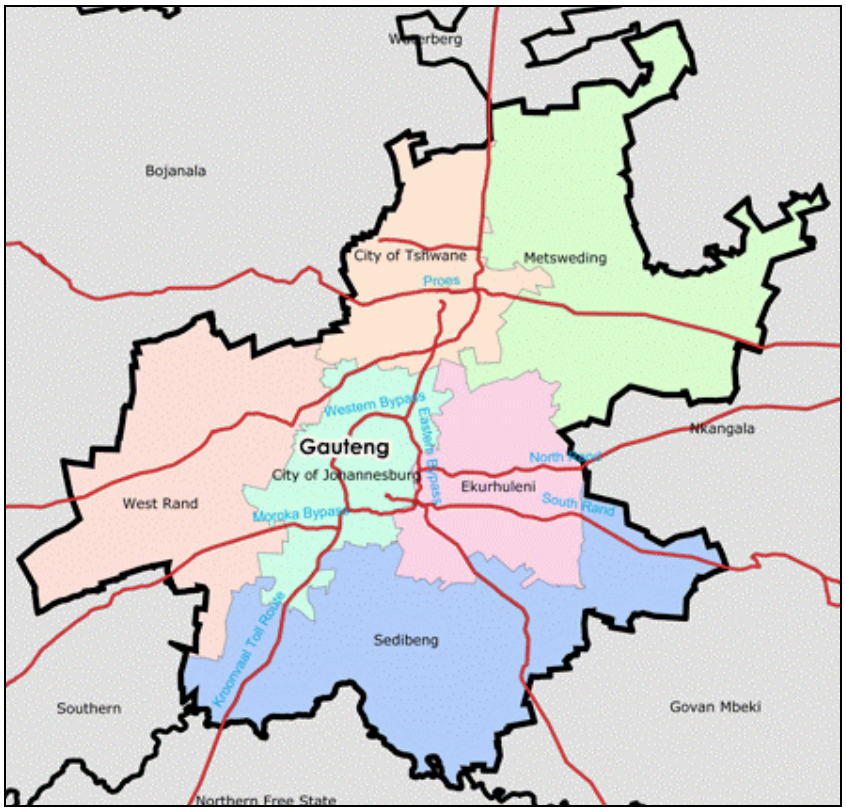
Gauteng is divided into six district municipalities (see Figure 1), namely the City of Johannesburg, West Rand, Tshwane, Metsweding, Ekurhuleni and Sedibeng. These district municipalities were recently demarcated as directed by the Local Government Municipal Structures Act (1998). Three of these districts, namely Johannesburg, Tshwane and Ekurhuleni are classified as metropolitan areas, although Sedibeng, which forms a large part of Emfuleni, is also regarded as a metropolitan area for the purpose of this paper.[4, 5]

[3] The IES 2000 sampling weights were based on 1996 population estimates.

[4] Officially the Demarcation Board declared Pretoria (Tshwane), Johannesburg, East Rand (Ekurhuleni), Durban (eThekwini), Cape Town and Port Elizabeth (Nelson Mandela) as metropolitan areas. However, in our definition of metropolitan areas we include the Vaal (Emfuleni), East London, Pietermaritzburg and Bloemfontein (which includes Botshabelo).

[5] See PROVIDE (2005b) for a more detailed discussion of geographical distinctions between households based on former homelands areas, metropolitan areas, and nodal areas for rural development programmes, all of which can be linked to municipal districts.

Figure 1: District municipalities in Gauteng



Source: Demarcation Board (www.demarcation.org.za).

Table 2 shows the number of people in each district municipality by racial group. Johannesburg is the largest with 32.4% of the population. Ekhurhuleni is home to about 27.4% of the population, while 18.0% live in Tshwane (Pretoria). Sedibeng and the West Rand is home to 11.9% and 8.0% of the population respectively. The majority of the population is African (75.3%), while the province is also home to relatively large share of White people in South Africa (18.4% of Gauteng's population). Coloured and Asian people are small minority groups, with 4.1% and 2.3% of the population respectively.

Table 2: Population by district municipality and racial group

	African	*Coloured*	*Asian*	*White*	*Total*	*Percentages*
City of JHB	1,824,430	175,324	94,073	415,454	2,509,282	32.4%
West Rand	427,232	38,680	28,801	126,880	621,593	8.0%
Tshwane	928,266	31,011	31,278	403,368	1,393,923	18.0%
Metsweding	184,938				184,938	2.4%
Ekurhuleni	1,698,156	64,880	19,126	337,802	2,119,964	27.4%
Sedibeng	769,216	5,763	1,644	143,948	920,571	11.9%
Total	*5,832,238*	*315,658*	*174,922*	*1,427,452*	*7,750,271*	
Percentages	*75.3%*	*4.1%*	*2.3%*	*18.4%*		*100.0%*

Source: IES/LFS 2000

Table 3 shows the number of people in urban and rural areas. Urban areas are divided into metropolitan areas and secondary cities or small towns. The vast majority of the population (88.0%) live in metropolitan areas. Adding secondary cities and small towns increases the urban population share to 99.2%. This figure is very high compared to the national average 63-37 urban-rural split.

Table 3: Population by urban/rural areas and racial group

	African	*Coloured*	*Asian*	*White*	*Total*	*Percentages*
Metropolitan areas	5,107,509	273,274	146,122	1,295,390	6,822,295	88.0%
Secondary/small towns	665,517	42,385	28,801	128,741	865,444	11.2%
Rural areas	59,212			3,320	62,532	0.8%
Total	*5,832,238*	*315,659*	*174,922*	*1,427,452*	*7,750,271*	

Source: IES/LFS 2000

2.2. Agricultural households

The IES 2000 is one of the only sources of information on home production for home consumption (HPHC) in South Africa, and reports specifically on the productive activities of small, non-commercial subsistence farmers. Respondents were asked to provide estimates of production levels (livestock and produce), as well as the value of goods consumed and sold (see PROVIDE, 2005a for a discussion). This is potentially an important information source to measure the contribution of informal agricultural activities to poor households' income. On the formal side, employment data, which is available in the IES/LFS 2000, can be used to link households to agriculture. Workers reported both the industry in which they were employed as well as their occupation code.

Statistics South Africa has no formal definition of agricultural households, and hence two definitions are used here, namely a broad definition and a strict definition. Both definitions use a combination of HPHC data and agricultural employment data. Under the broad definition any household that earns income from either formal employment in the agricultural industry or as a skilled agricultural worker, or from sales or consumption of home produce or livestock, is defined as an agricultural household.[6] Under the strict definition a household has to earn at least 50% of its household-level income from formal and/or informal agricultural activities. A further way to 'qualify' as an agricultural household is when the value of consumption of own produce and livestock is at least 50% of total annual food expenditure.

Despite the small rural population, 117,430 households (3.8%) in Gauteng are involved in HPHC. The national average is 19.3%. This figure includes 101,450 African households, 680

[6] Note that consumption of own produce or livestock in economic terms can be regarded as an 'income' in the sense that the household 'buys' the goods from itself. If the household did not consume the goods it could have been sold in the market. This treatment of home-consumed production captures the notion of opportunity cost in economics.

Coloured households and 15,300 White households. Slightly fewer households (88,141 or 13.6%) earn some share of their income from wages of household members working in agricultural-related industries. The majority of these (77,427) of these households are African, while 3,714 are White households. Income differences between these households suggest that the White households are typically the owners or managers of farms, with incomes averaging R88,947. African households typically supply farm labour, with average household incomes of R22,856. When combining households in own production and agricultural employment, a total of 189,159 households (6.2%) in Gauteng can broadly be defined as agricultural households. Note that some of these households 'qualify' as agricultural households on both own production and employment accounts, which is why the figures do not add up. Under the strict definition 78,760 households (2.6%) are defined as agricultural households (see Table 4).

Table 4: Agricultural households by race (broad and strict definitions)

	Broad definition		*Strict definition*		
	Agricultural households (*column percentages*)	*Non-agricultural households* (*column percentages*)	*Agricultural households* (*column percentages*)	*Non-agricultural households* (*column percentages*)	*Total (column percentages*)
African	171,551	2,237,031	75,046	2,333,535	2,408,581
	(90.7%)	*(77.8%)*	*(95.3%)*	*(78.1%)*	*(78.6%)*
Coloured	680	104,355		105,035	105,035
	(0.4%)	*(3.6%)*	*(0.0%)*	*(3.5%)*	*(3.4%)*
Asian		45,369		45,369	45,369
	(0.0%)	*(1.6%)*	*(0.0%)*	*(1.5%)*	*(1.5%)*
White	16,929	490,345	3,714	503,561	507,274
	(8.9%)	*(17.0%)*	*(4.7%)*	*(16.9%)*	*(16.5%)*
Total	189,159	2,877,100	78,760	2,987,499	3,066,259
	(100.0%)	*(100.0%)*	*(100.0%)*	*(100.0%)*	*(100.0%)*
Row percentages	6.2%	93.8%	2.6%	97.4%	100.0%

Source: IES/LFS 2000

The average household size of agricultural households in Gauteng ranges from 2.9 (strict) to 3.8 (broad), compared to the provincial average of 3.3 members. This means that the provincial share of people living in broadly defined agricultural households will be larger than the share of households broadly defined as agricultural, and *vice versa* for strictly defined agricultural households. Table 5 shows that between 163,374 and 527,042 people live in agricultural households, representing 2.1% and 6.8% of the provincial population respectively. About 68,801 people in Gauteng are classified as agricultural workers, loosely defined as skilled agriculture workers and/or people working in the agricultural industry, either in an informal or formal capacity, and reporting positive wage or salary for the year 2000. This figure represents 2.4% of Gauteng's workforce.

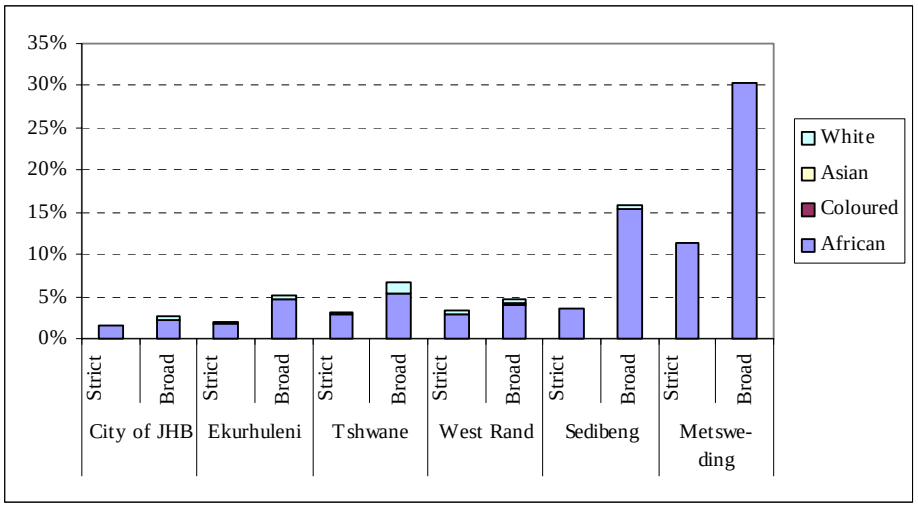
Table 5: Agricultural population by race (broad and strict definitions)

	Population living in agricultural households (broad)	*Percentages*	*Population living in agricultural households (strict)*	*Percentages*	*Population defined as agricultural workers*	*Percentages*
African	464,453	*(88.1%)*	154,054	*(94.3%)*	64,218	*(93.3%)*
Coloured	8,010	*(1.5%)*	-	*(0.0%)*	-	*(0.0%)*
Asian	-	*(0.0%)*	-	*(0.0%)*	-	*(0.0%)*
White	54,579	*(10.4%)*	9,321	*(5.7%)*	4,583	*(6.7%)*
Total	*527,042*	*(100.0%)*	*163,374*	*(100.0%)*	*68,801*	*(100.0%)*

Source: IES/LFS 2000.

Figure 2 shows, for each region, the proportion of households that are strictly or broadly defined as agricultural households. In the figure municipal districts are ranked from lowest to highest strict agricultural household share. The figure also provides a racial breakdown of agricultural households (compare Table 4). The majority of agricultural households in all regions are African. The metropolitan areas have a very low proportion of agricultural households. Metsweding has the largest share of agricultural households. However, it is interesting to note the large gap between the strict and broad shares. This suggests that for many of these households agriculture does not present an important source of revenue or food.

Figure 2: Agricultural household shares by region and race



Source: IES/LFS 2000

3. Poverty, inequality and unemployment

In 2003 Gauteng contributed approximately 33.0% to the National GDP, although only 19.7% of the South African population live in this province (SSA, 2003a, 2003b).[7] This implies that the *per capita* GDP in Gauteng is higher than the national average. According to the IES/LFS

[7] Other provinces: Western Cape (14.5%), Eastern Cape (8.1%), Northern Cape (2.4%), Free State (5.5%), KwaZulu-Natal (16.5%), North West (6.5%), Mpumalanga (7.0%) and Limpopo (6.5%).

2000 estimate Gauteng *per capita* income was R20,925 in 2000, almost twice as much as the national average of R12,411. Despite the province's relative fortunes, high levels of poverty and inequality persist as they do in the rest of the country.

Table 6 shows the average household incomes (not *per capita*) by various subgroups in Gauteng. Although some of these averages are based on very few observations, which often lead to large standard errors and, the table gives a general idea of how income is distributed between household groups in the province. The average household in Gauteng earned R62,000 in 2000 (not shown in the table). Agricultural households in general earn less than their non-agricultural counterparts. Note that in all the figures and tables that follow agricultural households are defined according to the strict definition. The average agricultural household reported an income of R28,322 compared to R62,888 for non-agricultural households. African agricultural households are worst off, earning on average only R21,199 per annum compared to R172,258 earned by White households. Note that these figures are household-level income figures that are potentially made up of income earned by multiple household members. As such it is not necessarily a reflection of wages of agricultural and non-agricultural workers.

Table 6: Average household incomes in Gauteng

	Agricultural households					Non-agricultural households				
	African	Coloured	Asian	White	Total	African	Coloured	Asian	White	Total
City of JHB	23,125				23,125	43,105	72,667	130,861	216,528	71,590
West Rand	17,136			87,370	27,892	34,474	54,293	67,984	114,927	44,873
Tshwane	17,643			92,076	21,179	48,195	129,125	98,936	165,861	85,267
Metsweding	25,615				25,615	23,274				23,274
Ekurhuleni	15,244			266,048	28,318	28,736	57,409	142,185	161,354	52,767
Sedibeng	31,965			460,670	48,005	31,922	32,363	102,275	151,566	46,753
Provincial average	*21,199*			*172,258*	*28,322*	*37,354*	*71,811*	*117,430*	*174,437*	*62,888*
National average	*15,014*	*24,250*	*132,816*	*282,151*	*26,612*	*29,777*	*57,284*	*88,642*	*166,100*	*49,990*

3.1. Poverty and agriculture

Table 6 shows that agricultural households are generally worse off than non-agricultural households in terms of income levels. Although not necessarily true for Gauteng, agricultural households often reside in rural areas and are far removed from more lucrative employment opportunities in urban areas. As a result the National Department of Agriculture places strong emphasis on rural poverty reduction. Various strategies are proposed in the official policy documentation (see Department of Agriculture, 1998). Central to these strategies are (1) an improvement in rural infrastructure, with the aim of giving rural or resource-poor farmers better access to markets, transport, water and electricity, and (2) employment opportunities within agriculture for the poor. The latter can be interpreted either as the creation of employment opportunities within the commercial farming sector by encouraging commercial

farmers to increase employment levels or the creation of new business opportunities for small farmers through a process of land restitution.

Various absolute and relative poverty lines are used in South Africa. In recent years the 40th percentile cut-off point of adult equivalent per capita income has become quite a popular poverty line.[8] This was equal to R5,057 per annum in 2000 (IES/LFS 2000). This relates to a poverty headcount ratio (defined as the proportion of the population living below the poverty line) for South Africa of 49.8% (IES/LFS 2000).[9] The 20th percentile cut-off of adult equivalent income (R2,717 per annum) is sometimes used as the 'ultra-poverty line'. About 28.2% of the South African population lives below this poverty line.

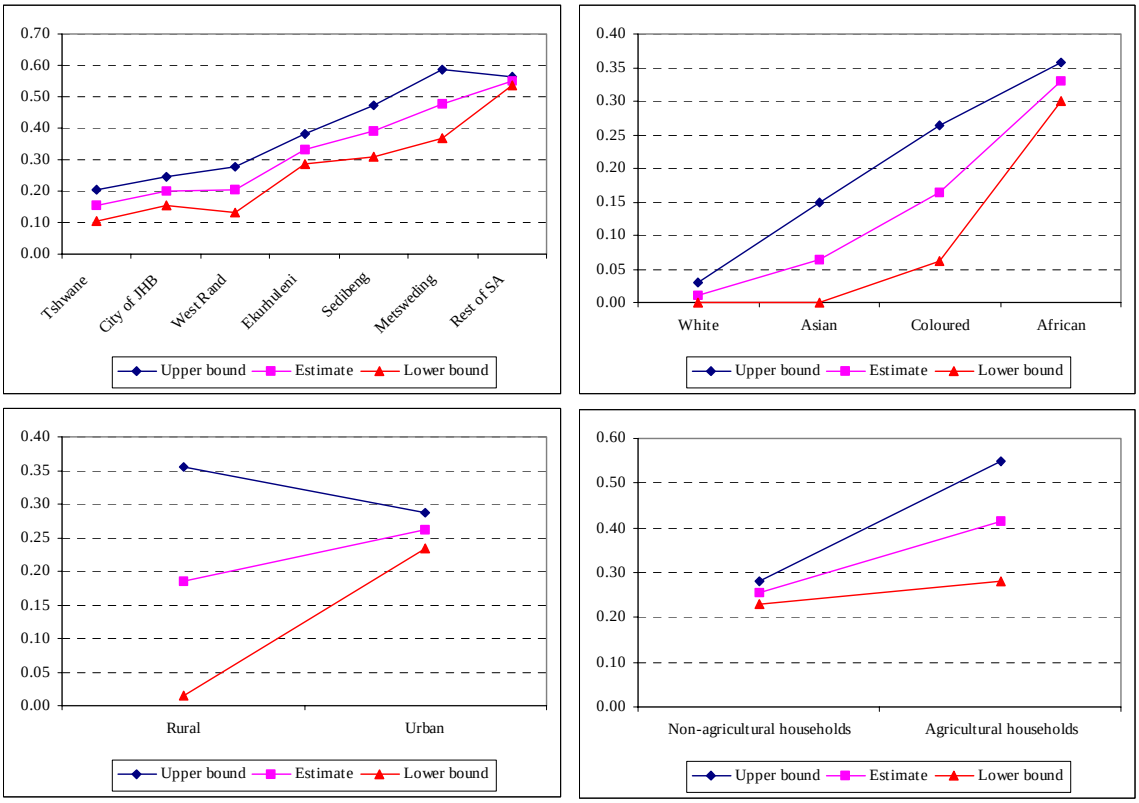
These same national poverty lines are used for the provincial analysis as this allows for comparisons of poverty across provinces. Gauteng poverty rate of 25.8% is significantly lower than the national average, while the ultra-poverty rate is 11.2%. Figure 3 compares poverty rates for various population subgroups (race, municipality, location and agricultural/non-agricultural households). The subgroups are ranked from lowest to highest poverty rates for easy comparison. The upper and lower bands on the graph represent the 95% confidence intervals.

Poverty rates in all the municipal districts in Gauteng are lower than the national average. Tshwane has the lowest poverty rate (15.4%), followed by the City of Johannesburg (20.0%) and West Rand (20.6%). The rate then rises rapidly for Ekurhuleni (33.4%), Sedibeng (39.2) and Metsweding (47.8%). Poverty rates vary greatly between racial groups. There is virtually no poverty among White people (1.1%), and only 6.5% of the Asian population are poor. In sharp contrast the poverty rates for Coloured and African people are 16.3% and 33.0% respectively. Rural poverty appears to be lower than urban poverty, but the limited number of observations and high variability in the estimate suggests that this cannot be confirmed with certainty. The urban poverty rate is 26.1%. Finally, the poverty rate is also much higher among agricultural households (41.6%) than non-agricultural households (25.5%). Some interesting comparisons between poverty and unemployment rates are drawn later in the paper (see section 3.3)

[8] The adult equivalent household size variable, *E,* is calculated as $E = (A + \alpha K)^{\theta}$, with *A* the number of adults per household and *K* the number of children under the age of 10. In this paper the parameters α and θ are set equal to 0.5 and 0.9 respectively (following May *et al.*, 1995 and others).

[9] The poverty headcount ratio is usually calculated using the Foster-Greer-Thorbecke class of decomposable poverty measures (see PROVIDE, 2003 for a discussion). Poverty measures were also calculated to determine the depth and severity of poverty, but we do not report on these in this paper.

Figure 3: Poverty rates by population subgroups

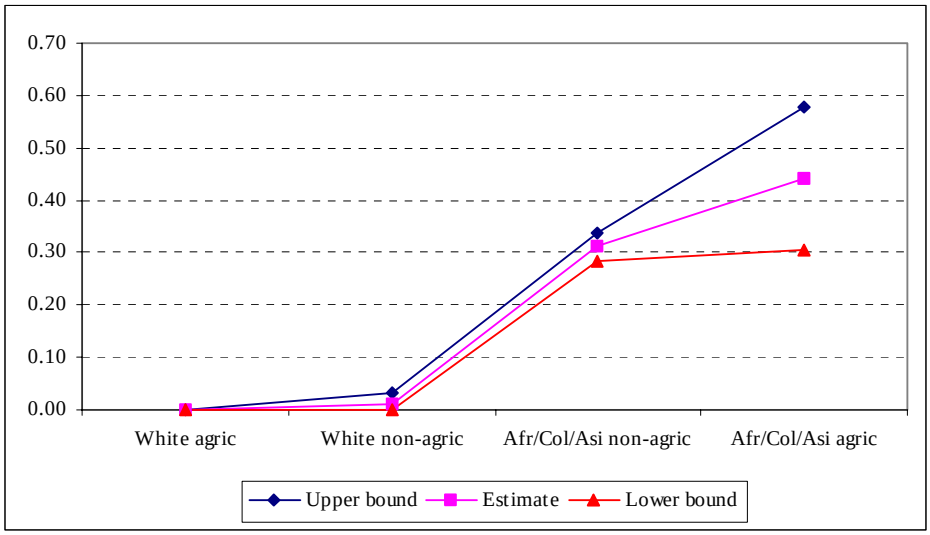


Source: IES/LFS 2000

Note: The poverty headcount ratios show the proportion of *people* living in poverty and not the proportion of *households*.

Section 3.2 explores the distribution of income in Gauteng. The inequality that exists in Gauteng, and particularly between racial groups within agriculture, is reflected in the poverty rates shown in Figure 4. Virtually none of the White agricultural and non-agricultural population is poor, compared to 31.1% of the Coloured/African/Asian non-agricultural population. The poverty rate for the African agricultural population is significantly higher (44.1%).

Figure 4: Poverty rates by race and agricultural/non-agricultural population

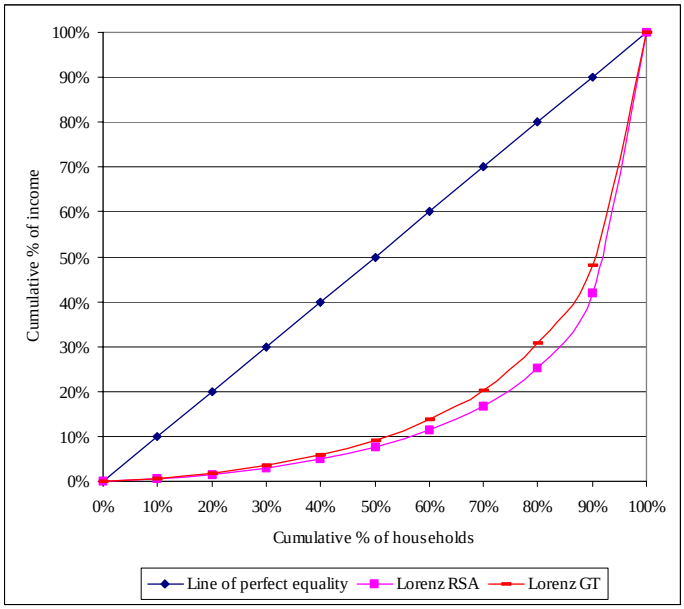


Source: IES/LFS 2000

3.2. Inequality in the distribution of income

Previously it was shown that Gauteng is one of the most affluent regions in South Africa. But how is the income distributed among the population? Various income distribution or inequality measures exist in the literature (see PROVIDE, 2003 for an overview). One approach to measuring inequality is using Lorenz curves. A Lorenz curve plots the cumulative share of households against the cumulative share of income that accrues to those households. In a society where income is perfectly distributed the Lorenz curve is a straight line. When the income distribution is unequal, the Lorenz curve will lie below the 'line of perfect equality'. Figure 5 shows that Gauteng Lorenz curve is always above the South African Lorenz curve, which suggests that income is distributed more equally in this province than in the rest of the country.

Figure 5: Lorenz curves for Gauteng and South Africa



Source: IES/LFS 2000

The Gini coefficient is perhaps the best known inequality measure and can be derived from the Lorenz curve (see PROVIDE, 2003). Mathematically the Gini coefficient varies between zero and one, although in reality values usually range between 0.20 and 0.30 for countries with a low degree of inequality and between 0.50 and 0.70 for countries with highly unequal income distributions. Table 7 shows the Gini coefficients for various groups of countries. Clearly South Africa's Gini coefficient, estimated at about 0.69 (IES/LFS 2000), is very high.

Table 7: Trends in income distribution – 1960 and 1980

Group of Countries	*Gini coefficient: 1960*	*Gini coefficient: 1980*
All non-communist developing countries	0.544	0.602
Low-income countries	0.407	0.450
Middle-income, non-oil-exporting countries	0.603	0.569
Oil-exporting countries	0.575	0.612
Gini coefficient: South Africa (1995)*	0.64	
Gini coefficient: South Africa (2000)*	0.70	

Source: Adelman (1986) cited in Todaro (1997).

Note (*): Author's calculations based on IES 1995 and IES/LFS 2000. Unfortunately not much can be read into the apparent increase in inequality since the data sources are not necessarily comparable.

Gauteng's Gini coefficient is 0.65 (IES/LFS 2000), which is lower than the national Gini coefficient, but is still high according to international standards. A useful decomposition technique can be used to identify the sources of inequality. From the IES/LFS 2000 a number of household income sources can be identified, namely income from labour (*inclab*), gross operating surplus (*incgos*), and transfers from households (*inctrans*), corporations (*inccorp*)

and government (*incgov*). Total household income (*totinc*) is thus defined as *totinc* = *inclab* + *incgos* + *inctrans* + *inccorp* + *incgov*. McDonald *et al*. (1999) show how the Gini coefficient can be decomposed into elements measuring the inequality in the distribution of these income components. Consider the following equation:

$$G = \sum_{k=1}^{K} \left\{ \left[\frac{\operatorname{cov}(y_k, F(y))}{\operatorname{cov}(y_k, F(y_k))} \right] \left[\frac{2\operatorname{cov}(y_k, F(y_k))}{\mu_k} \right] \left[\frac{\mu_k}{\mu} \right] \right\} = \sum_{k=1}^{K} R_k G_k S_k$$

The index k represents the income sources. S_k is the share of the k^{th} income source in total income, G_k is the Gini coefficient measuring the inequality in the distribution of income component k and R_k is the Gini correlation of income from source k with total income (see Leibbrandt *et al.*, 2001). The larger the product of these three components, the greater the contribution of income source k to total inequality as measured by G. S_k and G_k are always positive and less than one, while R_k can fall anywhere in the range [-1,1] since it shows how income from source k is correlated with total income.

Table 8 decomposes the Gini coefficient of Gauteng. It also gives decompositions for subgroups by race and agricultural households. A clear pattern that emerges for all the subgroups is a very high correlation between the overall Gini and the Gini within income component *inclab*. Furthermore, *inclab* typically accounts for over 80% of total income (except for agricultural households). Consequently, it is not surprising to note that most of the inequality is driven by inequalities in the distribution of labour income. However, what is interesting to note is that *incgos* contributes substantially more to overall inequality among agricultural households than for non-agricultural households. Income from gross operating surplus can be interpreted as returns to physical and human capital, and, in an agricultural context, the returns to land owned by the agricultural household.

These results suggest that although inequalities within agricultural households are driven primarily by inequalities in the distribution of wages, inequalities in the ownership of land and capital also contributes significantly to agricultural inequalities.[10]

[10] The results are certainly questionable. Simkins (2003) notes large changes in the levels of *incgos* and *inclab* between IES 1995 and IES 2000 (*incgos* fell significantly, while *inclab* increased), an indication that *incgos* is possibly underreported due to confusion that may exist among respondents as to whether income earned from self-employment in agriculture should be reported as income from labour or income from GOS.

Table 8: Gini decomposition by race and agriculture in Gauteng

	All households							
	Rk	*Gk*	*Sk*	*RkGkSk*				
inclab	0.97	0.69	0.85	0.57				
incgos	0.72	0.97	0.05	0.03				
inctrans	0.29	0.93	0.02	0.01				
inccorp	0.77	0.98	0.04	0.03				
incgov	0.33	0.88	0.04	0.01				
				0.65				
	African/Coloured/Asian households				White households			
	Rk	*Gk*	*Sk*	*RkGkSk*	*Rk*	*Gk*	*Sk*	*RkGkSk*
inclab	0.96	0.64	0.85	0.52	0.93	0.53	0.85	0.42
incgos	0.62	0.95	0.05	0.03	0.80	0.98	0.04	0.03
inctrans	0.28	0.92	0.03	0.01	0.21	0.95	0.01	0.00
inccorp	0.65	0.98	0.02	0.01	0.38	0.92	0.06	0.02
incgov	0.11	0.84	0.05	0.00	0.26	0.92	0.03	0.01
				0.57				0.49
	Agricultural households				Non-agricultural households			
	Rk	*Gk*	*Sk*	*RkGkSk*	*Rk*	*Gk*	*Sk*	*RkGkSk*
inclab	0.96	0.64	0.67	0.41	0.97	0.69	0.85	0.57
incgos	0.88	0.95	0.13	0.11	0.71	0.97	0.05	0.03
inctrans	0.57	0.90	0.05	0.03	0.28	0.93	0.02	0.01
inccorp	0.97	0.98	0.06	0.06	0.77	0.98	0.04	0.03
incgov	0.69	0.93	0.09	0.05	0.31	0.88	0.04	0.01
				0.66				0.65

Source: Author's calculations, IES/LFS 2000

The Gini coefficients suggest that inequality among agricultural households (0.66, with a confidence interval of [0.61, 0.70]) is not necessarily different from inequality among non-agricultural households (0.65, with a confidence interval of [0.64, 0.66]). An alternative measure of inequality, the Theil index, is very different from other inequality measures. It is derived from the notion of entropy in information theory (see PROVIDE, 2003). The Theil inequality measure for agricultural households is 0.89 [0.72, 0.99] compared to 0.88 [0.83, 0.95] for non-agricultural households. These results seem to reiterate the belief that the degree of inequality among agricultural and among non-agricultural households is similar.

These findings raise some interesting questions. Cleary income inequality among agricultural households is a concern, but indications are that income is as skewed among non-agricultural households. Land restitution has been placed at the top of the government's agenda to correct inequalities in South Africa. Although similar economic empowerment processes are in place in non-agricultural sectors, the process of agricultural land restitution has been highly politicised. The question is will more equality among agricultural households necessarily impact on the overall inequality in Gauteng? This question can be answered by decomposing inequality the Theil inequality measure into a measure of inequality within a population subgroup and a measure of inequality between population subgroups. The Theil

inequality measure (*T*) for Gauteng population as a whole is 0.81. This figure can be decomposed as follows (see Leibbrandt *et al.*, 2001):

$$T = T_B + \sum_{i=1}^{n} q_i T_i$$

The component T_B is the between-group contribution and is calculated in the same way as *T* but assumes that all incomes within a group are equal. T_i is the Theil inequality measure within the i^{th} group, while q_i is the weight attached to each within-group inequality measure. The weight can either be the proportion of income accruing to the i^{th} group or the proportion of the population falling within that group. Table 9 shows the results of a Theil decomposition using income and population weights with agricultural- and non-agricultural households as subgroups.[11] The between-group component contributes virtually nothing (0.3%) to overall inequality. Although both subgroups have relatively high inequality levels, inequality among agricultural households only contributes 0.01 (1.2%) or 0.02 (0.3%) to overall inequality. Non-agricultural households contribute 0.87 (98.5%) or 0.86 (97.4%) to overall inequality in Gauteng, depending on the weights used. These results suggest that a correction of inequalities within agriculture will do little to reduce inequality in the province as a whole as most of the inequality is driven by inequalities among non-agricultural households, mainly because agricultural households make up a very small proportion of all households and therefore earn a small proportion of the total income.

Table 9: Theil decomposition – agricultural and non-agricultural households

Income weights	q_i	T_i	$\sum_{i=1}^{n} q_i T_i$	T_B	$T = T_B + \sum_{i=1}^{n} q_i T_i$
Agricultural households	0.01	0.89	0.01		
Non-agricultural households	0.99	0.88	0.87		
Sum			*0.88*	*0.00*	*0.88*
Population weights					
Agricultural households	0.02	0.89	0.02		
Non-agricultural households	0.98	0.88	0.86		
Sum			*0.88*	*0.00*	*0.88*

Source: Author's calculations, IES/LFS 2000

Note: The different decomposition techniques do not necessarily lead to the same overall Theil index.

3.3. Employment levels and unemployment

There are approximately 2.87 million workers in Gauteng (IES/LFS 2000).[12] Statistics South Africa distinguishes between eleven main occupation groups in their surveys. These include

[11] The income weight for agricultural households is the total income to agricultural households expressed as a share of total income of all households in the province. The population weight for agricultural households is expressed as the share of the population living in agricultural households (see Table 2 and Table 5).

[12] 'Workers' are defined here as those people that report a positive wage for 2000. People who were unemployed at the time of the survey but who have earned some income during the previous year will therefore be

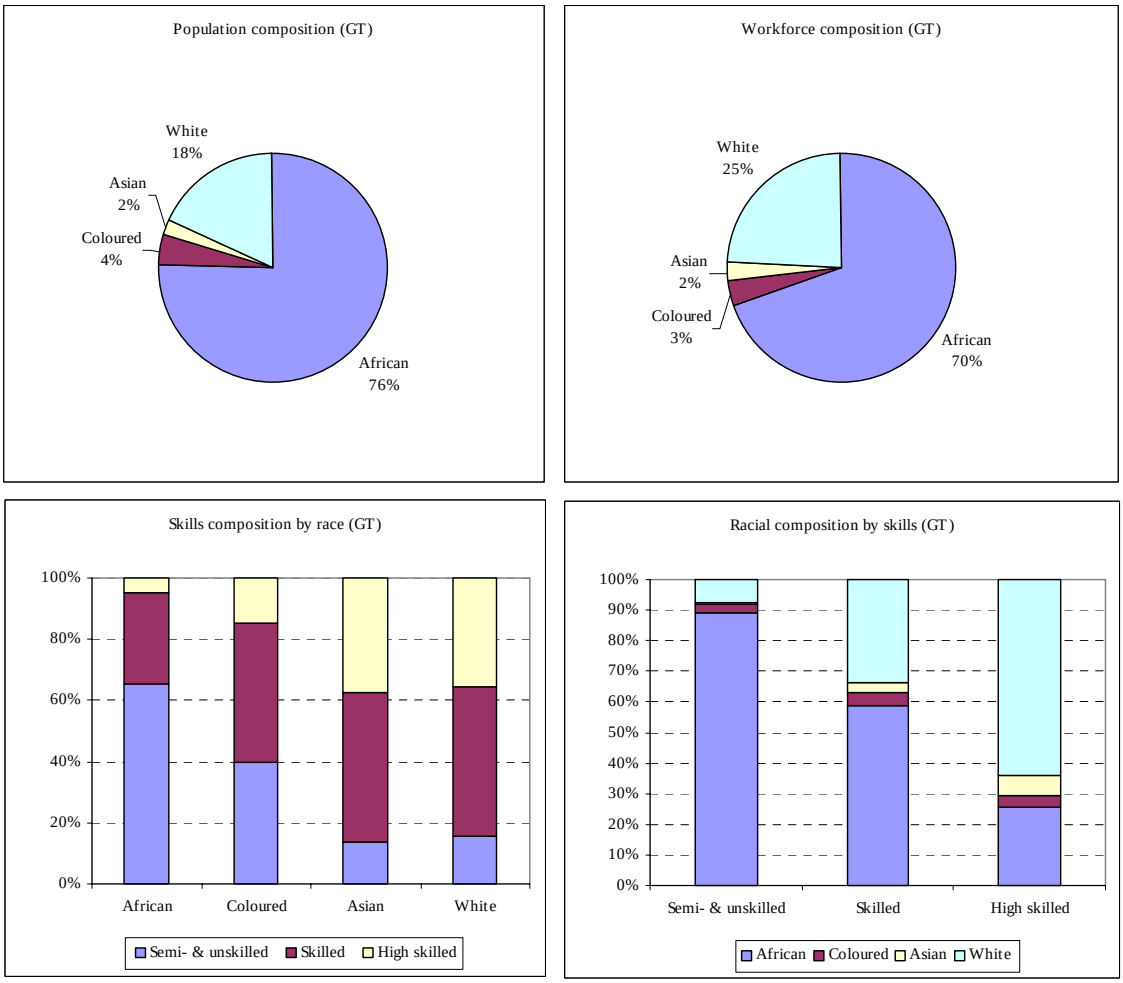
(1) legislators, senior officials and managers; (2) professionals; (3) technical and associate professionals; (4) clerks; (5) service workers and shop and market sales workers; (6) skilled agricultural and fishery workers; (7) craft and related trades workers; (8) plant and machine operators and assemblers; (9) elementary occupations; (10) domestic workers; and (11) not adequately or elsewhere defined, unspecified.

For simplification purposes the occupation groups are aggregated into various skill groups, namely high skilled (1 – 2), skilled (3 – 5), and semi- and unskilled (6 – 10).[13] Figure 6 explores the racial composition of the workforce by race and skill and compares these figures with the provincial racial composition. The overall racial distribution of the workforce is fairly similar to the racial composition of the province as whole, although Africans are slightly under-represented. This, however, is much more pronounced within skill groups. African workers are typically more concentrated around the lower-skilled occupation groups, while White and Asian workers are more concentrated around the higher-skilled occupations. Clearly much still needs to be done in Gauteng to bring the racial composition of the workforce more in line with the provincial-level population composition at all skills levels.

captured here as workers. In the unemployment figures reported later the *current* status of workers is reported, irrespective of income earned. Employment figures reported here are therefore higher than the official employment figures.

[13] Unspecified workers (code 11) are not included in a specific skill category since the highly dispersed average wage data suggests that these factors may in reality be distributed across the range of skill categories.

Figure 6: Racial representation in the workforce of Gauteng



Source: IES/LFS 2000

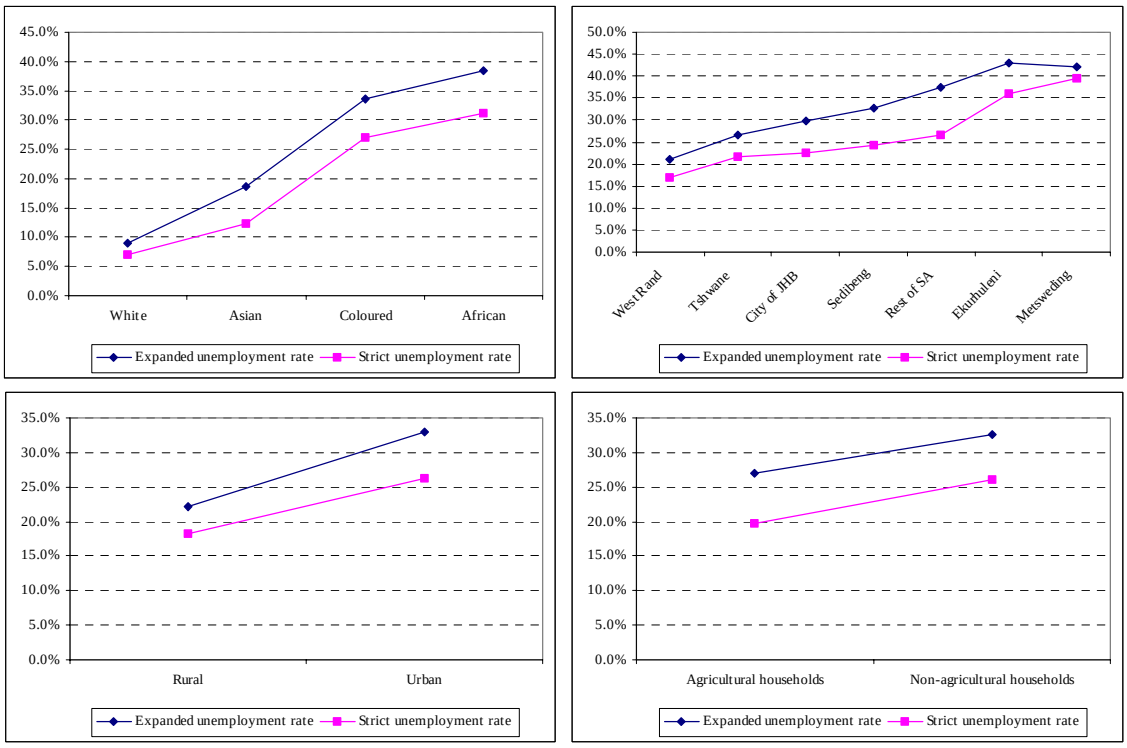
Statistics South Africa uses the following definition of unemployment as its strict (official) definition. The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. The expanded unemployment rate excludes criterion (c). Gauteng has a population of about 7.75 million people of which approximately 2.79 million people are employed (see footnote 12). Under the strict (expanded) definition about 3.99 (3.62) million people are not economically active, which implies that 971,484 (1.34 million) people are unemployed. This translates to an unemployment rate of 25.8% (32.5%), which is slightly lower than the national rate of 26.4% (36.3%) for 2000.[14]

[14] The official (expanded) LFS March and September 2003 (SSA, 2004) unemployment figures are 31.2% and 28.2% for South Africa respectively.

In Figure 7 the unemployment rates (official and expanded) are compared for different population subgroups. Unemployment rates are fairly low among White people (7.0% to 9.1%), and rises rapidly for Asian (12.3% to 18.7%), Coloured (27.0% and 33.5%) and African (31.1% and 38.5%) people. A comparison of the municipal areas shows that the unemployment rate in most of regions is below the national average. Only Ekurhuleni (35.8% to 42.9%) and Metsweding (39.4% and 32.1%) have unemployment rates above the national average. Unemployment is also significantly higher in urban areas (26.2% to 33.0%), but given that almost the entire population lives in urban areas the estimate for rural areas is possibly biased. Finally, unemployment is also lower among agricultural households (19.7% to 26.9%) than non-agricultural (26.0% and 32.6%) households.

In general the gap between the strict and expanded unemployment estimates is not as large in Gauteng as in some of the other provinces. This suggests that more unemployed people are actively seeking jobs. A large gap is usually indicative of the long-term unemployment problem where people have given up searching for jobs.

Figure 7: Unemployment rates by population subgroups

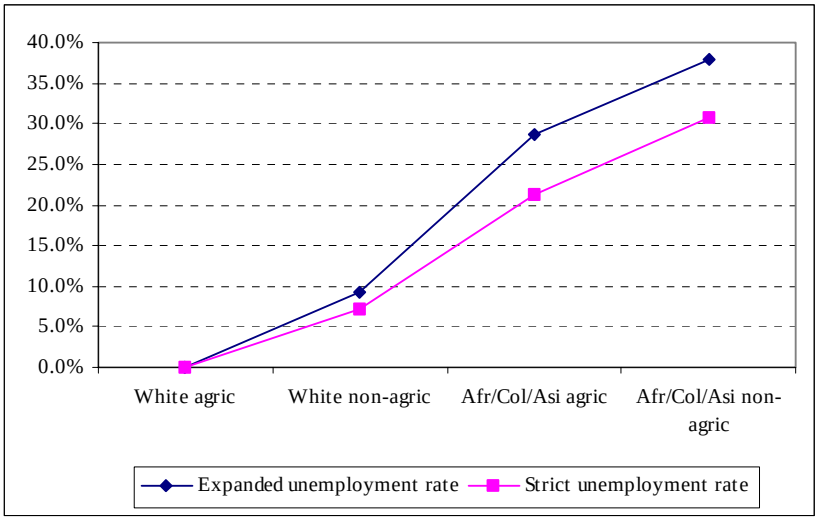


Source: IES/LFS 2000

A comparison of unemployment rates by race (Asian/Coloured/African and White) and agricultural/non-agricultural households shows that unemployment levels in agriculture are driven mainly by unemployment among Coloured/African workers. The unemployment rate

for Coloured/African agricultural workers is also lower than the unemployment rate for Asian/Coloured/African non-agricultural workers. In fact, most of the unemployment in Gauteng appears to be driven by unemployment among African/Coloured/Asian non-agricultural workers. An interesting comparison can be made between Figure 8 and Figure 4. The latter shows that poverty appears to be highest among Coloured/African agricultural households, yet unemployment is lower. One possible explanation for this is inaccurate accounting by agricultural households of the value of goods and services (such as food, clothing and housing) received in kind from employers, which leads to an overestimation of poverty rates. However, this does not take away the fact that agricultural wages are often very low compared to non-agricultural wages. This may explain higher employment levels among agricultural households, but often these people can be classified as the 'working poor'.

Figure 8: Unemployment rates by race and agricultural/non-agricultural population



Source: IES/LFS 2000

4. Conclusions

Gauteng has a large, highly urbanised population. As the engine of economic growth in South Africa the province contributes about one third to GDP. The majority of the population is African, while the province also has a relatively large share of Asian and White people compared to other provinces. Large parts of Gauteng are classified as urban or metropolitan areas, and being the most industrialised province in South Africa it understandably has a very small agricultural sector. Only 6.2% of households are broadly defined as agricultural households, while under the strict definition only 2.6% are classified as agricultural households. The large gap between the broad and strict definitions suggests that for many agricultural households farming activities do not contribute greatly to the pool of household income.

The people of Gauteng earn a relatively high per capita income and also enjoy lower poverty rates than some of the other provinces. Those that are deemed poor are mostly African and Coloured people, while the poverty rate is also higher in urban areas. Agricultural households have a higher poverty rate than non-agricultural households. Gauteng has a relatively low degree of inequality in the distribution of income. The inequality that does exist is driven mainly by inequalities in the distribution of wages. Inequality is also not higher among agricultural households than non-agricultural households. However, income from gross operating surplus (land and capital ownership) contributes relatively more to agricultural inequality than non-agricultural inequality. This may have important implications for the effectiveness of land restitution programmes. However, it is also important to note, given the small proportion of the population involved in agriculture, that a correction of agricultural inequalities will not have any significant impact on overall inequality in the province.

Finally, concerning the factor market, Gauteng has relatively low unemployment rates. It is also interesting to note that the gaps between the strict and expanded rates are generally smaller than in the rest of the country, which suggests that relatively more of the unemployed actively seek jobs, probably because the probability of finding employment in Gauteng is larger than elsewhere.

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