Income inequality in the Gauteng City-Region – sources and decompositions

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Abstract

This paper lays the basis for an analysis of income inequality in the Gauteng City-Region (GCR) – South Africa’s smallest but densely populated region. The GCR is the fastest growing region in South Africa. It contributes 34% of the country’s Gross Domestic Product (GDP), making it the main driver of the national economy. Given its level of industrialization and urbanization coupled with a large and increasing population, the GCR exerts significant influence on the lives of many people in South Africa. However, there are significant differences in wealth and income that provoke important questions about the inequitable distribution of wealth and income. A number of inequality studies have focused on South Africa due to the nature of the available datasets. However, analyses pitched at national level usually mask the heterogeneities that are often present in localised and unique areas such as the GCR. The unique focus on Gauteng and the more disaggregated (municipal level) approach permits more nuanced results with spatially relevant policy implications. Using recently generated Quality of Life (QoL) survey data; we decompose income inequality according to source, subpopulation groups and location. The convenience of the user-written Stata command descogini also allows us to measure the effects on overall inequality of marginal changes in a particular income source. Preliminary results show that the racial footprints of apartheid are still visible across the GCR.

Keywords: income inequality, income source, income shares, Gini coefficient, decompositions, Gauteng
1 Introduction

Addressing inequality is one of the key policy objectives of the South African government. It has become established in both local and international literature that the level of inequality in South Africa is one of the highest in the world (Tregenna and Tsela 2012; World Bank, 2012). Sadly, inequality is not just high but is increasing. Since 1994, inequality alongside poverty remains an intractable challenge confronting the new government. The the distribution and re-distribution of income and wealth are major debating points that are both politically controversial and conceptually challenging (Bosch et al, 2010; Bernstein, 2010).

Understanding inequality and its subsequent impact on society is therefore a priority research area for policy makers and academics alike. Urgent answers are needed to questions on why inequalities persist. The persistence of inequality not only speaks volumes about the structural challenges in the economy but also the efficacy of existing government policies aimed at addressing skewness in the distribution of income in the country. Inequality, in particular high inequality, impedes government efforts towards reducing poverty and its persistence is a threat to social cohesion and social justice (Everatt, 2003; Tregenna, 2011). Reducing inequality is therefore a legitimate goal of government and a key step towards achieving the ultimate goals of social justice and social cohesion (Salardi, 2005).

Strategies for reducing inequality critically depend on a better understanding of the sources of inequality (Shams, 2012). This study seeks to provide such an understanding by (i) mapping the spatial configuration of inequality and (ii) identify the key factors that drive inequality and how these vary spatially. Unlike most studies on inequality that a national oriented, this focused only on the Gauteng City-Region (GCR). Analysis pitched at national level usually mask the heterogeneities that are often present in localised and unique areas such the GCR. This study aims to fill this knowledge gap hence provide useful and relevant information to government at local level policy implementation takes place. Spatial inequalities are typically thought of as a construct arising out of variations in economic endowments, geography, and socio-political structure (Dutta and Nagarjan, 2005). All these factor are at play in the economics history of the GCR, in particular resource endowments and the legacy of apartheid.
2 The problem

Undisputedly, inequality patterns in South Africa are directly rooted in the country’s colonial history, driven mainly on a racial basis over centuries. Such a system created institutional structures that supported and perpetuated skewness in the distribution of income and wealth as well as entrenched poverty among the disadvantaged groups of society. That said, the natural policy recommendation is to redistribute income, hence lower inequality.

However, proceeding with remedial action directly on this basis, (though justifiable) may turn out to be both impulsive and misleading from a practical point of view. For example, in 2012, COSATU, the country’s main labour union, called for an urgent “overhaul of the country’s macro-economic policies and a radical economic shift necessary to deal with unemployment, poverty and inequality”\(^1\) (SABC, 2012). While such audacious public remarks appeal to particular quotas of society, they do lack substance in terms of the precise steps that government needs to take in order to address these challenges.

A detailed and systematic understanding of the factors sustaining inequality and the manner in which people are positioned in society in terms of access to resources is critical (Knight & Lina 1991; Jenkins, 1995; Du Toit 2006). In addition, key determinants of inequality need to be identified and tested with a view to provide effected and more informed policy leads for government on how to lower the skewed distribution of income. (Adams and He, 1995).

3 Why inequality

South Africa’s major developmental challenges are poverty and inequality. While these challenges are related, they are totally different and capable of being analysed separately. This study focuses on analysing inequality in the GCR and this is so for specific reasons. Unlike poverty, inequality studies cast analysis over an entire population as opposed to a segment of the population e.g. people falling below a particular income threshold. Where decompositions by population subgroups are possible, inequality analysis can be instrumental in understanding the severity of poverty among the different subgroups (Todaro and Smith, 2011).

\(^1\)Zwelinzima Vavi, COSATU Secretary General, reacting to events in the mining sector triggered by the Marikana shooting incident.
The premise of the study is that, in order for government to deal decisively with poverty, it needs to first tackle inequality. High levels of inequality prohibit the poor from fully participating in the growth process (Bangura, 2012). By restricting the expansion of the domestic market, inequality may create institutions that trap the poor into poverty in particular where inequality is associated with class, race and gender (ibid).

Further, the persistence of inequality potentially results in unprecedented societal problems such as crime, corruption, social exclusion and instability. These social “ills” are often manifested at local levels such as a municipality or province e.g. xenophobia and service delivery protests, a case in point being the Marikana disaster. Social ills are undesirable for the economy and may cause the poor to sink deeper into poverty.

4 Why the GCR?

Studies such as NIDS are very important but analysis is only possible at national level. The resultant analysis mask the heterogeneities often found at localised levels. This is a common feature whenever nationally aggregated indices are used (Betz, 1974; Dutta and Nagarjan, 2005). The GCR possess several unique spatial characteristics that warrant a dedicated inequality analysis. If successful, such analysis has the potential to generate meaningful policy solutions that have spatial relevance. Some of the unique characteristics worth mentioning at this point include (i) an extensive urban area dominated by three of the country’s major metropolitan municipalities i.e. Johannesburg, Tshwane and Ekurhuleni, (ii) rapid urbanisation, (iii) large and growing population, and (iv) excessive immigration. The region also generates very high returns to location than any of the other provinces and these returns seem to drive expansion in the region and growth in the local economy. Footprints of apartheid are very vivid in the GCR with clear differences in terms of access to services between the previously disadvantaged areas and those once privileged. In addition the bulk of the population in the GCR look to employment as the major source of income. It is therefore not uncommon to observe an astronomically wide range in personal income across the GCR. This constrasts sharply with rural province where occupations are less diverse. GCR faces gross inequalities in personal income as a result of its geographical, urban and economics standing (OECD, 2011).
Therefore the main motive for directing attention on Gauteng is to expose the spatial dimensions of inequality often missing in most studies. Economic endowments and activity, socio-economic structure, and levels of integration into the broader economy are rarely uniform across space. On the basis of knowledge, policy formulation also need to be spatially relevant.

5 Gauteng City-Region

The GCR is a particular spatial and planning concept adopted by the Gauteng Provincial Government (GPG) in order to denote an area of some socio-economic importance that stretches beyond the administrative boundaries of Gauteng province (GPG, 2005). See Figure 1 below.

Inspite of its small geo-size, the GCR exerts significant influence on the lives of people in South Africa as well as the sub-region. It has a population of over 12 million (Stats, SA,

2011) translating to 23.7% of the country’s total population. The population density is also very high, 675 people per km² compared to a national average of just 42 people per km². The GCR is dominated by the three metropolitan areas of Johannesburg, Tshwane and Ekurhuleni and therefore population densities are not uniform across the GCR space. Its industrial base is wide and diverse industrial and it contributes 34% of the country’s Gross Domestic Product. This make the the GCR the main driver of the national economy (Kok, 1998; OECD, 2011). It is also the country’s economic heartland and a continental leader in innovation (OECD 2011). International studies have shown that levels of inequality can be potentially acute in cities due to high heterogeneity of persons and occupation typical found in urban areas (Glaeser et al, 2009). Large cities The acute diversities of people in large cities also create fertile ground for social and economic inequalities as has been observed in Brazil (Salardi, 2005; OECD, 2011).

5.1 Gauteng economy
Historically, the Gauteng province established itself as the economic heartland of South Africa due the large concentration of gold mining and subsequent development of industrial and financial services. This position was consolidated over the years such that the size of its economy equated or even surpassed that of other African countries. For example in 1992, Gauteng’s economy was larger than some of the richest countries in Africa at the time, such as Egypt and Nigeria (Kok, 1998). According to 1996 data from the Central Statistical Services (now Stats SA), Gauteng contributed 37.2% of the country’s economic output measured in terms of Gross Domestic Product (GDP), (Hall and Whiteford, 1998). Between 1995 and 2008, Gauteng’s GDP grew at an average annual rate of 3.6%, 0.1 percentage points higher than the national average (OECD, 2011). As a result, Gauteng has been and still remains the wealthiest province in the country (Kok, 1998; OECD, 2008). It is certainly the driver of the South Africa economy, a trend common to most city regions in the world (OECD, 2011). With such a vibrant economy, one would expect benefits of a large economy to reach the poorest by trickle-down effect. However, existing evidence shows that the poor have not been the direct beneficiaries of economic growth and this is due to the structural nature of inequality.

5.1.1 Municipal contribution to GDP
An important feature of the Gauteng economy useful for this study is the variation in economic endowments of the different municipalities in the GCR. Figure 2 below shows
that contribution to the GCR economy is dominated by three metropolitan municipalities.

Figure 2: Percentage contribution to GVA\(^3\) per main area. Source: Author using Quantec data

The City of Johannesburg contributed 38.9\% in 2011 and Metsweding only 1.2\% in the same year. The annual trend has generally been similar between 1996-2011. The share of the bottom three municipalities fell by 3.2 percentage points from a combine share of 13.4\% in 1996 to 10.2\% in 2011. The observed spatial differences in contribution to total GVA speaks volumes about variations in local economies across municipalities. Returns to location are lower for municipalities that are contribute the least and this may have bearing on the incomes of residents.

Looking at a more localised level, Figure 3 shows an even strikingly skewed pattern. There is evidence that economic activity is concentrated in just a few areas, mainly Johannesburg, Soweto, Roodepoort, Randburg and Sandton respectively.

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\(^3\) Gross Value Add at 2005 constant prices. Author construction using Quantec data
5.1.2 Globalisation

Gauteng occupies a key role in South Africa’s export sector. When production is designed to satisfy global markets, it may require highly skilled and specialised labour often to be found in a small proportion of the population. This may shift attention away from the poor who often do not possess the requisite skills needed to enter a competitive labour market. The gap between the rich and the poor is further widened.
Provincial data on exports shows the contribution of Gauteng remains far surpasses that of other provinces (see Figure 4 above). The contribution mirrors that of national, an indication that Gauteng economy exerts significant influence on the national economy. Trade links particularly with Europe can be risky when events such as the recent global economic crisis occur as show by the dip in 2009. If income distributions are highly skewed those in the lower echelons of the income distribution will be hardest hit by the crisis.

6 Key research questions

The key questions that guide this study are:

1. What are the major income sources in Gauteng and how are these distributed by according to race, sex, age and location i.e. share distribution of income?
2. What is the relative importance of each income source to overall inequality?
3. What is the impact of marginal changes in income sources on overall inequality?

7 Methodology

There are several measures that can be used to analyse inequality. This study uses the Gini coefficient, which takes the values between 0 (perfect equality) and 1 (perfect inequality). The Gini is by far the most widely used measure of inequality. Its merits are
it is decomposable into several subgroup categories, (ii) it corresponds neatly with the Lorenz curve and (iii) it is easy to interpret. Inequality decompositions of the Gini by income source are particularly useful. Generally, total household income is an aggregate of income from a variety of sources e.g. wages, transfers, remittance and investments. The share size of each income source can have significant influence on overall inequality depending on which group earns such income and at what point in the distribution they are located. Such analysis therefore exposes the workings of the labour market and the economy in general and how changes in these sectors affect overall inequality. Several analyses will be carried out and these are:

7.1 Income source analysis
7.1.1 Overall income shares
7.1.2 Distribution of households by income shares
7.1.3 Income shares by Municipality
7.1.4 Income shares by Ward
7.1.5 Sex
7.1.6 Race

7.2 Decomposition by income source
7.2.1 Decomposing overall inequality
7.2.2 Decomposing overall inequality by municipality
7.2.3 Sex
7.2.4 Race

7.3 Inequality decomposition by area
7.3.1 Within municipality
7.3.2 Between municipality

7.4 Income source effects on inequality
Lerman and Yitzhaki (1985) gave a very useful decomposition of the Gini coefficient by income source. A user-written command, desgini was developed by Lopez-Feldman (2006) for this purposes. The results generated speak to the relative share of each income source, own-Gini of the income source and the degree to which overall inequality changes if there are marginal changes in the income source.
8 Data sources and data challenges

An analysis of inequality in the GCR is made possible by the availability of two very recent Quality of Life (QoL) surveys generated by the Gauteng City Region Observatory (GCRO). In line with its research agenda, the GCRO conducts a QoL survey every two years. So far, two QoL surveys have been conducted – QoL I in 2009 and QoL II in 2011 and a third is expected in 2013. The first two surveys were conducted on fairly large samples of 6636 and 16729 respondents respectively. The latter survey has been the largest of its kind at local scale after the census. These surveys focus on Gauteng and unlike most surveys, variables in the QoL datasets can be disaggregated by municipalities and even ward level. Therefore the datasets serve as a useful basis for determining living conditions of people in the GCR and for measuring development progress into the future.

9 Value of the study

Disparities in incomes have implications for economic growth, poverty and poverty reduction efforts (Ravallion, 2001; Bourguignon, 2004). This is expected to add to the growing body of literature on income inequality in South Africa and extends further the analysis by incorporating the spatial dimensions of income inequality that are often missing in most inequality studies for South Africa. Policies designed on the basis of aggregate measures when it is clear that strong spatial variations exist may lack precision in terms of targeting. This study is there instrumental for Gauteng in that (i) it allows for comparison of incomes across localised space such as municipality and (ii) it eliminates the problem of unobserved heterogeneity typical of national level analyses.

10 Research outputs and conclusion

This study is expected to come up with a set of inequality analysis products that collectively describe and explain inequality in the GCR. The spatial approach comes in handy for local municipalities in the region in terms planning for the future or for immediate intervention.

11 Preliminary results

Being processed.
REFERENCES


Catherine Barber (2008) Notes on Poverty and Inequality in From Poverty to Power: Background Paper Oxfam


Cowell F.A. (2000) Measuring Inequality. LSE Economics Series. Published by Oxford University


Fields G.S. (1979) Income inequality in urban Colombia: A decomposition analysis, Review of Income and Wealth 25, 327-341


OECD, (2011) Divided we stand; Why Inequality keeps rising. Special focus, Inequality Emerging Economies. OECD publishing


World Bank, (2012) Inequality in Focus Volume No. 1