

SPATIAL CONSIDERATIONS IN THE DEVELOPMENT OF URBAN POLICY IN SOUTH AFRICA: A RESEARCH PAPER AS INPUT INTO THE PREPARATION OF THE INTEGRATED URBAN DEVELOPMENT FRAMEWORK (IUDF)

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1. Introduction

This research report is a contribution to the preparation of an Integrated Urban Development Framework (IUDF) for South Africa. It focusses explicitly on spatial processes in South Africa's towns and cities, and should be read in the context of research papers dealing with other dimensions of urban development.

The National Development Plan (NDP) is a key departure point in the preparation of the IUDF:

As part of implementing the National Development Plan: Vision 2030, all three spheres of government in partnership with stakeholders need to manage the new wave of urbanisation in ways that also contribute to rural development².

Chapter Eight of the NDP is the specific departure point for this research report as it deals with "transforming human settlement and the national space economy". The Chapter gives strong emphasis to the importance of spatial transformation in addressing concerns with poverty and inequality. It argues that "where people live and work matters" and that "despite reforms to the planning system, colonial and apartheid legacies still structure space across different scales" (RSA, 2012, p.1).

The NDP provides an analysis of spatial development in rural and urban areas, and offers a strategy to "respond systematically, and over time, to entrenched spatial patterns across all geographic scales that exacerbate social inequality and spatial inefficiency" (p.1). This report does not repeat the content of the NDP, and should be read together with Chapter Eight. The report does however seek to deepen and extend the analysis in Chapter Eight by drawing on data that became available subsequent to the writing of the Chapter; in particular, Census 2011.

¹ The authors acknowledge the support of Miriam Maina, doctoral student at the University of the Witwatersrand, in the preparation of maps and in data analysis.

² Terms of Reference for the Panel of Experts (POE) constituted to guide the preparation of IUDF (Section 1.3).

This report focusses largely on data analysis. It does however begin with two contextual sections. First, it draws in international literature to argue that the core of urban spatial policy in South Africa should be ***opening and expanding access to the benefits of living in towns and cities***, especially proximity to jobs, to other livelihood opportunities, and to services and amenities. Secondly, the report provides a brief account of transformations within the national space economy, showing that Apartheid barriers are breaking down and that population and economic activity is increasingly concentrating within the major urban centres in South Africa.

The report then shifts to a detailed analysis of spatial dynamics within mainly urban municipalities. A comprehensive account of these dynamics is impossible given the large number of municipalities, and the enormous diversity amongst municipalities. We have, however, attempted to provide a sense of the diversity and complexity by drawing on a cross-section of municipalities in different parts of the country, and at different scales. Mainly drawing on census data, but also including economic data from various sources, we analysed spatial process in the City of Johannesburg, eThekweni Metropolitan Municipality (Greater Durban), Mangaung Metropolitan Municipality (Bloemfontein/Botshabelo), Polokwane Local Municipality, Mbombela Local Municipality (Nelspruit), King Sabata Dalindyebo (Greater Mthatha), Sol Plaatje (Kimberley), Knysna Local Municipality, and Greater Tzaneen Local Municipality (Sekhukhuneland). We explored trends including: population growth and decline; density changes; processes of racial segregation and desegregation; and changes in the space economy.

The report relates these processes to the theme of access; in particular access for the urban poor. Particular attention is given to the role of inner cities, informal settlements, backyard rental, inclusionary housing policy and new transport investments in shaping access.

Unsurprisingly, the picture is highly complex, and generalization from experience in one municipality is hazardous. However, we can conclude that far-reaching spatial transformations are happening across South Africa's towns and cities, although at very different rates, and often taking different forms. Many of the spatial trends are positive, bringing people and jobs/livelihood opportunities/services into a closer alignment. However, these processes have generally happened because the barriers to mobility have been loosened with the collapse of statutory Apartheid rather than because of proactive government policies.

There are also limits to certain of these processes. For example, the almost overwhelming demographic dominance of one race category – black Africans – in most places means that significant residential desegregation is unlikely, except in a few neighbourhoods.

Spatial processes which may be positive often have negative outcomes because they are poorly managed or facilitated by municipalities and other government authorities. Densification, for example, brings access to urban opportunities for increasing numbers of people. However, it also often happens together with slum formation, infrastructure overload and loss of valuable open space. The report concludes with consideration to the instruments that the State has to facilitate positive transformations, and to guide existing processes towards better outcomes.

2. Access as a Key Objective for Spatial Transformation

2.1 Access and its Co-Benefits

Spatial integration has been a key objective in post-Apartheid spatial planning, with policies to achieve this including densification and compaction of the urban fabric. This objective has been reiterated through policy, legislation and plans, but the purpose of spatial integration remains oddly vague and undefined.

If the objective of spatial integration was to achieve greater levels of social integration, then it has been pursued with little sense of urgency. Inclusionary housing policy, for example, was produced but legislation to implement the policy is still awaited. Internationally, environmental objectives have often been at the heart of policies for urban integration and integration. There is little indication in South Africa that this was the driving factor in spatial policy, although it has become increasingly important over time.

In this report, we argue that the underlying rationale of post-Apartheid urban spatial policy has, in fact, been to improve the access that the poor have to the “urban advantage”; that is, to jobs, livelihood opportunities, urban services and other amenities. We argue that “access” should, indeed, be foregrounded as the key objective for spatial transformation as it most directly links spatial policy to key national objectives of eliminating poverty and reducing inequality (as indicated in the National Development Plan, for example)³.

However, careful attention should also be given to realizing the *co-benefits* of access; most importantly, social cohesion and environmental sustainability. From the early 1990s scholars have argued for “co-evolutionary policies” which bring together ideas of “spatial mobility (allocative efficiency), spatial accessibility (distributional equity) and sustainable spatial development”

³Chapter Eight of the NDP refers to the South African Constitution which affirms the right of all to a healthy environment; *access* to adequate housing; and *access* to basic services (Sections 24 of the National Constitution referred to RSA, 2012, p.260) [our emphasis].

(Himanen et al, 1992, p.8). In the South African context, policies to support greater spatial access may also have the advantage of promoting greater levels of social integration and cohesion by producing a greater population mix⁴. Environmental sustainability is the other co-benefit as policies that produce better access to jobs, enhanced livelihood opportunities, reduced travel costs, and better household accessibility to services, may also support greater resource efficiency in households, reduce use of private motor cars, and more efficient use of land.(UN-Habitat, 2004)

The major instruments supported internationally for improving greater access (with the co-benefits as mentioned) is greater urban density, or increased intensity of land use, promoted together with investments in public transport systems. There is however also a growing recognition that densification creates challenges that must be managed⁵ and must be promoted together with a set of complementary policies, and with consideration to the specificity of context. UN-Habitat (2004, p.20) calls for policies and programmes to:

Promote, preserve and open up natural spaces; integrate and retrofit infrastructure to support higher densities in appropriate locations; develop a sustainable urban transport strategy that focuses on non-motorized and public transport options; identify and intensify urban nodes; support nodes and public transit corridors; enhance the role of the street as a multi-functional urban space that accommodates a range of activities and uses; promote mixed-use development and intensification of activities; and, practice good governance, knowledge sharing and cooperative approaches.

In the South African context, large cities are densifying rapidly, counter to an international trend (Angel *et al*, 2012), and so the question is less how to promote densification than how to leverage the benefits of densification to improve personal and household access to the urban advantage. The notion of access is explored in further detail below.

2.2 Access as a concept

Accessibility has been defined as “the opportunity that an individual at a given location possesses to participate in a particular activity or set of activities” (Odoki et al 2001, p. 601)⁶. Accessibility,

⁴ We will show in the paper, however, that there are limits to social integration in the South African context given the overwhelming and increasing numerical dominance of a single population group (i.e. black Africans) and also the relatively small size of the middle class.

⁵ There are, however, possible downsides to densification, especially in poorer countries including: higher land costs; less land for survival opportunities (especially agriculture); health and safety risks associated with concentration; and, conflict with socially accepted norms for living space; and, in some instances, higher costs of infrastructure. These need to be explicitly managed.

⁶ “Accessibility” and “inclusion” are closely related concepts, with accessibility being more clearly linked to spatial concerns. Both “accessibility” and “inclusion” respond to “exclusion” which Church et al referred to as

however, is a multi-dimensional concept with “spatial” and “non-spatial” aspects. Certain segments of the population, for example, may find it easier to access certain urban advantages, location notwithstanding (Horner, 2004). As Parks (2004, p.146) puts it, “spatial advantage may matter little if who you know, rather than where you are, gets you job”. Clearly, in many cases, aspects such as gender, ethnicity, race, class, income and level of education may be far more important than location in determining access to jobs and services (Odoki et al, 2001).

However, international studies do show that spatial elements are often significant in shaping access, and are especially important where spatial isolation correlates with social isolation (e.g. Parks, 2004)⁷. There is, for example, a strong argument in the literature, known as the “spatial mismatch hypothesis”, that the time-distance between work and residence affects the likelihood of an individual securing and sustaining a job. The reasons given for this include inefficient job searches, high commuting costs, and low worker productivity because of commuting times (Park, 2009). One study concluded that at least one-fifth of the employment rate differential between white and black males in large American cities could be explained by differentials in spatial access (Raphael, 1998)⁸. There is, arguably, sufficient international evidence of a correlation between spatial arrangements and labour market performance for a clear hypothesis in the South African context.

While the literature has focused on jobs consideration has also been given to access to services. At its most basic, access to service means an affordable service within reasonable distance but physical distance alone is inadequate as a measure as spatial access also depends on the configuration of transport systems. (Smoey-Tomic et al, 2004; Tsou et al, 2005)

There is always a degree of complexity which must be acknowledged in urban policies that address spatial dimensions of access. This includes:

- The reality of households with multiple individuals who have different access requirements (Levine, 1998)⁹;

“a reinforcing process that makes people poorer and diminishes their chances of ever reversing the spiral of decreasing participation in ‘main stream’ society” (p.197)

⁷A study of immigrant and black American women in California shows, for example, that spatial separation and lack of access to social networks often correlate and together explain the way in which women in American cities are disadvantaged in terms of access to jobs (Parks, 2004).

⁸Most studies have taken place in American cities which are low density with dispersed job opportunities, and are also highly class and race segregated. However, studies in European cities are also showing that the growing dispersal of low skilled jobs in large metropolitan areas is increasing the length of job search and the periods of unemployment, as well as complicating the logistics of daily life (Korsu and Wenglenski, 2010). There have been studies on accessibility in Africa which show a relationship between job uptake and spatial density, although availability of data remains a pervasive problem (see Linard et al, 2012).

⁹Simple locational models based on a household preference determined by a single bread-winner have been challenged by scholars including Levine (1998).

- Households which may have the preference for living distant from job opportunities to take advantage of other urban benefits such as a suburban lifestyle, for example;
- The quite complex relationship between “personal access”, “household access” and “locality access”, with “place accessibility” and “area accessibility” not being the same thing (Preston & Raje, 2007);
- The differential quality of jobs and services which require an element of choice to be added to conceptions of spatial access (Smoyer-Tomic et al, 2004; Tsou et al, 2005)¹⁰;
- With multi-nodal cities, spatial patterns of accessibility are becoming quite complex and simple models of time-distance from the historic urban core often do not apply (Horner, 2004);
- Accessibility is a relative concept, and so access advantage may be reduced despite absolute improvements in location or transport infrastructure (Kwan *et al*, 2003)
- ICT is playing an increasingly important role in mediating the effects of time and space, and so ICT access must be considered together with physical access to jobs and services.

2.3 Achieving Greater Spatial Access

Traditionally, the debate in terms of spatial accessibility, and achieving a better housing-workplace balance, has been around “bringing jobs to people” or “people to jobs”. There has been a gradual recognition that we need to do both, although with an understanding that it is more clearly within the reach of government to bring people into a closer alignment with jobs. (Gobillon *et al*, 2007)

Increasingly also, there is recognition that spatial location is fluid only over the long term because of existing fixed investment in housing, business premises and infrastructure. Critically important, therefore, is investment in infrastructure and systems that would improve mobility (Ureta, 2008).

People to Jobs

International literature has given a cautious yes to the possibility of achieving better spatial balance through spatial restructuring policies that bring residence closer to jobs (e.g. Levine, 1998). Regulatory policies may play a strong role in this regard (e.g. appropriate zoning, plot sizes, housing typologies) as well as locational decisions around new housing development. In the South African context, informal processes also work to bring people closer to jobs (e.g.

¹⁰If an individual or household is spatially confined to a poor quality service this hardly meets the standards of spatial equity, and is a weak form of access.

occupation of backyard shacks) and attention must be given to supporting these processes in ways that produce positive outcomes¹¹.

Jobs to People

Government can incentivize the location of business, and use land management policies to make land for business more easily available within reach of concentrated low income population, but business responds to other imperatives which often take them away from low income area, and so bringing jobs to people is often a very difficult task. One of the biggest current challenges in large metropolitan areas at least is a tendency towards the dispersal of jobs, generally within higher income areas, which requires us to think more carefully about inclusionary housing which would bring lower income people into the fabric of higher income urban areas, and also about urban infill.

Mobility

In recent literature, which draws on the work of Amartya Sen, mobility has been identified as a “human capability” and as a “human freedom” (Ureta, 2008). The lack of mobility – or even forced mobility as a result of long commuting distances - is identified as a form of social exclusion. This literature also indicates that mobility does not exist for its own sake but rather for expanded social and economic access. Ureta (2008, p.285) writes that “to move or not to move is not trivial but rather a powerful indicator of the way societies are ordered and the positions individuals occupy within it” (Ureta, 2008, p.285).

Constraints to mobility including the obvious spatial factors such as distance, cost and lack of infrastructure, but also legal regulations, social position, private surveillance systems, and so forth¹². These must all be given attention although the focus in this report is on the spatial dimensions. Studies over recent years have shown with compelling precision the spatial relationship between transport and accessibility. This has been translated into policy with transit-oriented development (TOD) now a common recommendation (e.g. Murray & Wu, 2005).

¹¹The typical problem with policies to create greater balance is the residential pressures that emergence around job rich areas which drive up property prices and, once again, force the poor into more peripheral localities. Policies are needed to mitigate this. (Levine, 1998)

¹²There is a strong caution in the literature that transport linkages alone are insufficient to address the accessibility gap (Church et al, 2000). The interaction between public transport and social and economic factors needs to be better understood. . Women and older persons may, for example, avoid public transport because of fear of crime, while the physically impaired may only use transport if their needs are properly catered for.

In the sections below we show the extent to which spatial processes and investments in post-Apartheid South Africa have assisted in achieving greater access through “jobs to people”, “people to jobs” and “expanded mobility”.

3. Spatial Access and Post-Apartheid Trends in South Africa’s Space Economy¹³

South Africa entered the democratic era with a population of around 40 million people of whom 53% lived in urban areas, and 43% in the previous homeland areas (or *Bantustans*). South Africa had a modern economy with a hierarchy of metropolitan cities, secondary cities, large towns and smaller service centres which were connected by a network of road and rail, but these spatial arrangements were layered together with spatial patterns that reinforced extreme social inequalities and highly uneven access to the economy. Since the ending of Apartheid there have been significant shifts in South Africa’s space economy, with corresponding flows of household and individual migration.

Census 2011 and recent economic data provides us with an improved understanding of the changing space economy and settlement pattern. The data shows significant changes both at a provincial and intra-provincial scale that urban policy must take account of.

At the provincial scale, economy and population has further concentrated within the most urbanized and economically developed provinces. Figure 1 below indicates the percentage growth in employment by Province between 1996 and 2011 while Figure 2 reveals the absolute increase in the number of jobs by Province, and Figures reveals provincial differentials in average household income.

¹³ This Section is draw largely from work undertaken by one of the report authors as part of the *Presidency’s 20 Year Review*(Harrison, 2013) and also part of the 2011 Diagnostic for the National Development Plan.

Figure 1: Percentage Change in the Number of Jobs per Province between 1996 and 2011

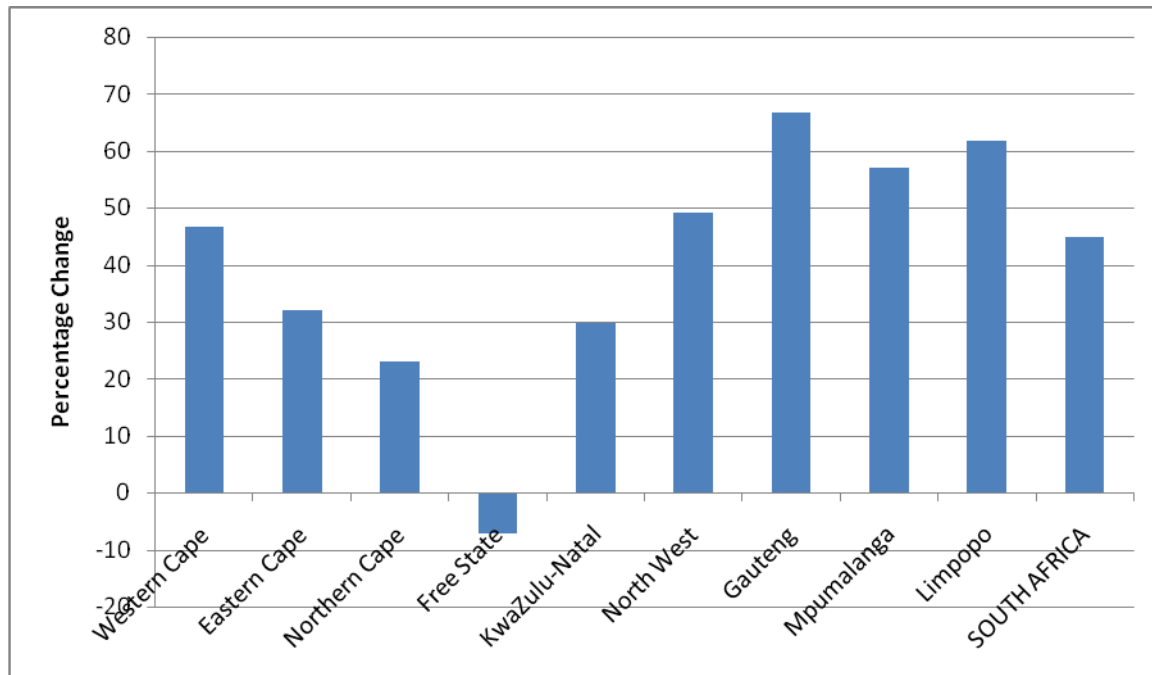


Figure 2: Absolute Increase in the Number of Jobs by Province, 1996-2011

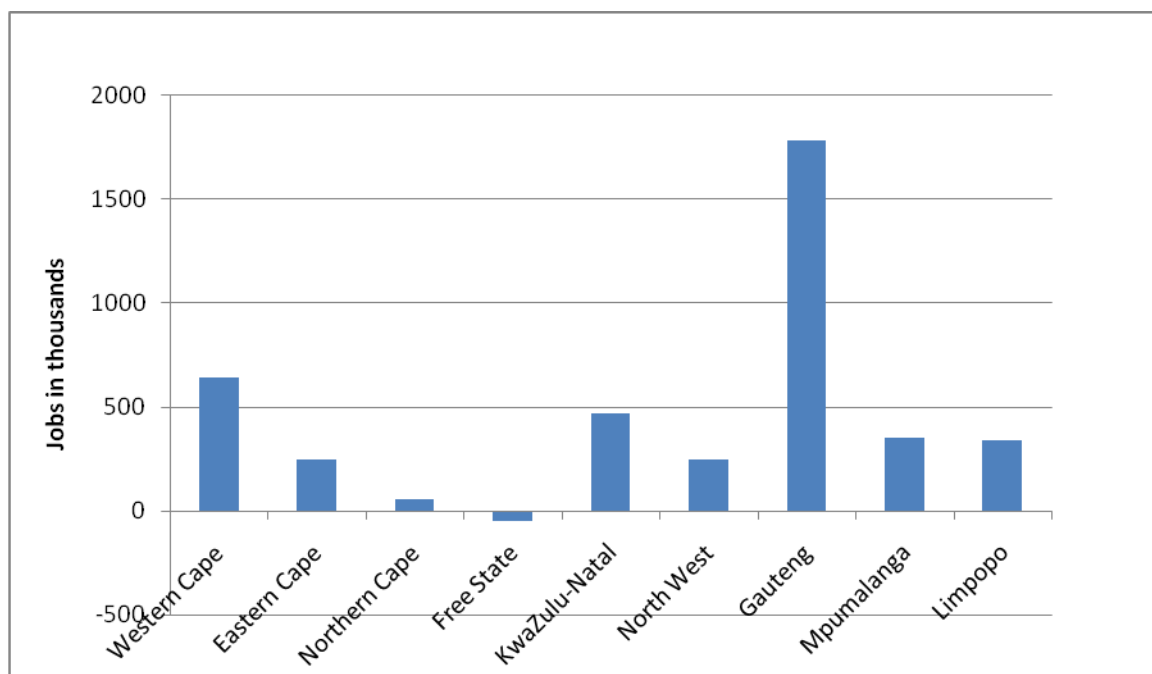
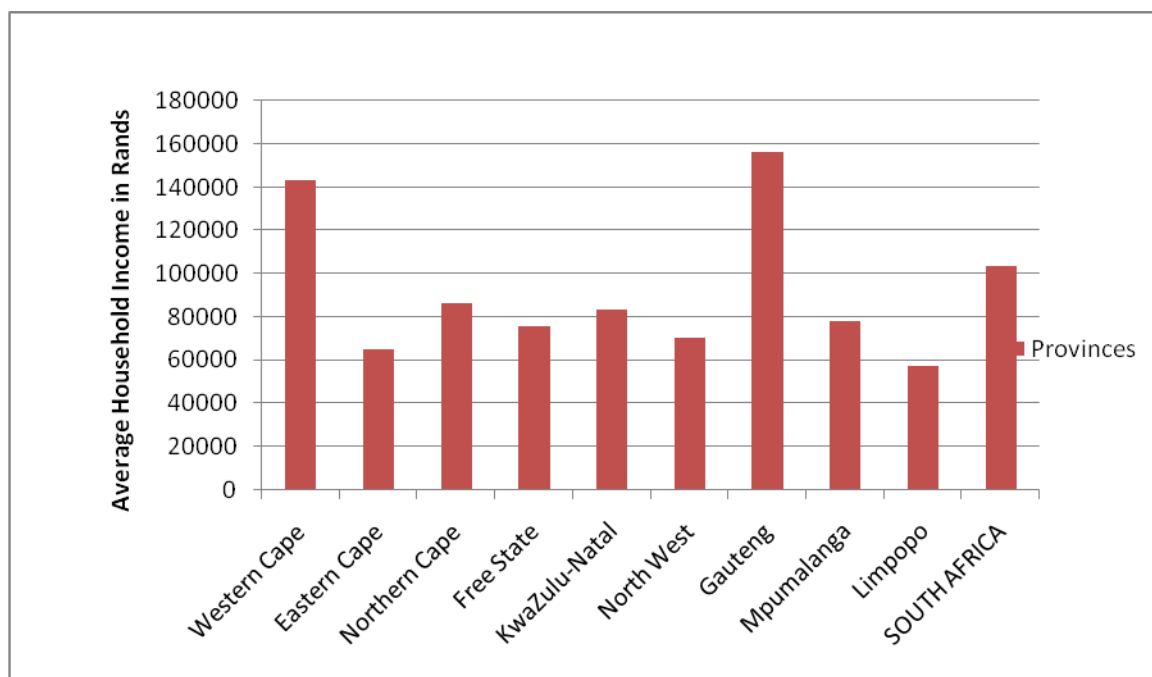


Figure 3: Differentials in Household Income by Province – Census 2011



Source: Census 2011, Stats SA

The figures reveal high differentials in relative and absolute terms. In relative terms, Gauteng, the core of South Africa's national economy is doing best in terms of job creation, with other provinces in the northern half of South Africa (Limpopo, Mpumalanga, North West) also performing above average. The Western Cape, the next largest concentration of economic activity, is performing at national average, with less than average growth in the coastal provinces of KwaZulu-Natal and the Eastern Cape, and negative growth in the Free State. In absolute terms Gauteng is even more dominant, accounting for 44% of all new jobs in South Africa, followed at a distance by the Western Cape and KwaZulu-Natal. Gauteng is also the province with the highest average household income, followed closely by the Western Cape.

The differentials in access to employment, together with the inequality in household income, are shaping migration flows. Figure 4 reveals the relative shift in the distribution of population between provinces while Figure 5 highlights differentials in migration flows.

Figure 4: Shifts in the Percentage Distribution of Population Nationally between Provinces, 1996-2011

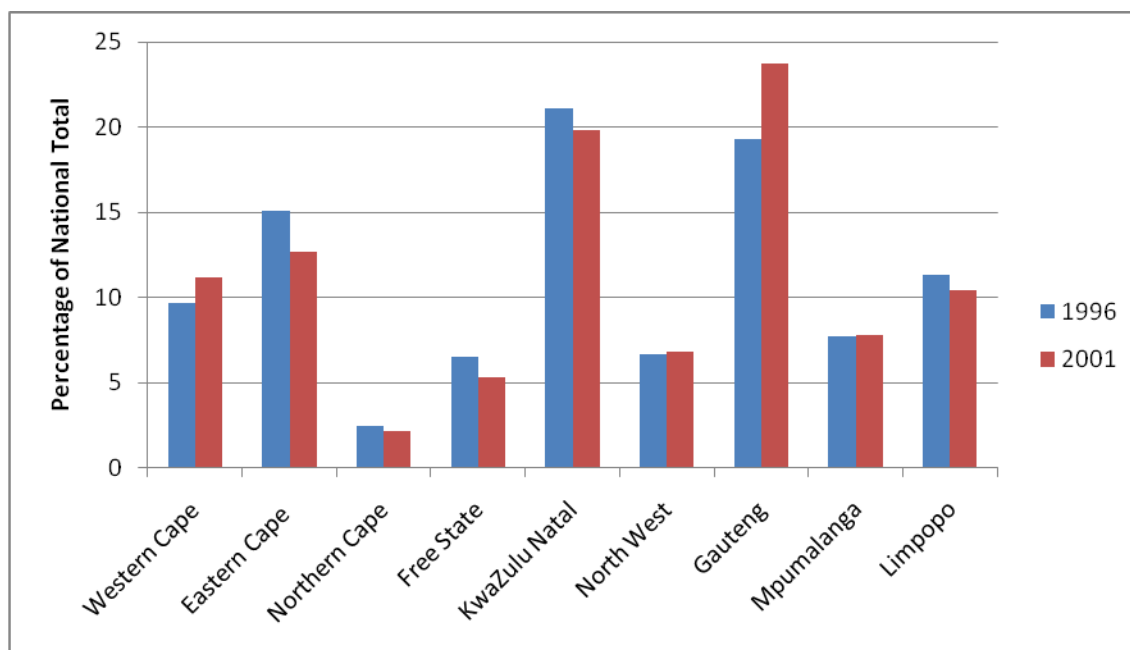
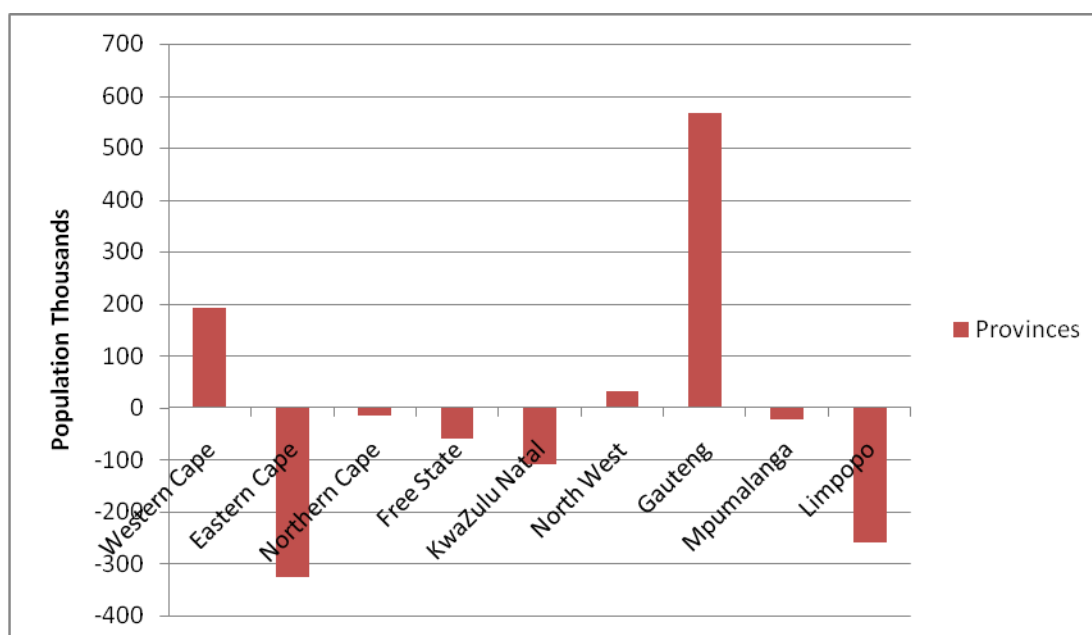


Figure 5: Differentials in Net Migration by Province – 2011 Census



In terms of migration and growing population share, it is Gauteng which is, by far, making the most rapid advance. Again, the Western Cape follows at a distance.

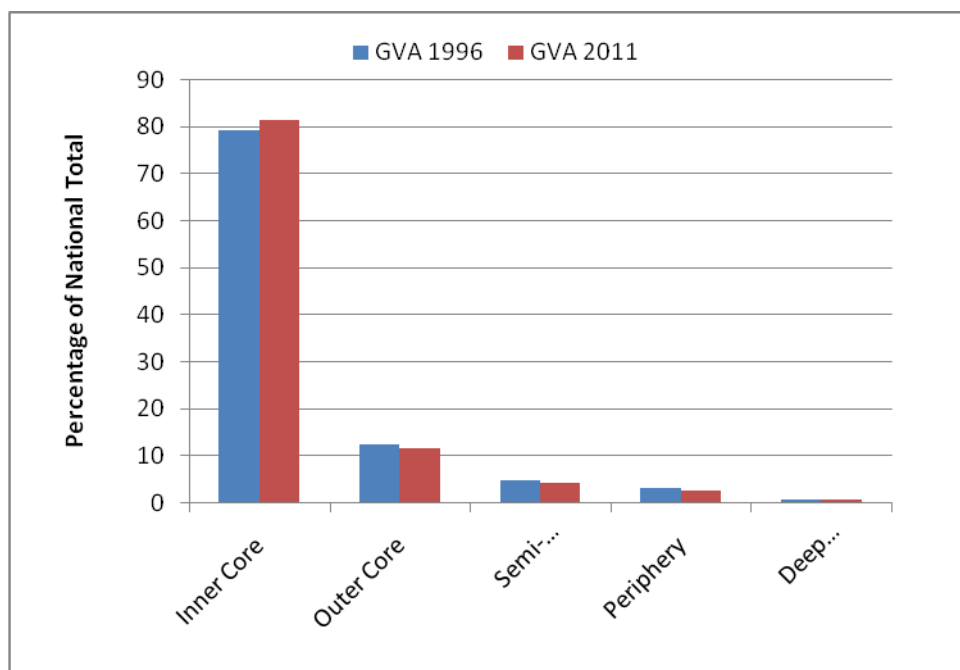
The picture is stark. Individuals and households in South Africa are “voting with their feet” by moving into provinces where jobs are being created, and where households incomes are higher.

An analysis by province is however relatively crude, as there is enormous intra-provincial variation. In work on the 20 Year Review for the Presidency, and for the National Planning Commission, one of the authors of this report provided an analysis of space on the basis of the following area categories:

- An **Inner Core** consisting of the large metropolitan agglomerations and secondary cities(i.e. The Gauteng City-Region, Western Cape Urban Agglomeration, KwaZulu-Natal Coastal Urban Agglomeration, Nelson Mandela Bay, Mangaung, Buffalo City, The Msunduzi, Polokwane, Free State Goldfields, Mbombela, Polowane, Sol Plaatje, Cape South Coast Tourism Belt)
- An **Outer Core** consisting of large towns with major service functions, medium-sized mining centres, peri-urban agglomerations around the inner core, and large agglomerations around previous homeland capitals(e.g. Newcastle, Kroonstad, Grahamstown, Phalaborwa, Mthatha, Thoyohandou)
- A **Semi-Periphery** consisting of medium-sized towns with an established infrastructure, secondary mining outliers and the more densely settled parts of the previous *Bantustans* with local economies producing more than R1 billion per year (e.g. Vryheid, Kuruman, Springbok)
- A **Periphery** consisting of small service centres with established infrastructure, small mining economies and previous *Bantustan* economies with output of more than R0.4 –R1 billion (e.g. Calvinia, Dannhauser)
- A **Deep periphery** comprising very marginal local economies with outputs of less than R0.4 billion per year(e.g. Jansenville, Tarkastad, Boshof, Harding, Poffader, Warrenton).

The details of the analysis are in the report for the 20 Year Review but of importance here the broad differentials between the spatial category in terms of economic growth and population change which are indicated below in Figures 6-9.

Figure 6: Change in Relative Contribution to Gross Value Added (GVA) between 1996 and 2011 by Category of Municipality



Source: Data derived from IHS Global Insight

Figure 7: Change in Absolute Population between 1996 and 2011 by Category of Municipality

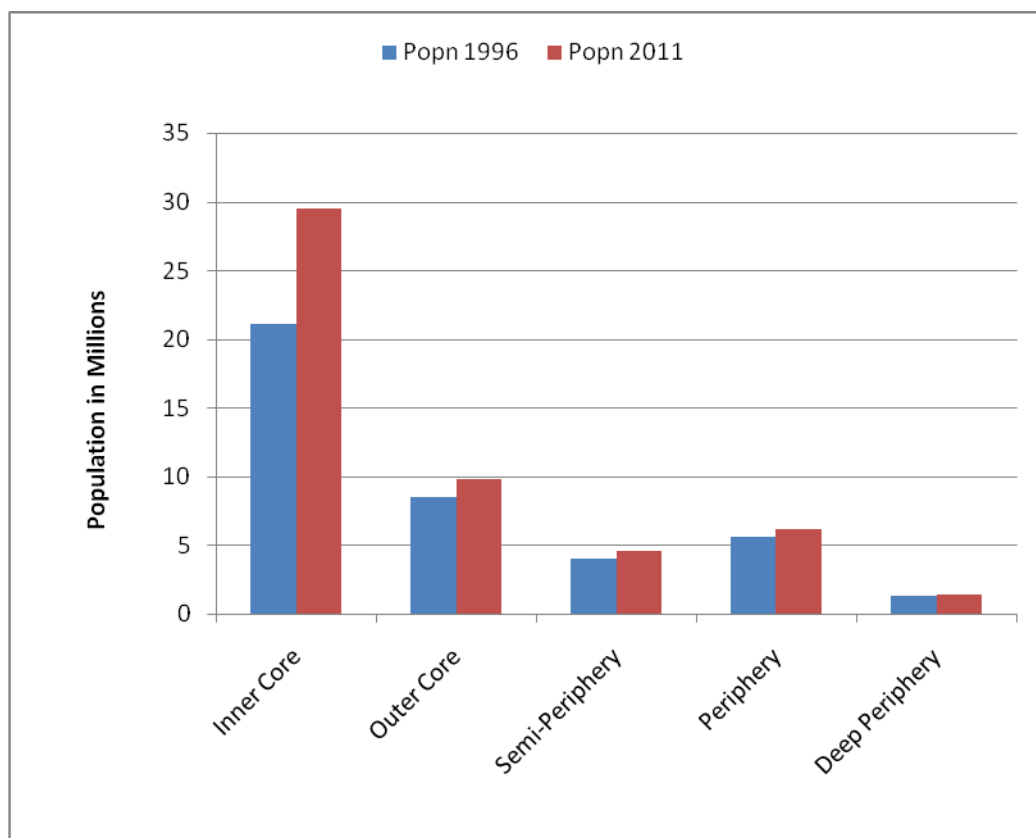


Figure 8: Change in Relative Population between 1996 and 2011 by Category of Municipality

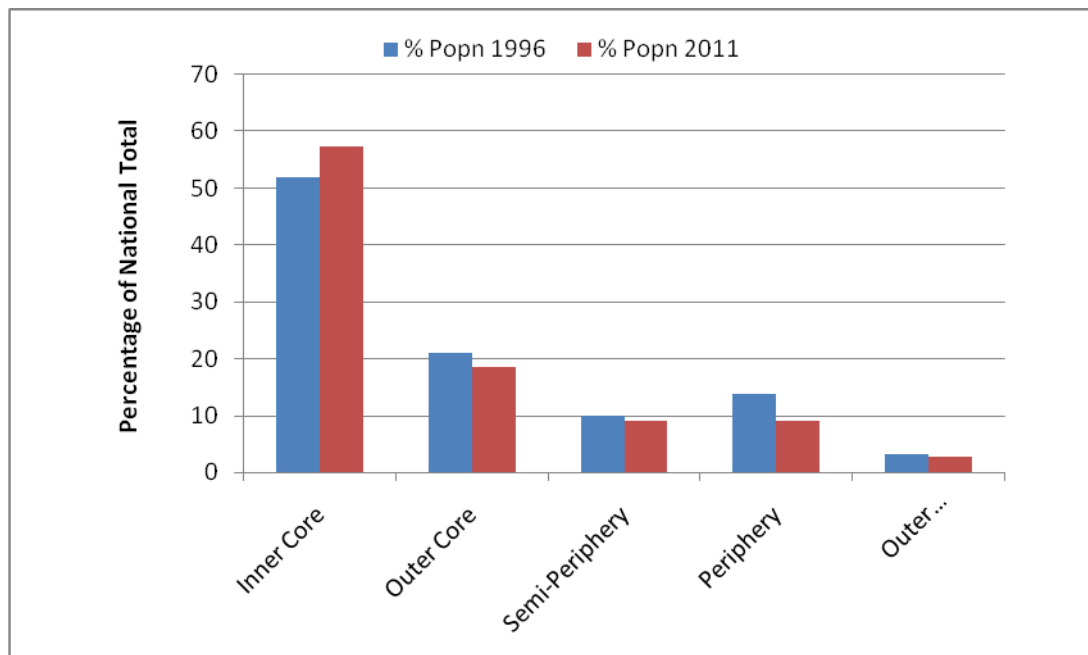
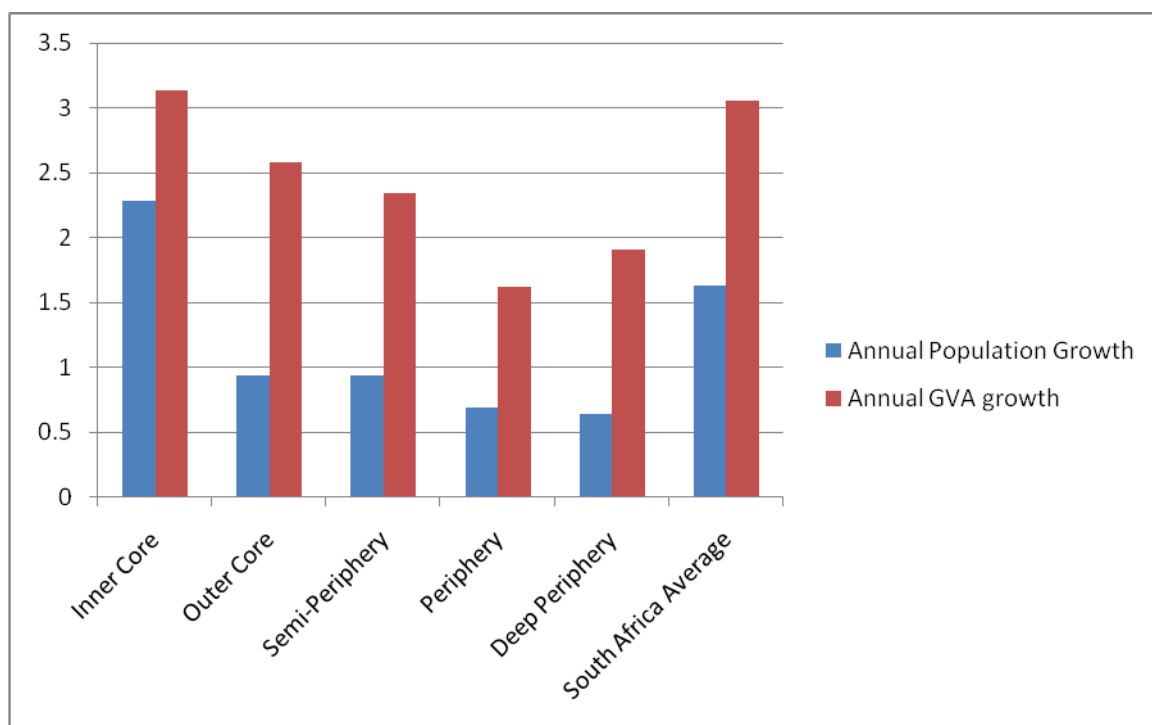


Figure 9: Comparison of Annualised Population Growth and GVA Change per Category of Area, 1996-2011



The story economically is of a huge initial concentration, with 79.4% of GVA from the inner core in 1996, and of continuing concentration, with 81.4% of GVA in 2011. All other categories, including the outer core, experienced relative decline (Figure 6). The population is responding to this differential in economic change with growing absolute and relative concentration in the Inner Core. In terms of relative concentration, only the Inner Core is gaining in population share (Figure 7). Significantly, the change in population share is greater than the change in the share of the economy, which suggests that that changes may be responding to the constraints of urbanization under Apartheid as well as to post-Apartheid economic change. There was a pent-up demand to migrate under Apartheid.

Figure 9 shows that the more peripheral the area, the lower the GVA growth. It also shows that it is only in the Inner Core that there are significant levels of population growth. South Africa's average annual population growth of 1.6% between 1996 and 2011 is comparatively low, and the growth that has happened is overwhelmingly concentrated in the Inner Core.

There is considerable diversity within each spatial category. In the Inner Core, for example, the Free State Goldfields are experiencing absolute decline with the most rapid growth in the heart of the Gauteng City-Region and along the tourism belt in the Western Cape. While there are local factors to consider, the broad trend is for further population concentration in areas of existing economic agglomeration.

At the national- or macro-scale, the story is one of growing alignment between economic opportunity and population concentration, and thus of improved access¹⁴. To understand what is happening *within* localities we require far more detailed analysis, and it is to this we now turn.

4. Analysing Spatial Change within South Africa's Towns and Cities

4.1 The spatial legacy of South African cities and towns

The spatial legacy of apartheid in South African cities and towns is well known. This section provides a brief summary, drawing out its implications for accessibility.

Under apartheid, a raft of policies linked to influx control served to limit and constrain permanent migration and urbanization of black African people to the major cities, and to confine them to the 'homelands'. Resettlement also displaced black African people from 'white' commercial farming

¹⁴ The analysis above has focused on the relationship between economy (GVA and jobs) on the one hand and population concentration on the other. There is, however, a strong relationship between levels of service provision and the strength of the local economy and so the conclusions in relation to access hold for both jobs and services.

areas into towns within homeland areas. In cities and towns on the borders of homelands, much of the black African population was relocated to these areas or new growth was accommodated there. In several cases, especially in smaller towns such as Richards Bay and Nelspruit, there were significant distances between the 'white town' and its economic centre and residential areas, often with large rural areas between the two. Outside of these areas, the Group Areas Act was used to relocate black people to new sites on the urban periphery, also resulting in long distances to work and poor access to a range of urban amenities and economic activities. Hence cities and towns developed in sprawling, inefficient patterns, compounded also by the relatively low density of dominant white suburbia. The social and economic impact of these patterns has been well-documented.

In the late apartheid era, from the 1970s and 1980s, some of these patterns began to change. Retail and later office decentralization reduced the importance of old central business districts (CBDs). As rates of car ownership rose among the middle classes, and new forms of retail environments (shopping centres) emerged, these activities moved to the higher income suburbs. Suburban development, and later new 'townhouse' development was encouraged by the building of improved road and highway systems in the 1960s and 1970s. Townhouse development, particularly from the 1980s was in part a response to rising concerns of safety and security, but also reflected the demand for cheaper accommodation and for less encumbered lifestyles.

Planning systems reflected modernist planning and apartheid principles of the time, including inter alia, land use separation; density controls; control of informality etc. However both apartheid and planning controls began to break down in the late apartheid era. Influx control and the urban segregation began to disappear de facto even before legislation was dropped, and levels of informality and informal trading grew, particularly in city centres. As business and white residents moved out of CBDs and inner city areas, these places reoriented towards the needs of lower income black residents and small business, including informal trade.

By 1994, there were a series of spatial legacies shaping the development of cities, and challenges to be addressed:

- A sprawling urban structure, with impacts on the carbon footprint;
- A well developed system of highways, enabling and encouraging car oriented development in high income areas;
- Spatial marginalization of black people (distance to work and urban amenities), and its impacts in terms of access, particularly for the urban poor and low-income women;

- Dependence on transport subsidies;
- Relatively segregated areas in terms of race and income, with implications for access to schools and other facilities;
- Poor infrastructure for public transport;
- A planning system still focused on traditional planning for a minority, failing to accommodate informality and needs of the urban poor to access land for housing and economic activity.
- Inner city decline in some cities.

4.2 Normative Policies and Visions Post-Apartheid

By 1994, a well-developed critique of the apartheid city and associated planning practices had emerged. An alternative normative vision of ‘compact-integrated’ cities with much higher density development, and structured around a series of nodes and public transport focused corridors, became core to new urban and planning policies. Transit oriented development around major new transit nodes would serve to intensify development around these nodes, and improve the viability of public transport. In contrast to land use separation, mixed use development would be facilitated. Densification would be enabled by policies of ‘infill’ and redevelopment of well-located land, accommodating mixed residential and mixed income developments. Townships would be redeveloped to improve services and urban amenities there, but also to promote economic development. Former white areas and city centres would become more mixed in function, income and race, to make these areas more accessible to those who had been excluded, although racial integration did not tend to be considered directly. Spatial planning would move away from its traditional focus on ‘control’ to a more facilitative function, attempting to redress the spatial legacy of the past.

These ideas were embodied in a series of policies post-apartheid, including, inter alia:

- The 1994 White Paper on Housing and the 1995 Development Facilitation Act, which produced a set of normative principles for planning, which were very different from the traditional focus of provincial planning ordinances.
- The 1995 Urban Development Strategy and later Urban Development Framework
- The Department of Transport’s 1997 Moving South Africa strategy
- The 1998 White Paper on Local Government and associated policies

- The 1999 Green Paper on Planning and Development, and later (2000) White Paper on Spatial Planning and Land Use Management.

These ideas also formed the central focus for the spatial development frameworks (SDFs) produced first by the negotiating forums in large cities in the early 1990s, and later by the transitional local government structures of the mid-90s, and by consolidated structures of the post-2000 era. Notions of compaction-integration, densification, infill, corridors, nodes, urban edges etc. have become quite ubiquitous in spatial frameworks. Ideas of township and inner city revitalization are frequently the focus on government programmes and special projects focused on redeveloping these areas. More recent ideas include forms of Transit Oriented Development centred on new public transport systems such as the Gautrain and the introduction of Bus Rapid Transit Systems. More recently, notions of spatial resilience are emerging in policy documents.

On the face of it, there is a lot of support for the new ideas. Studies by the FFC (2011) for instance, attempted to model two scenarios – urban sprawl and a more compact city, examining fiscal implications over a period of 10 years. The study modeled the costs of new infrastructure and redevelopment of the existing infrastructure to support the two scenarios and concluded that the sprawl scenario would cost 7% more on operating budgets than more than the compaction scenario, an amount of R6.8 billion per annum after 10 years. All households are better off in the compaction model. Low-income households however spend 14% in the urban sprawl scenario, and 10% less in the compaction scenario, mainly due to the impact of transport costs. Municipal investment is equivalent in each scenario, but investment by the State is less under the compaction scenario, mainly due to reduced investment in connector infrastructure for low-income households. The report argues that if the findings are extrapolated to the 6 major metropolitan cities, the difference between the two scenarios is around 1.4% of GDP by year 10, and this cost difference would increase with time. The environmental impacts are far worse on the sprawl model, mainly due to increased carbon emissions arising from increased travel distance and private car use. It concludes that significant capital investment in public transport and well-located housing for the urban poor is needed, combined with incentives for private developers to shift to forms of development that are more compact.

The FFC study is important, but still needs to be considered with a degree of circumspection. For instance, Biermann's (2000) study of Tshwane and other studies on the cost implications of densification shows that there is no simple linear relationship between infrastructure costs and densification. Unit costs vary between types of infrastructure. Topography and geotechnical conditions make a difference, as does available capacity and service thresholds. From a social

perspective, the importance of inner city location for some groups of the urban poor is well established, but the literature also shows that for some, location on the periphery has benefits in terms of larger sites, access to opportunities for agriculture (see Todes, 2003 for a summary).

The new policy ideas tend to be reflected in municipal SDFs in some form, but implementation has not necessarily followed plans, as noted in a later section. The following sections consider the actual spatial trends in cities and towns, and their drivers.

4.3 New Urban Geographies in the Post-Apartheid Era

In the post-apartheid era, new urban geographies have emerged in cities and towns. In some cases, spatial trends that have emerged build on and extend patterns of the past, or the new forms of change that emerged in the late apartheid era. In other cases, new dimensions are evident. Patterns however vary across cities, and between cities and towns of different sizes and configurations. In order to capture a sense of this variation, four main trends were examined, using both existing literature and an analysis of change between the 1996 and 2011 census for 9 towns and cities. Cities and towns were chosen to reflect variation by size and type, growth rates and location. The following places were chosen for examination:

- Johannesburg, Gauteng: largest metropolitan city, high population and economic growth rates.
- eThekweni, KwaZulu-Natal: metropolitan city, slower population and economic growth rates than Johannesburg. Includes parts of former homeland (mix of township, informal, peri-urban and rural).
- Manguang, Free State: small metropolitan city, relatively slow population and economic growth rates. Includes distant former resettlement area (Botshabelo), and homeland settlements, small towns.
- Polokwane, Limpopo: secondary city, rapidly growing. Includes parts of former homeland, where most of the African population was accommodated under apartheid. On growth corridor.
- Mbombela, Mpumalanga: secondary city, growing relatively rapidly, but slower than Polokwane. Includes parts of former homeland, including a belt of dense peri-urban settlement distant from towns.
- King Sabata Dalindyebo (Mthatha), Eastern Cape: secondary city, slow growth, in former homeland. Includes relatively dense peri-urban and rural settlements sprawling from the town and beyond, as well as dispersed settlement.
- Sol Plaatje (Kimberley), Northern Cape: small secondary city, slow growth

- Knysna, Western Cape: small town, rapidly growing
- Thubatse, Limpopo: very small mining and farming towns, including commercial farming areas and former homeland dense and dispersed settlements, especially along the mining belt. Experiencing rapid economic growth.

The location of each municipality is indicated in Figure 10

Figure 10: Location of Municipalities Selected for Spatial Analysis

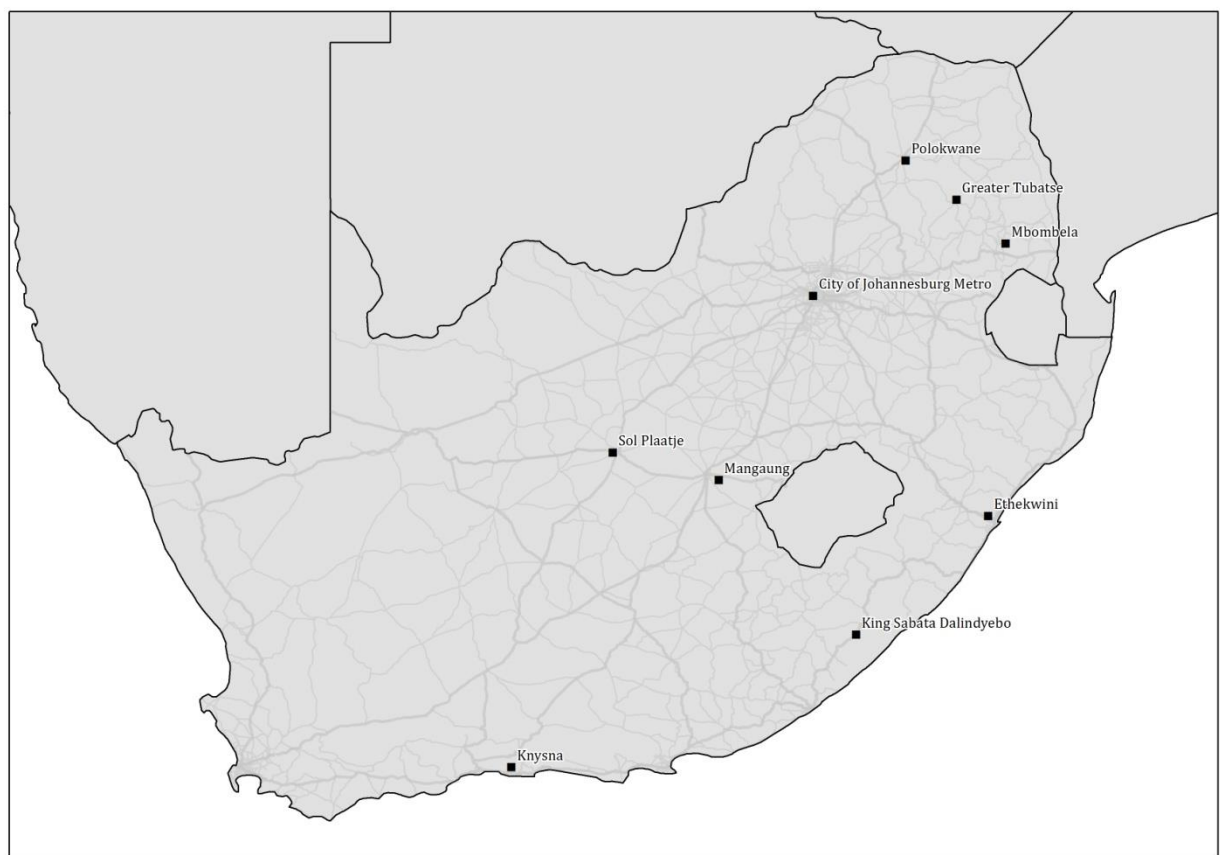


Table 1 shows population and economic growth in these cities and towns between 1996 and 2011 according to the census and Global Insight/Quantec data, while Figures 11 and 12 show trends graphically. These variations in population and economic growth – as well as the varying size of cities and towns - are associated with quite significant differences in patterns of spatial change within and around these places, as the following sections will demonstrate.

Table 1: Population and Economic Growth Rates 1996-2011

	Population		Pop Growth Rate	GVA Growth Rate
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	1996	2011	1996-2011	1996-2011
South Africa	39182505	50423687	1.6	3.2
City of Johannesburg	2638470	4434830	3.5	4.1
eThekweni Metropolitan Municipality (KZN)	2748300	3442360	1.5	3.7
Mangaung Metropolitan Municipality (FS)	603528	747431	1.4	2.9
Polokwane Local Municipality (L)	424835	628999	2.6	3.7
Mbombela Local Municipality (M)	426090	588794	2.1	2.9
King Sabata Dalindyebo Local Municipality (EC)	396312	451710	0.8	2.2
Sol Plaatje Local Municipality (NC)	205103	248041	1.2	3.1
Knysna Local Municipality	43599	68659	3.1	5.8
Greater Tubatse Local Municipality (Sekhukhuneland) (L)	229583	335676	2.5	5.0

Source: Based on census and Global Insight data. Derived from data prepared for Harrison
(2013)

Figure 11: Population Growth 1996-2011

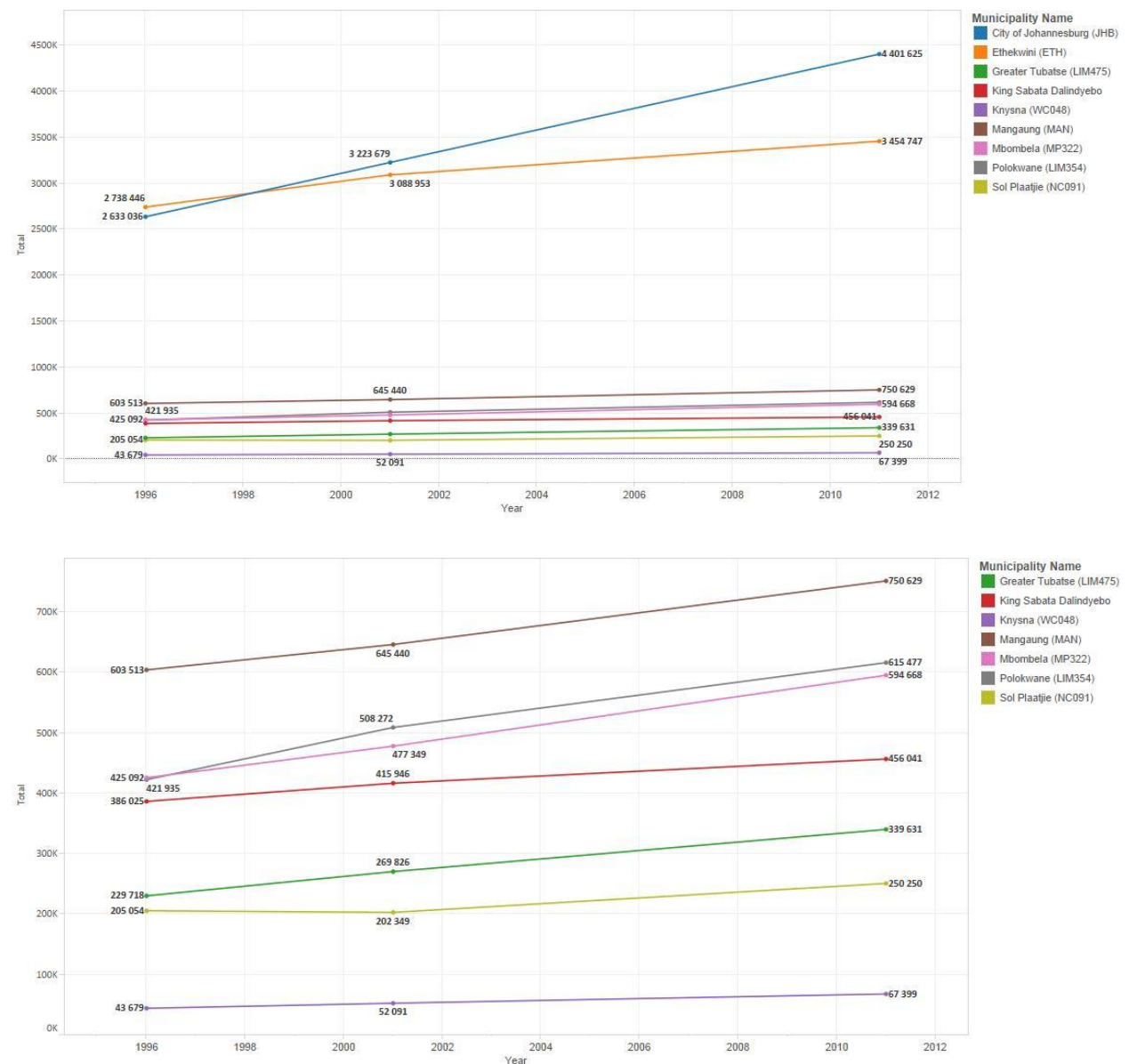
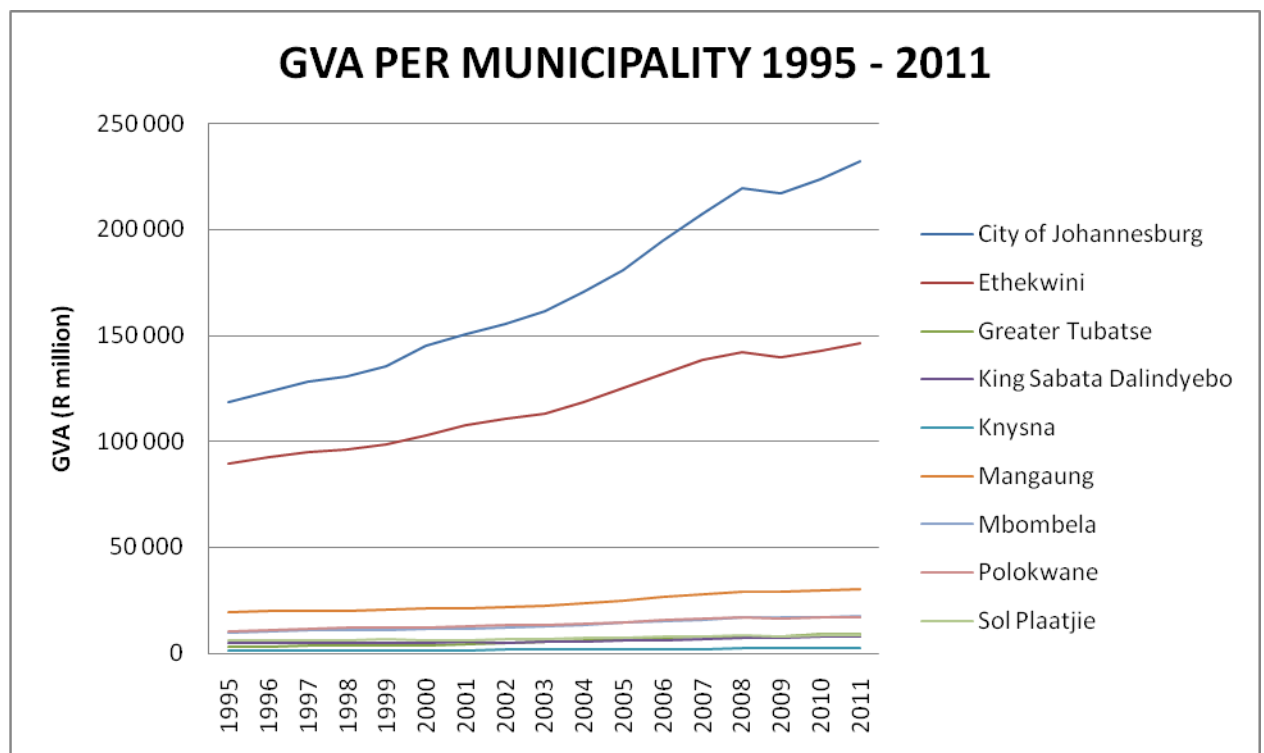


Figure 12. GVA per municipality 1995-2011



By way of background, it is useful to note the very different residential structure of the various municipalities examined, and how they have changed between 1996 and 2011. Appendix 1 contains tables and figures depicting the changing residential structure for each municipality. It is worth noting, that except for in King SabataDalindyebo municipality (where only 29% live in detached housing in 2011¹⁵), the majority of households in all municipalities live in detached formal housing, which, in 2011, accounted for between 53% and 80% of residences. It has also grown most rapidly between 1996-2011, presumably largely as a consequence of the RDP housing programme. Flats as a proportion of dwelling units was only significant in Johannesburg and eThekweni (10%), but in both cases had dropped as a proportion of the total, although the number of flats grew in absolute terms. The number of households living in some form of attached housing or complex (semi-detached, townhouses, clusters) also grew in both absolute and proportional terms in most cases¹⁶. However, although this form of housing has been much discussed in the literature, it still houses a small proportion of the households (less than 5%) in most places. As might be expected, the largest

¹⁵ There are some differences in definitions between census data for 1996 and 2011, and also some anomalies. In King SabataDalindyebo municipality, some 26% of households lived in traditional housing in 2011, a sharp drop from 49% in 1996. However the category of 'other', which in other municipalities is very small (less than 5%), grew from 2% to 28% over the period.

¹⁶ eThekweni figures however show a drop from 11% to 4%, and a large absolute decline in households living in these units. This seems unlikely, and may reflect problems in classification. The proportion and number of households living in these circumstances also dropped in Sol Plaatje

percentage of households living in this kind of housing is in Johannesburg, where it accounted for close to 10% of dwellings, significantly up from 6,5% in 1996, a threefold absolute increase to 143,453 from 1996. The shifting proportions of informal settlement and forms of backyard accommodation will be discussed in section 3.4.

The following sections outline the main spatial trends according to the literature, and as per data available in these towns, examining:

- Spatial patterning of population growth and decline
- Density change
- Racial change across space and racial integration
- Changing spatial economic patterns

4.3.1 Spatial Patterns of Growth and Decline

Appendix 2 contains maps representing growth and decline by 'sub-place' in the 9 municipalities between 1996 and 2011. A number of common trends emerge from these maps, but there are also particular local dynamics and patterns, some of which will be discussed here.

The most notable pattern in all municipalities is the sharp decline in much of the rural population, both in commercial farming areas and to a lesser extent (i.e. more unevenly) in traditional authority areas. The former has been the subject of a major study by Wegerif et al (2005), which claimed that over a million people had been displaced from commercial farms since 1994, as a consequence of increasing concentration and mechanization of farming, changes in land use to activities reducing levels of farm worker employment (such as game farming, golf estates and tourism), and fear of land claims and crime. The decline in areas falling under traditional authorities seems to be selective, with some areas of growth, and some of decline. Areas of growth within and around these spaces seem to be along main roads and routes, in areas closer to places of employment (for instance, closer to the mines in Tubatse, along main routes in King Dalindyebo Sabata). This seems to corroborate Harrison's (2013) argument that people are moving closer to areas of employment and economic activity, and away from areas of economic marginality. Overall, the pattern appears to be one of increasing concentration of population nationally, and out-migration from rural areas, with implications for patterns within municipalities.

Secondly, the impact of new growth through a number of sources is clearly evident. The most obvious is the development of new RDP housing areas, generally in and around townships. As noted above, households living in detached housing (presumably largely RDP housing) have grown most

rapidly in all municipalities. Much of this growth has been on the periphery of existing townships (for instance, see the large areas of most rapid growth on the edge of Soweto), but there are cases where more well-located housing has been developed, for example in Cato Manor in Durban. The growth of new townhouse complexes and higher income developments in other parts of the urban edge is also evident, for instance in the north-west in Johannesburg, and parts of Hillcrest and Kloof in eThekweni. For both these reasons, it appears that forms of residential decentralisation continue, and have been extended in the post-apartheid era. This supports common claims in the literature, and arguments that while spatial planning has wanted to encourage compaction, trends have been in other directions. Peripheral growth has been driven by lower land costs and the availability of large unencumbered parcels of land on the periphery, particularly given that most new middle and upper income development is taking the form of gated complexes.

Yet patterns are more complex. Analysis of the maps reveals intricate patterns of growth and decline within municipalities. In several cases, parts of former townships have experienced growth, but other areas within them have lost population. Alexandra and Soweto represent a patchwork quilt of areas of growth and decline. There is also both growth and decline in old suburban areas. As might be expected the CBD and inner city areas of the largest cities have experienced growth (see also section 4), but some of the smaller towns have experienced decline in the centre, along with growth on the edges. It is useful to explore patterns a little more fully in some of the municipalities.

The Johannesburg map shows growth across much of the city – on the edges in the north and west, around much of the N1, west of Soweto, and south in Orange Farm. Of course, Johannesburg is part of a broader city-region, and new growth occurring to the north and west also represent spaces of access to growing economic opportunities in these areas, and further north, as well as Johannesburg itself. While informal Diepsloot in the north was originally seen as a spatially marginal location, studies by Biermann (2004) showed that it was in fact quite well-located in relation to new areas of growth. Higher income areas are able to access the well-developed system of roads, enabling access across the city region. There is also significant growth in the inner city. Townships however represent something of a patchwork quilt as do suburbs – some are declining, others are growing. In the northern suburban areas, the shift to business in some areas might have resulted in decline, as would declining household size, but in most sub-places, there is growth. In recent years, environmental impact and planning policies have discouraged growth on the edge, and the availability of land and larger sites in existing suburban areas has made redevelopment to higher densities possible.

In eThekweni, the outer rural traditional and commercial farming areas have declined, but there are places more concentrated growth on the periphery close to these areas. Large parts of the former townships have grown, but there are also areas of decline within them. Part of the inner city has grown, but this is by no means uniform. The establishment of Cato Manor near the central city is clearly evident. Interestingly, while the 'T' formed by the highways has concentrated employment (see section 3.4), the residential populations in a number of the areas along it has grown. The new growth in the north around Umhlanga shows up as an increase, as does growth through Durban North, but growth further north hardly registers.

In Mangaung, rural decline is clearly evident, and most of the small scattered settlements to the east are declining. ThabaNchu experiences both growth and decline. Much of the Botshabelo former resettlement area is declining, but there are also areas of growth, sometimes quite substantial. Areas of growth within the municipality include new areas of development to the east of Bloemfontein, close to former townships and coloured areas. It includes Freedom Square, an informal settlement which emerged through land invasion in a coloured area in the early 1990s, which was later upgraded. Marais and Ntema (2013) argue that Freedom Square became an area where households could relocate from Botshabelo, enabling much closer access to work, and substantially reduced transport costs. It thus represents an important area of urban infill. Some higher income areas on the west have also grown, but there are also substantial areas where population decline is evident around the city.

Rural decline is apparent in Mbombela, but settlements falling under the former homeland in a belt along the road have experienced significant growth, as have most (but not all) parts of Nelspruit and White River. Mbombela has retained its fragmented form, with the exception of a restitution project built between the main settlements post-apartheid. In King Sabata Dalindyebo, growth is mainly concentrated in Mthatha (and mostly strongly on its edges), but with limited growth in selected settlements in the rest of the municipality. Areas of decline are evident within the town and the rest of the municipality. In Sol Plaatje, there are few areas of growth – mainly developments within and beyond townships, and in wealthier areas in the west. Peripheral growth seems to predominate, with some level of decline in parts of the central areas. In Tubatse, growth appears to be concentrated along the mining belt and main road, in Praktiseertownship and close to Burgersdorp, as well as in new gated high income developments on the southern edge of Burgersfort. Thus patterns of development vary considerably.

4.3.2 Density Changes

It is commonly argued that South African cities and towns are low density, and policies have tended to argue for densification in selected areas. By international standards, gross densities are indeed low, as Bertaud (2008) and Angel et al (2011) show, although as Harrison (2013) notes, they are similar to some European and much higher than those in North American cities. As demonstrated in the 2011 SA Cities Network's State of Cities Report (see also Turok, 2011), there are considerable variations in density levels across cities and towns, for instance, there are often high densities in former townships, many informal areas and some inner city areas, and much lower densities in suburban areas. Moreover the configuration of density varies between municipalities. Interestingly, while trends internationally have been towards the lateral spread of settlements and declining densities, the density of the built up areas in Johannesburg and Tshwane in fact rose between 1990 and 2000 (Angel et al, 2011). Density increases are occurring through increasing occupancy in inner city and other areas, through the development of backyard shacks, the growth of high density informal settlements, the redevelopment of land to higher density in suburban areas, and the growth of new formal developments at higher densities than the older patterns of suburban development. While RDP settlements are often referred to as forms of sprawl, densities there are much higher than in the suburbs.

How then are density changes reflected in the 9 municipalities? The following analysis examines density change as per the population census. It thus reflects gross density per sub-place in the census. It does not reflect the built up area. Harrison's (2013) analysis of Ekurhuleni and Maina's analysis of the Johannesburg based on GTI's data on residential building between 2001 and 2009, and GTI's growth indicator, however does confirm both rising gross density, and increasing density of the built up area of these municipalities. For instance, the built density of Ekurhuleni increased from 5476.2/km² in 2001 to 6270.0/km² in 2009 (Harrison, 2013), while it rose from 5,575.3/km² in 2001 to 5,956.6/km² in 2009 in Johannesburg (Maina, 2013). As Maina (2013) shows, there are considerable variations across the city. While much of Johannesburg has experienced population growth and densification, some areas have declined and/or dedensified.

Census data on density change from 1996 to 2011 has been presented according to the same scale for the various cities and towns and is contained in Appendix 3. Data in Appendix 3 shows that density increases have been most evident in Johannesburg compared to the other municipalities. Densities have increased in most areas of the city, but are most strongly reflected in the new areas of growth on the edge (noted in the previous section) and in the inner city. In Alexandra there is a fine-grained pattern of increasing and declining density. Parts of Soweto and Diepsloot are reflected as areas of strongly increasing density, but both Soweto and the northern suburbs also include areas

of declining density. In much of the city, density increase is moderate, between 0 and 3659.68/km². In eThekweni, there are large areas of moderate increasing density, and very few pockets of much higher density increase, which probably reflect new developments, such as Cato Manor and Quarry Heights near Newlands East.

Moderate density increases occurred in a limited number of sub-places in Bloemfontein, Botshabelo and ThabaNchu. More substantial increases are likely to have reflected the impact of new growth noted in the previous section. Moderate density increases occurred in areas of growth in Mbombela, Tubatse and King Sabata, with a pocket of more substantial growth within the central Mthatha area of the latter. Most areas of growth in Knysna and Kimberley experience moderate density increases, but a few areas in both places increased their density more substantially. These areas correspond to new areas of growth noted in the previous section.

While density increases have been occurring in cities and towns, and densification forms an important part of urban spatial policy, Genesis (2008), analyzing the formal land market for Urban Landmark, reports that developers complain that many municipalities have no real operative densification policy, and that they are regularly ordered to reduce planned densities. Of course, a policy of densification does not mean that any form of densification is positive (and in some municipalities, the infrastructure to support densification is not available), but it does suggest that the formal market has an appetite for higher densities than is sometimes assumed.

4.3.3 Racial Change and Racial Integration

Racially divided cities and towns were some of the strongest legacies of apartheid, but this began to break down even from the 1980s. Studies of urban segregation in the 1990s and 2000s (KrackerSelzer and Heller, 2010; Christopher, 2005; Donaldson and Kotze, 2006; Rex and Visser, 2009; Donaldson et al, 2013; Horn, 2005) showed that black people were moving into areas previously reserved for whites, coloured and Indians, while the latter two groups were also moving into former white areas. However there was no evidence of whites moving into African, coloured and Indian areas. Middle income areas were increasingly mixed racially, but some areas had 'reseggregated', i.e. formerly white areas had gone through a cycle of becoming more mixed racially to becoming completely black. Inner city areas had gone furthest in desegregation, except for Cape Town. In some cities desegregation occurred in higher income white areas, while in Pretoria, for example, it was highest in low and middle income areas (Donaldson and Kotze, 2006). Donaldson and Kotze (2006) examining Polokwane, however found that even when there was movement, there was not much interracial mixing, although there was some shared identity in shared spaces. Some literature looked at whether African middle class people – the so-called 'black diamonds' were

moving out of townships, and concluded that there was a level of movement, but many chose to stay in townships due to property ownership, links and identities in the townships (Donaldson et al, 2013). In 2008, prior to the collapse of the property boom, Genesis reported that in some cities and towns, but particularly in the metropolitan areas, property values in some suburbs were overlapping with those in townships, enabling movement into suburbs. Nevertheless, some smaller towns with strong economic growth and limited stock, still showed bifurcated markets, limiting mobility.

Christopher (2005) used the 'dissimilarity index' – an index to measure levels of segregation/integration between pairs of racial groups – to assess desegregation across the country using 1996-2001 census data, and concluded that segregation was still high, but was declining slowly, and was somewhat uneven between provinces and cities. There has been some debate over the appropriate index to use in the context of South Africa, particularly over whether the dissimilarity index is appropriate (see Horn, 2005; Crankshaw, 2012), and other, multi-ethnic indices have been developed. Harrison (2013) used a simpler analysis of 1996-2011 ward data in Johannesburg, Cape Town and Mangaung, examining the proportion of wards with more than one race dominant, ranging from 50% (low segregation) to 90% or more (extreme segregation). He found that levels of extreme segregation had increased in Johannesburg (to 54.6%) since some areas which were more mixed in 1996 had become entirely black, but had declined in Cape Town (to 37.8%) and Mangaung (to 69.5%). Patterns however varied at lower levels of segregation, suggesting that levels of desegregation were occurring across these cities.

Although aggregate indices do have place in measuring progress towards desegregation they tend to obscure the extent to which change is occurring, and further the broader context in which it occurs. Appendix 4 contains a figure and tables showing the racial distribution of the population in the 9 municipalities and how this has changed between 1996 and 2011. They demonstrate that the black African population has become an increasingly significant percentage of the population in every municipality. For instance, in Johannesburg, it increased from 70.2% to 76%, while in eThekweni from 63.2% to 73.6%, and in Mangaung from 77.5 to 83.1. In Kynsna, where the proportion of the black African population was very low at 25.9%, it increased to 35.1%. Similarly in Sol Plaatje, it rose from 51.9% to 61.1%. The proportion of the African population in towns within former homelands or smaller towns bordering on them was well over 90%, and in some cases almost 100% even in 1996, and in most cases, these proportions remained constant (except Mbombela, where it declined). The proportion of white, coloured and Indian populations and their trajectories over time has also varied between municipalities. The white population declined in absolute terms in eThekweni, King Sabata, Sol Plaatje, and Manguang, while it grew in the other towns. The coloured population grew in all

towns, but was generally a very small proportion of the total, except in Knysna and Sol Plaatje. The Indian population declined in absolute terms in eThekweni, but grew in all other areas, but remained a very small proportion of the total population in all towns except eThekweni (16.7%). These varying patterns have implications for patterns of racial change across space within the 9 cities and towns.

Appendix 4 provides a series of maps analyzing the proportion of each race by sub-place for the 1996 and 2011 for the 9 municipalities. As some authors have pointed out (eg. Donaldson and Kotze, 2006; Rex and Visser, 2009), it is not surprising given the demographic composition and change occurring that black African areas have remained predominantly black. Given the past history of segregation and exclusion, it is perhaps more important to assess is black people's exclusion from such areas has broken down. What emerges most clearly from the maps is the decline and contraction of areas that are predominantly white, coloured or Indian, and their reduction to lower levels of representation, and the movement of the black African population across most cities and towns. There are some exceptions to this in new areas of growth of predominantly white populations (e.g. between Kynsna and Sedgefield), and there are areas where high levels of white, coloured or Indian concentration remain, but it is significantly reduced from 1996.

Johannesburg by 1996 already had experienced shift from earlier periods, with a greater concentration of the black population in the inner city, and levels of desegregation in the north (40-60% black African in parts of the north). By 2011, this pattern was far more consolidated, with high proportions of black Africans in the south and centre, and more widespread areas in the north where black Africans account for 40-60% of the population or more. White areas of dominance had much reduced by 2011, and had all but disappeared from the inner city and south. However there were still high levels of concentration in parts of the north. Areas where coloured people were dominant shrank, as Indian areas, and it is evident that new areas showing a level of concentration were emerging in the north, but mainly at relatively low levels of dominance (20-40%). In eThekweni, the old white 'T' around the highway was closing in by 2011 (although there was greater concentration in some the western suburbs, where new growth had occurred), with the proportion of the African population rising in most areas. Areas where coloured and Indian populations were overwhelmingly dominant had declined.

In Mangaung, by 1996, there were already areas of 40-60% black African population outside of the townships and former homelands. By 2011, these were still there, but there were new areas of dominance in the west. Areas with highly concentrated white populations had been reduced, and new areas of growth seemed to be relatively mixed. In Mbombela in 1996, the white population was concentrated in Nelspruit, White River and Hazyview, in most places at very high levels of

dominance (81-100%). By 2011, this dominance was reduced, and there were some new areas of concentration. In Polokwane, several areas of relative mix around Pietersburg had become predominantly black African by 2011. The small largely coloured and Indian areas had disappeared by 2011, and white dominant areas were much reduced by 2011.

In Kynsna, the dominance of the white population seems to have been consolidated and extended in new developments around Sedgefield, while a largely black area seems to have reduced in size and concentration. In Sol Plaatje, black African people were concentrated in the township, with low levels of concentration elsewhere. By 2011, the proportion of the black African population in the rural areas had increased, as had their presence in much of the town. White dominant areas were less than before, as were coloured dominance areas. Tubatse does not look very different in 2011 from 1996, and is overwhelmingly African, with very small coloured and Indian populations. Interestingly however, the proportion of white population in rural areas has increased, possibly due to out-migration by the African population. King Sabata was already overwhelmingly black African by 1996, and there is no evident change by 2011.

While racial residential change is important in understand changing patterns of access, the impact of movement across the city to access better schooling and other social infrastructure should not be neglected. There is no available literature on the usage of social facilities such as hospitals, but it must be assumed that public hospitals in former white areas at least are now very widely used by black people, including low-income groups. There is a small literature on movement to access schools in former white, coloured and Indian areas. Unfortunately, no macro data is available on these issues. The literature on schooling however makes the point that while desegregation through residence tends to be confined to the middle classes, there is much greater racial mixing within schools in the suburbs. This is unusual internationally (Hunter, 2010; de Kadt, 2010). Children of poor (but not the poorest) families are sometimes sending their children long distances to school, at considerable cost. Similarly de Kadt (2010) found that 25% of children in Johannesburg are travelling more than 5km to school, and many are travelling much longer distances. Hunter's (2010) study on schools in the central part of eThekweni found children travelling as much as 25-50 km (roundtrip) to access schools, using several buses and taxis. Accessing education in this way is noty easy. Apart from the considerable cost of transport and the time to access it, Hunter (2010) found that it is resisted to a degree by some of the former white schools themselves, who attempt to keep up the proportion of the white pupils.

Hunter's (2010) work also shows that it cannot be assumed automatically that physical access necessarily translates into real access to schools. While it might be assumed that residential

desegregation would improve access to education in the suburbs, children from informal settlements close to these schools found it difficult to access them, although children of domestic workers living in the area tended to be able to do so, as could children of black middle class families living in the area.

4.3.4 Changing Spatial Economic Patterns

Appendix 5 contains maps of the spatial distribution of employment in per municipality in 2009, based on CSIR mesozone data and analysis. In contrast to the population census, this data describes employment at place of work. Unfortunately, no earlier data is available to compare spatial patterns, and to assess change over time, however literature on changing spatial patterns at least in the metropolitan areas do enable confirmation of patterns (e.g. Geyer et al, 2012; Gotz and Todes, forthcoming; Goga, 2003).

It is apparent that spatial economic patterns vary across the settlements, although it may also be the case that the CSIR mesozones are too large to pick up more fine-grained spatial economic patterns in smaller towns. Employment appears to remain relatively concentrated in Sol Plaatje, Knynsa and Mthatha. The role of main routes in structuring employment spatially is also to some extent evident around Mthatha and Kynsna. In Tubatse, employment is spatially focused on a string of mining industries, the main routes, and in small towns. Further, some economic activities are occurring in new areas of upmarket residential growth on the edge of Burgersfort, although this cannot be seen on the map. More complex spatial structures are evident in municipalities combining former homelands with a collection of towns, such as in Mbombela, where employment is focused on the towns of Nelspruit, White River and Hazyview, and to a lesser extent in the belt of settlements along the road in the former homeland areas. This analysis however does not pick up on patterns of decentralisation within Nelspruit, such as the development of a major new shopping complex on the edge of the town. The CSIR data suggests that the centre remains significant in Mangaung, but there is also employment growth along with upmarket residential growth to the north and west, as suggested in the city's IDP and SDF. Somewhat lesser levels of employment are evident in townships within Bloemfontein, and in parts of Botshabelo and ThabaNchu. Hence there is a level of decentralisation occurring in several towns, with retail and office (to some extent) following higher income residential development.

The complexity of spatial economic patterns in large metropolitan areas is evident from the maps of eThekweni and especially Johannesburg. As noted above, the large metropolitan cities are also the places where growth has been most concentrated, and this is reflected their dominance in building plan approvals, particularly in office and banking (Harrison, 2013). As noted by Geyer et al (2012),

these are places where decentralisation from CBDs has been significant, with considerable employment growth in suburbs and new nodes on the edge (see also Harrison, 2013).

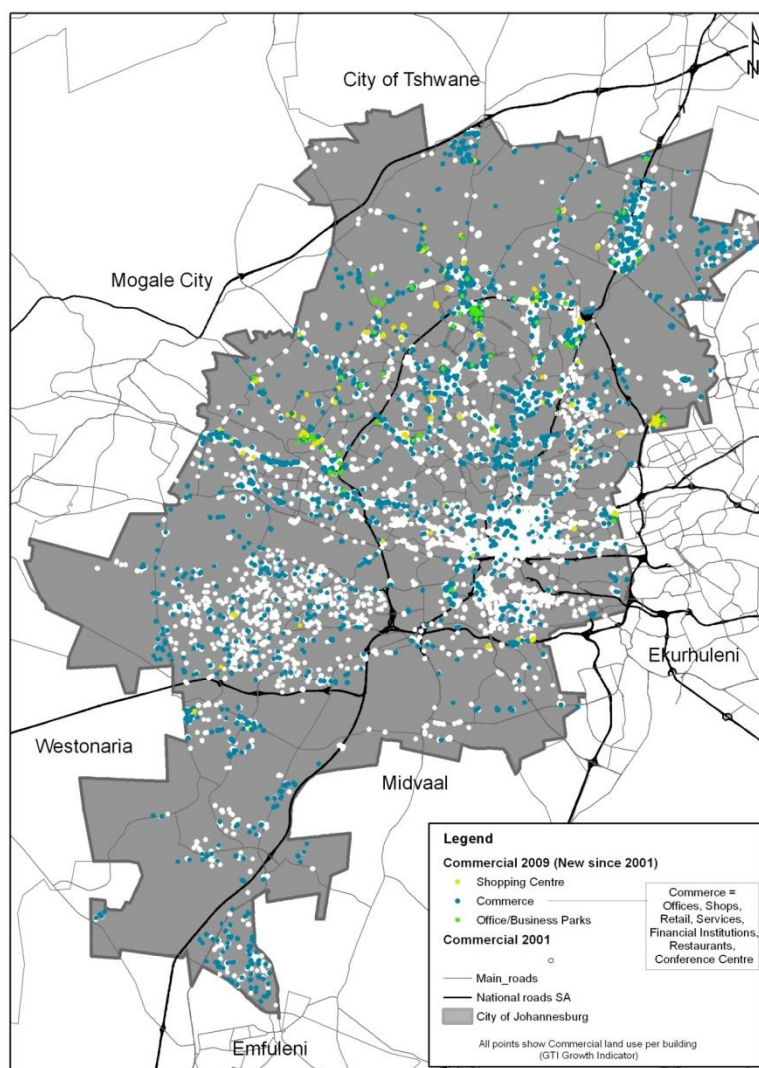
In eThekweni, growth has followed the characteristic T shape of the highways, close to high and middle-income residential areas. Both shopping and offices have decentralized in this way. Harrison (2013) notes that 61.5% of the value of building plan approvals for retail was in the Outer West, while 57% of office and banking was in the North in 2010. Growth in the north has been driven by a combination of landowner and provincial interests, and by the availability of land and infrastructure in the area. The push towards major new retail and office developments in the North – Umhlanga and Gateway, and the new airport however was only reflected to a limited extent in employment by 2009 in terms of the CSIR data. Employment in Avoca/Effingham and Phoenix in fact is more significant than in Umhlanga, reflecting older and new areas of industrial growth. Notwithstanding new growth and decentralisation, however, Durban's southern industrial basin, city centre and surrounds are still the most important centres of employment. Durban's CBD has not necessarily declined in terms of employment, but has reoriented (at least partially) to a lower income population. Somewhat similar patterns are evident in Johannesburg, where the CBD – still highly significant – houses both headquarters of major companies and extensive street trading and retail activities oriented to a lower income population.

In Cape Town, policies towards the revitalization of the CBD seem to have been successful in attracting and consolidating business in the area, although Harrison (2013) reports that some 87.5% of building approvals for office and retail and 75% for retail was in the northern axis and Blaauwberg in 2010. Sinclair-Smith and Turok's (2012) work on Cape Town, drawing on data from regional service levies between 2000 and 2006, shows a level of recentralization of economic activity in the CBD. This new growth may also be linked to the broader process of gentrification in the inner city around Cape Town. Thus the CBD remains significant and the patterns are somewhat different from Durban and Johannesburg.

Patterns of decentralisation of economic activity and employment are most developed and extensive in Johannesburg, but even here, the CBD remains the most significant economic centre in the city and the city-region (see Gotz and Todes, forthcoming). Sandton has emerged as a close second node, and there are a series of nodal points, largely in the northern areas (middle and upper income areas) of the city. Johannesburg's spatial economic patterns combine both nodal growth outside of the CBD, together with a pattern of 'scatteration', i.e. highly dispersed development within suburbs. The system of highways and arterials also structure spatial economic growth in significant ways. Major shopping complexes and office blocks have developed along these routes, in some cases in areas

that might be seen as on the urban edge. Thus Johannesburg's spatial patterning has developed strongly in response to a car-oriented society, and also serves to reinforce the dominance of the car. The significance of this pattern is evident in Figure 13, which shows new office and retail growth in Johannesburg between 2001 and 2009, based on GCRO's analysis of GTI data on buildings.

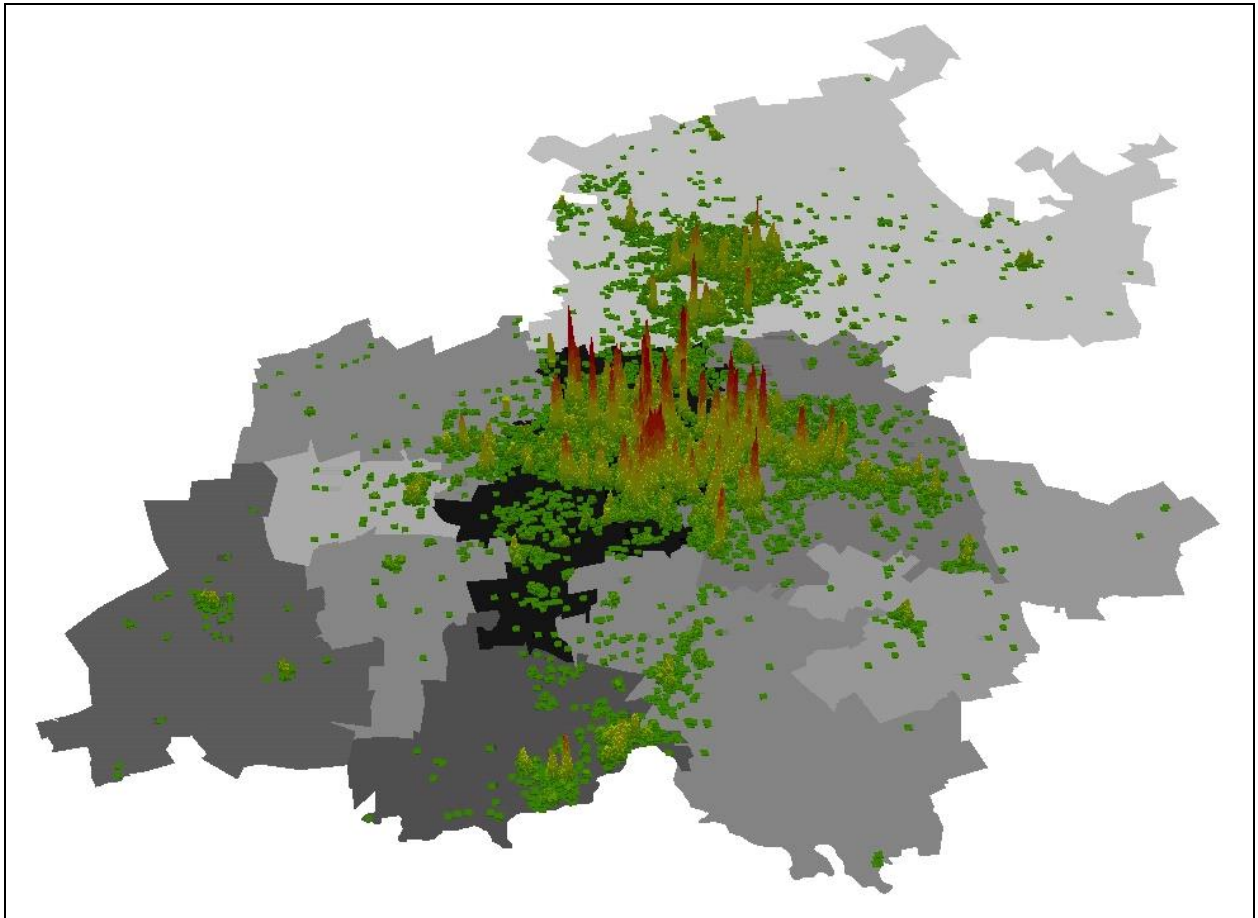
Figure 13: Growth in Commerce in the City of Johannesburg, 2001-2009



Source: GCRO (2012) based on GTI data, in Gotz and Todes (forthcoming)

GCRO's mapping of the Gauteng region based on Afrigis data shows that new centralities are emerging between Johannesburg, Ekurhuleni and Tshwane. It also demonstrates the multi-nodal and scattered pattern on development, with multiple peaks, and a density of economic development across a wide area.

Figure 14: Economic Activity across Johannesburg and Gauteng: Number of businesses.



Source: GCRO (2012), based on Afrigis, in Gotz and Todes (forthcoming).

Goga (2003) shows that after a period in which office decentralisation followed suburban development, a far more extensive process of occurred in Johannesburg from the 1990s, driven in part by financial imperatives, and to a degree by a 'herd instinct'. It can be argued that financial interests and property developers have played a key role in patterns of decentralisation, and that businesses have reacted to perceived 'crime and grime' in the CBD, and to traffic congestion and limited parking there. The direct and indirect role of planning and state investment over time however needs to be acknowledged as well. For instance, the role of earlier regimes in planning Sandton is well known (see Beavon, forthcoming), and Mabin (2012) shows how a network of roads and highways were planned between the 1940s and 1970s. This road network has been an enormously powerful attractor of business in the late apartheid and post-apartheid period. The role of the Midrand council in actively using the highway to attract business is a more recent example. In the post-apartheid period, the DFA Tribunal seems to have allowed considerable business

development along roads and arterials, while competition between municipalities and the need for revenue in the period of transitional local government in the 1990s, also seemed to enable a looser approval to development approvals. And since consolidation of local government, it has taken planning some years to establish the frameworks to focus growth according to plans (Todes, 2012). Whether new kinds of transport interventions such as the BRT and Gautrain can serve to focus growth over the longer term is still open to question. While the Gautrain seems to be attracting new development around some nodes (Sandton and Rosebank), the impact of the BRT is more limited at this stage (Todes, 2012).

On the whole, the new patterns of decentralized development have been in higher income areas, generally distant from townships. However the post-apartheid period has seen a level of investment particularly by shopping centres in townships. Demacon's (2010) study shows a dramatic growth in the number of township shopping centres built since 1995 (76), and particularly since 2005 (32). Some 65% of shopping centres have been built since 1994, and 75% of the floor space of centres was built since then. The average size of shopping centre also grew from 6500m² to nearly 20,000m². Under apartheid, such centres were mainly local convenience and neighbourhood centres, while large regional centres have emerged post-apartheid. Growth has been strongest in the largest cities and towns, but has also to a degree, moved further afield. Some 54300 jobs have been created in these centres (Demacon, 2010). Shopping centres have been enabled by the growth of the black middle class, many of who continue to live in these areas, by the expansion of the social grant, inter alia (Donaldson and Du Plessis, 2013). Shopping centres provide savings on travel, safe and secure places to shop, a variety of affordable quality goods, and access to banking and higher level services in the best cases. Impacts on local business have been complex and are debated. Local business benefits from the improved range of facilities and services, but competition remains a concern. Studies show that how local business performs depends on the distance from the centre (e.g. business may suffer within a range of 2-5km from the centre) and the type of activity, but there are variable outcomes, depending on the context (TTR, 2012; Donaldson and Du Plessis, 2012), e.g. Lighthelm (2010) shows that 48% of firms within 5km of the Jabulani Mall in Soweto closed down within 2 years.

The growth of township shopping centres however is dwarfed by the much more rapid growth of new shopping centres and office complexes outside of these areas, as Figure 14 above demonstrates. While townships have benefited from policies of Urban Renewal and the Neighbourhood Partnerships Development Grant and other township development strategies over time, studies of their impact indicate that the most significant physical development and

employment creation has been through these centres. Ngixza (2012) examining the Khayelitsha development in Cape Town, argues that little attention to industrial development, and small business development has been limited. Donaldson and Du Plessis (2012) suggest that small business development has suffered from an exodus of entrepreneurs and middle-income people. Nevertheless, the benefits of these programmes in terms of improving infrastructure and everyday life should not be neglected.

There are few studies which have measured the impact of the changing urban space economy on access to employment for those in townships and the urban poor, and little data with which this can be assessed. GCRO's surveys of Gauteng enable a level of analysis of these patterns. Gotz and Todes (forthcoming) drawing on this data for Johannesburg (focusing on Alexandra, Soweto and Orange Farm) argue that "the dislocation between people and jobs is still a defining feature of the Johannesburg space economy, and the pattern is getting worse" (Ibid. p30). Yet patterns are more complex. Both workers and workseekers travel long distance to work, but most travel is centred on the inner city. Even 35% of workers and 60% workseekers from Alexandra focused their efforts there, with only relatively small proportion working or seeking work in Sandton (9%), and somewhat greater numbers (17%) working in industrial areas nearby. However workers in Diepsloot were more likely to work in the growing industrial and commercial nodes in the north and west, and only 7% working and 33% looking for work in the CBD. Travel times to work appear to have declined slightly compared to earlier periods (from 75 minutes in 2002 in Orange Farm, to 66 minutes in 2011), seemingly as a consequence of the use of taxis, rather than improved proximity to work.

Crankshaw's (2012) research on Cape Town also provides an important qualification to spatial mismatch ideas. He finds that employment growth in the Cape Town has largely been for professionals and managerial classes, while deindustrialization has resulted in job loss among the working classes. Professional and service growth has been associated with an increasingly racially mixed middle class, and growing racial residential mix in middle class areas, alongside areas of very high unemployment of low skilled workers.

4.4 Access to the City by the Poor and Lower Income Groups.

The sections above have described spatial patterns of change within cities and towns, but the specific dimensions of access by the poor and lower income have not been discussed explicitly. This section examines aspects of access to cities and towns by the poor and lower income groups, drawing largely on existing literature, and to some extent on census data.

4.4.1 The Role of Inner Cities

A significant literature has pointed to the role of inner cities as 'arrival areas' for migrants from foreign countries, as well as from the rest of South Africa, and for enabling access to employment and economic activity (e.g. see Cross, 2010, 2011; Cross et al, 2005; Venter, 2012; Dinath, forthcoming; Benit-Gbaffou, forthcoming). Studies in eThekweni (cited by Todes, 2003) show how the inner city provides access and livelihoods for particular groups of low income women, such as traders and domestic workers. Venter (2012), drawing on the Gauteng City Region Observatory's (GCRO) Quality of Life Surveys in Gauteng finds that 50% of residents in 'urban core' areas in Gauteng have moved there in the last 15 years. Those accessing city centres however tend to be somewhat higher income and employed. Cross (2010) suggests that there are several different constituencies converging on the inner cities, some attempting to reduce the cost of housing to the minimum, while others pay more for better accommodation. Dinath (forthcoming) points to the tension between transience and fixity in inner cities, and the varying demands on space in these areas.

Studies show that inner cities offer access to employment, and to informal economies, as a consequence of their size and density. They also reduce the cost of transport substantially. Venter (2012) argues that there are significant benefits for the poor of the central city: walking to economic opportunities is possible (and is the main mode of transport), reducing expenses, and there is good access to public transport, as various modes of transport tend to converge on the city centre. These findings accord with the propositions of those advocating more compact urban development. Generally trip distances increase as settlements are located further from the CBD. Residents of new RDP and informal settlements have much lower access, and more onerous and costly mobility conditions than those in the central city, and there are high levels of immobility due to the absence of affordable options, choice or long travel distance. The shortage of local amenities in these areas as well, leads to limited opportunities for walking and reliance on long and costly public transport for access to employment¹⁷.

Studies showing the benefits of inner cities for the urban poor and migrant populations tend to be focused on Gauteng, and to a lesser extent, eThekweni, where there are significant populations of this sort. Smaller towns and cities do not necessarily offer these kinds of spaces, which tend to have

¹⁷Nevertheless, taking all income groups surveyed together, Venter (2012, Tables 12 and 13) argues that costs and travel times are not necessarily lower in urban cores than elsewhere, since expenditure by residents in the urban core and suburban areas is pushed up by the use of private vehicles, and travel time by walking. The use of private vehicles also distorts attempts to consider transport expenditure in aggregate as a proportion of income over time (see Behrens, 2006; Statistics South Africa, Income and Expenditure Surveys for 2010/11, 2005/6).

arisen from processes of residential and economic decentralisation. The large increase in the number of households living in flats between 1996 and 2011 in Johannesburg (from 80,832 to 144,522) and eThekweni (from 74,378 to 95,027) may reflect these processes. Processes of gentrification and CBD revitalisation may however cut off or limit these opportunities, as seems to have occurred in Cape Town (Pirie, 2007), and there are often tensions around initiatives for inner city regeneration and access to the inner city by the poor. Further, processes of inner city change affect established residents, and there are complex and varying interests in inner cities, which can be difficult to negotiate (Benit-Gbaffou, forthcoming). Further, Genesis (2008) analysis of property markets found that while inner cities are attractive residential locations, rents are often insufficient to meet required returns for investors, leading to urban decay, especially in social infrastructure development does not keep up with demand. Nevertheless, some private sector developers and social housing agencies are able to operate successfully in these markets.

4.4.2 Informal Settlements and Access to the Poor

Informal settlements are also important places of access to the city, especially for the very poor, including migrants from rural areas, and those involved in complex patterns of survival across space (Posel and Marx, 2011; Cross et al, 2005). Cross (2010) argues that shacks in the outer areas of Gauteng house poorer, older and less educated households, some half of whom are headed by women. These peripheral shacks however house five times the population of more centrally located informal settlements.

According to tables and figures in Appendix 1, the proportion of households living in informal settlements in 2011 varies significantly across the municipalities, ranging from 18% in Knysna and 11% in eThekweni to 3% in Mbombela and less than 1% in King Sabata Dalinyebo. The number of households living in informal settlements however has grown in absolute terms between 1996 and 2011 in all municipalities, except for King Sabata Dalinyebo and Sol Plaatje. In most cases, growth was quite modest, except in Johannesburg (where it increased by 24%), Polokwane (where it increased by a third) and in Tlokweng, where it tripled. In all cases except Tlokweng however, the proportion of households living in informal settlements has declined.

Government responses to informal settlements have gradually shifted from the conventional approach of relocating residents to new housing in greenfield developments to an acceptance of *in situ* upgrading and incremental processes of tenure upgrade. The national Department of Human Settlements is committed by Outcome Eight of the Presidency Delivery Agreement to the ambitious target of upgrading 400 000 sites in informal settlements by 2015. The department is assisted in this task by the National Upgrading Support Programme (NUSP). At local level (e.g. Johannesburg,

eThekweni, Cape Town), there has been some innovation in developing the mechanisms for informal settlement upgrades.

In general, however, progress with informal settlement recognition and upgrade remains slow, with ambivalent attitudes towards the existing of informal settlements remaining across all spheres of government. The overwhelmingly dominant approach in terms of human settlement remains subsidized housing on greenfield sites.

The impact of the upgrading programmes on access for the urban poor have, therefore, yet to be seen. In situ area-based upgrades will, arguably, have the greatest access benefits for segments of the urban poor who do not qualify for housing subsidies.

4.4.3 Backyard Rental

SALGA's recent (2013) study of backyard rental (Rubin and Garner, 2013) shows that it plays an important role in affordable and quality rental accommodation for smaller, lower income households. It accommodates a diverse spectrum of households who are unable to own property, often women, single parents, foreigners or recent urban migrants. It includes a range of typologies from backyard shacks to second dwelling units on property (Rubin and Gardner, 2013). It occurs in a range of contexts, including former townships, new RDP settlements, and forms of it occur in the suburbs. It is even emerging unplanned in new formal mixed developments such as Cosmo City in Johannesburg. The SALGA study finds that most such housing is of reasonable quality, providing basic services, providing affordable rentals and relatively secure tenure. Since rentals have to be paid, tenants tend to be regular income earners, and rental incomes provide supplementary incomes to owners. In well-located areas, landlords may maximize the number of rental units through developing tenements. By 2011, some 8.7% of households lived in backyard units, and this category appeared to be growing rapidly, absorbing larger proportions of new households than informal settlements.

However the significance of backyard accommodation and their trajectories does appear to vary by municipality (see tables and figures in Appendix 1). The category of formal rooms or structures in backyards (not shacks) varies from 2% in Knysna to 8% in Johannesburg. In all municipalities, this was a declining proportionately, but still increasing in absolute terms in several municipalities – King Sabata, Johannesburg, Polokwane and Tubatse. The numbers and proportions of backyard shacks also varied, ranging from less than 1% in King SabataDalindyebo to 8% in Johannesburg. In some municipalities it was a declining proportion (King Sabata, Mangaung, eThekweni, Mbombela), while it was a growing percentage of accommodation in the others. Over the period, it increased in absolute

terms in all municipalities, except for Mangaung and King Sabata. Growth was strong in Johannesburg, where it nearly tripled to 124075 units, and in Tubatse and Polokwane. Taking the two elements together, it is clearly very significant in Johannesburg, where it has risen, and now accounts for over 16% of accommodation – more than informal settlements. In most of the municipalities sampled, it is around 6%, and slightly higher in King Sabata (8.5%), Polokwane (8%) and Kynsna (7%), and less in Mbombela (4%).

Nevertheless, backyard shacks are an important form of access to the city, and have been under-recognised in policy, as the SALGA report makes clear. Policy responses range from laissez faire to disallowing ‘illegal structures’ to service improvement and upgrading. While there is an assumption that densification through this means is placing undue pressure on infrastructure, the SALGA report note that household sizes are usually small, and that this trend is occurring in a context of declining household size. In some cases, it may be placing pressure on infrastructure, in other cases, not. This requires further research and assessment, and needs to be addressed and embraced in policy, including planning new developments to be able to accommodate it. Ironically, it is one of the ways in which densification of the city is occurring – but often outside of the ways expected by policy.

4.4.4 The limits of inclusionary housing policy

In the mid-2000s, draft policy was created to encourage property developers to include a level of ‘affordable housing’ (10-30%) in their new developments, for those earning R15000-R8000 per month, although the income levels varied between documents. This policy on ‘inclusionary housing’ was intended to enable greater integration, and enable lower income groups better access to employment in higher income areas. It was never intended to deliver housing on scale, and the difficulties with implementation given the huge price cliffs between rich and poor were recognized. However the draft policy was never made official, seemingly due to resistance by the property sector. Although it agreed to the broad idea of inclusionary housing, it was argued that the details were not properly worked out. Further, the way one municipality attempted to implement it led to resistance (Klug et al, 2013). In the absence of national policy, very little has happened. Some municipalities have attempted to develop and implement their own policies, but have been hampered by the absence of national policy. For instance in Johannesburg, the few attempts to use inclusionary housing policy stalled (Klug et al, 2013), in part due to the absence of national policy, but also due to other difficulties, such as dealing with the price cliffs.

While inclusionary housing has not taken off, some private developers have undertaken mixed income housing projects, although the mix here ranges from RDP housing to ‘affordable’ and gap market housing, i.e. the lower end of the private market. Projects are often done in some form of

partnership with local government, and draw on subsidies for housing and infrastructure. Projects tend to be relatively well located, at least on accessible routes to main sources of employment, but tend to be confined to lower/lower-middle income areas of the city. There are few projects that defy traditional class geographies in cities.

4.4.5 Informal Economies and Access

While studies of access of the urban poor to the city often focus on well-located housing, Ovens and Kitchen (2007) argues that this neglects questions of inclusion and access to land with regard to economic activities, particularly informal trade. However opening up access in this way, and accommodating the urban poor can have more significant impacts on their welfare than access to housing. Good examples of projects which have done this include the Mansell Road informal trade and accommodation for traders around a major transport node in Durban, and the Warwick Triangle project which accepted and facilitated informal trading at Durban's central station for several years. Wills (2009) notes that some 24% of the employed in metropolitan areas work in the informal sector. For instance, there were almost 800,000 informal workers in the Gauteng metropolitan areas. National figures are even higher. Street vending is the main activity (accounting for around 500,000 workers), but other activities, such as informal waste collectors (accounting for between 45,000 and 85,000 workers), are also significant. Some 26% of informal workers work from homes.

The question of how informal economic activity is accommodated within cities and through the planning system is crucial to questions of how the poor are able to access urban opportunities. In many instances, municipal policies towards the informal sector are repressive, and do not accept or accommodate it (Skinner, 2010). There are nevertheless some excellent examples of accommodating informal trade in productive ways, the most well known being the Warwick Avenue Triangle project, which also included accommodation of a range of facilities needed by informal traders and their specific forms of trade. Unfortunately however, good practice does not necessarily last, and it is not uncommon for authorities to move back towards more repressive practices (Skinner, n.d.). Nel (2012) argues that municipal land use policies frequently do not consider informal economic activities, with the result that these activities are not properly accommodated. Some new planning schemes may include more liberal definitions enabling levels of informal economic activities, but there are considerable variations between municipalities, and not much systematic consideration of what is required to both manage it and to enhance economic potentials. In some municipalities, informal trade does not fall under planning as it is not dealt with through zoning (as it occurs on the street), but rather is managed by economic development departments which control it through some form of licensing. Informal trade, and informality in general, tends not be explicitly considered

in spatial planning policies. This is a significant gap which needs to be addressed in policy reform. Linked to this, the acceptance of the cultural practices of the poor (e.g. accommodation of *muthimarkets*, bovine head cooking as occurred in the Warwick project), and questions of safety (particularly for women, who are a significant part of informal trading) are also important.

4.4.5 Land Markets, Planning and Access by the Urban Poor

A significant literature developed through Urban Landmark has documented the operation of informal and formal land markets, how this affects access by the poor (e.g. ULM, 2007a,b, Napier et al, forthcoming; Napier and Ntombela, n.d.; Smit, 2008; Genesis, 2008). This literature points to the way formal land markets exclude the poor, for instance how property values in well-located areas, along corridors and so on, make it difficult for the poor to access land through the formal system. For the urban poor, adequacy of location, space, services, affordability, physical security, security of tenure and future prospects of accessing RDP housing are all considerations in decision-making on accessing land, but at present, it is difficult to the urban poor to access land in ways that meet their changing requirements. Nor has the state or local government attempted to use planning and other regulatory systems to enable access to land for the urban poor. State land, too, is rarely exploited in this way, although ownership and development rights are not always clear.

The ULM literature points to the greater flexibility, efficiency and affordability of informal land markets (although these are not seen as separate from formal markets), and raises concerns about whether there is the capacity to formalize informal markets. Accessing land and places to stay is far easier and quicker than through either state or private markets. Informal markets tend to be governed by norms and practices put in place by community structures. In some cases, even formal developers (e.g. of shopping centres in townships) have been forced to negotiate with these structures to secure sites, resulting in benefits for the local community (such as provision of facilities etc). However there are obvious shortcomings to these processes – the potential for corruption, and the possibility that only local elites benefit.

It is argued that local practices in land access, holding and trading need to be recognized, but that policy should work towards increasing their accountability and openness. Adding administrative weight might help to ensure external recourse as necessary, and help to protect the interests of the vulnerable against exclusionary social networks. Nevertheless, the way this is done needs careful consideration. The planning system has so many complex demands that it is unable to deal with the poor in a productive way. The heavily burdened planning and land administration system pushes up land and professional costs. According to one publication, “Illusion that the system can be made to

work for everyone fuels an approach that effectively entrenches privilege and excludes the poor” (ULM, forthcoming, p.75).

ULM argues that a number of key interventions are required. It is beyond the scope of this paper to present these in a comprehensive way, but they include measures to enhance the supply of affordable urban land, and legal and institutional reforms to break down barriers to access to land to the urban poor. The latter requires the development of systems which allow legally protected rights that can be held and traded at fair value and augmented over time. While initial rights may lack the level of legal protection offered by the formal market, they afford the holder greater security of tenure, use and development of land. Reforms might involve for instance, simplifying and rationalizing requirements for registering land rights, facilitating approval of land use changes and using planning processes to recognize the interests of groups of people even when they do not have formal rights to land. It is hoped that these interventions will serve to lower transaction costs and the actual costs of taking up land opportunities.

4.4.5 New Transport Interventions and Access by the Urban Poor

The spatial marginalization of large sectors of the urban poor on the periphery of cities and towns has long been recognized as a major concern to be addressed. Venter and Cross (2011) note that long travel distances and times still pertain in many settlements, and it is often the poorest and most recent migrants who live in the most spatially marginal settlements in towns and cities. Transport subsidies, which continue, are still necessary to deal with these costs. Improving public transport networks and systems within cities and towns thus continues to be of critical importance. According to successive Income and Expenditure Surveys, public transport (transport services) accounted for 2,4% in urban formal areas and 10.7% in urban informal areas in 2010/11. Transport as a whole accounted for 11.8% and 11.4% in the bottom two income deciles, while ‘transport services’ accounted for 7,3% and 7% respectively in these deciles. This is not very different from in 2005/6, where transport services accounted for 3% of urban incomes, and the bottom two deciles spent 10.5 and 12.3% of their income on transport, and 6.8% and 7.3% on transport services in these deciles.

While new forms of public transport like the Bus Rapid Transit (BRT) system in some of the major centres (now spreading to some secondary cities as well) are intended to improve public transport, research raises questions about its accessibility to the poor. For instance, Venter and Vaz (forthcoming) research on the use of the BRT in Soweto suggests that it does not tend to be used by the very poor. Similarly, Cape Town research is critical of its ability to address the travel needs of the poor (SACN, 2013). From another perspective, it might also be argued that too little has been done

to maximize the benefits of BRT systems in terms of integrating them into the surrounding urban fabric, and in terms of building on their potentials for value capture.

5. Managing Spatial Change for Greater Access

As we have shown spatial transformation is happening in South Africa's towns and cities, although to varying degrees, and with varying outcomes. Much of this change is positive as it is bringing individuals and households into a better alignment with jobs, livelihood opportunities and services. However, there are aspects of change that are inconsistent with our goal of achieving greater access, or are poorly managed leading to outcomes including slum formation, environmental destruction, and overloaded infrastructure.

How can government intervene more effectively to support positive spatial outcomes? As indicated below, post-Apartheid experience has been mixed, with many (although, certainly, not all) opportunities for supporting positive spatial transformations having been missed.

5.1 Post-Apartheid Experience with the Instruments of Spatial Transformation

There has been progress, post-Apartheid, in developing instruments to support spatial transformation. The most significant advance has been in developing instruments for strategic spatial planning. At municipal level, these instruments have sought to bring spatial planning into an alignment with the strategic objective contained in Integrated Development Plans (IDPs). The key instrument has been the Spatial Development Framework (SDF).

Experience with SDFs has been mixed. A number of official evaluations have pointed to highly diverse performance¹⁸. In some instances, SDFs have helped in aligning capital budgets; in directing development towards areas where capital intervention is required; and, in identifying specific programmes for land development. In many instances, however, SDFs have been vague and have done little to influence actual patterns of spatial development. Specific problems have included: limited engagement with the dynamic of spatial development, and particularly with the nature of urban economies; lack of alignment with the SDFs of neighbouring municipalities; and, variable linkage to capital budgets.

The evaluations have focused mainly on the output (the SDF as a document) rather than actual outcomes. There are a few instances (e.g. the City of Johannesburg) where there is an attempt to

¹⁸ Evaluations of municipal SDFs have been conducted by the South African Local Government Association (SALGA), the Department of Co-operative Governance and Traditional Affairs (COGTA) and provincial governments.

monitor the real effects of the SDF on spatial development. In the case of Johannesburg, the SDF (and related spatial plans) is having some effect on shaping spatial outcomes in areas where the property market is buoyant (e.g. shifting development towards transit nodes and corridors in the north of the city) but is having limited impact in making more fundamental transformation (e.g. in stimulating development in the south of the city near concentrations of low income residence).

There is also an emergent scholarly critique of South Africa's SDFs. Todes (2008) concludes, for example, that:

Spatial frameworks have been too broad, too utopian, and have been contradicted by both national policy, and by trends in the property and housing markets. They are neglected in site level decision-making, and do not link sufficiently to land use management, or to infrastructure planning.

Todes argues that SDFs could be improved by an engagement with the complexity of socio-spatial dynamics in the city; and, a stronger understanding of urban economic space. Todes also emphasizes the need for a more conscious link between strategic spatial planning and infrastructure planning. Historically, there has been a neglect of the importance of infrastructure in shaping spatial patterns and most SDFs have given scant attention to infrastructure networks. This is changing with new attention in some municipalities to the role of infrastructure as a backbone for spatial development but also to the role of infrastructure investments in greening towns and cities, and in leading a transition towards sustainability. In the City of Johannesburg, for example, a Growth Management Strategy (GMS) was introduced in 2008 to align infrastructure investment with desired spatial patterns of growth, and this GMS has subsequently been integrated into the SDF. Also in Johannesburg, the infrastructure and environment departments have been amalgamated to align sustainability objectives more closely with infrastructure investments.

The larger metropolitan municipalities have generally been the most innovative in advancing strategic spatial planning, complementing the SDF with more detailed spatial planning which provides clearer guidance for spatial decision-making. Most large metropolitan municipalities have SDFs which address the need for intensification of land uses, transit-oriented development and functioning urban nodes. Some municipalities have introduced strategies to align infrastructural investment with desired spatial outcomes and to address the upgrade of informal settlements.

In these municipalities SDFs are often complements with densification policies¹⁹, urban edge strategies, capital investment strategies, Integrated Transport Plans and specific programmes and projects to catalyse spatial transformation (e.g. Johannesburg's Corridors of Freedom, eThekweni's Bridge City, Ekurhuleni's Aerotropolis). Many of the metropolitan plans and initiatives do give explicit attention to the issue of access. eThekweni, for example, has an Access Model which guides planning decisions and has worked with the CSIR in assessing accessibility to identify spatial gaps in service provision. The City of Cape Town has developed an Accessibility Grid around which an integrated hierarchy of transport facilities is developed.

There are instances of innovation and good practice outside the large metropolitan municipalities but government capacity is a major constraint.

A specific point of weakness across most municipalities is the linkage between strategic spatial planning and the key instrument of land use control, the land use management scheme. Reform of the land use management system has significantly lagged advances in strategic spatial planning. The Development Facilitation Act (1995) was an attempt to introduce norm-driven spatial planning but many developers continued with business-as-usual, paying mere lip service to the post-Apartheid development and planning norms²⁰.

In 2001 a *White Paper on Land Use Management and Spatial Planning* was produced but it took until 2013 for the promised legislation to be accepted by Parliament. Even then, many actors in the spatial planning arena expressed severe reservations with the Act, and the NDP recommended a far-reaching review of the spatial planning system, following the promulgation of the Act, with a view to further legislation within five years. The Act does, finally, allow provinces to move ahead with their own spatial planning legislation, which would replace Apartheid-era Ordinance but does not address some of the more fundamental flaws of the post-Apartheid planning system, including the deeply entrenched separation between development management and environmental management. The work of Urban LandMark has also raised critical issues around the ability of the formal system to connect with the ways in which the urban poor access land in the city, and secure livelihoods.

There have been few attempts to move beyond SDFs (and related instruments such as densification strategies) and land use management schemes to embrace other instruments that would support

¹⁹ Methods of densification supported in these policies include infill, building conversions, subdivision, land consolidation, cluster housing, new housing typologies.

²⁰ Furthermore, the Act was promulgated before local government legislation, and was inconsistent with attempts to co-ordinate spatial development locally. In 2010 the Constitutional Court found that Chapters 5 & 6 of the DFA were constitutionally invalid as municipal planning – which includes the rights to determine zonings and decide on township applications – is the exclusive competency of municipal government.

the goals of spatial transformation by influencing the behavior of public and private sector developers.

It is mainly in the environmental field that innovations are happening in relation to internalizing cost of development. Carbon taxing and road tolling do represent moves towards the cost pricing of natural resources and the externalities associated with development. Other sustainability instruments which as at least being considered in the South African context include tradeable emission permits, pollution taxes, impact fees, environmental bonds²¹, voluntary instruments such as environmental certification, environmental liability insurance and so forth. A number of municipalities are involved in carbon trading schemes. The same sort of innovation is not yet apparent in the broader field of spatial planning and land management.

Ovens et al (2007, p.??) wrote that “... there has been little advancement and innovation in thinking and practice around land management, and South Africa’s towns and cities continue to develop without an adequate framework for managing land development in a way that supports the goals of democracy, equity, efficiency and sustainability”.

There have been a few local experiments with the use of incentives to influence spatial decision-making with results that have yet to be properly assessed (for example, Johannesburg’s use of special incentives such as density bonus and fast-tracked development applications to draw developers to areas prioritized by the City).

The use of economic and fiscal instruments is equally sparse. The few existing instrument includes the Urban Development Zones (UDZ’s) which provide a form of tax abatement to support inner city regeneration, and local initiatives such as Tshwane’s area-based rating policy which allows for spatial targeted land taxes. Some attention has been given to the possibility of introducing mechanism of land value capture but implementation has not yet happened²². Almost no attention has been given to mechanisms such as impact or betterment fees or tax incremental financing to support new infrastructure development.

²¹ “Instruments that aim to shift responsibility for controlling environmental impacts, monitoring, and enforcement to individual producers and consumers who are charged in advance for the potential damage”. Examples include land reclamation bonds, performance bonds, environmental accident bonds

(http://www.afromaison.net/eco_dss/pdf/Definitions_Review_Suite_Instruments.pdf)

²² See the work of Urban LandMark on Land Value Capture. Land Value Capture involves mechanisms to capture increments in land value as a result of new infrastructure investments to either recoup the investment in the infrastructure or provide funding for new infrastructure development or investments in affordable housing, new amenities or other positive public goods.

Municipalities do own land, but little has been done to use this (and other publicly owned land) to leverage desired patterns of development, although the Housing Development Agency (HDA) is working with a number of municipalities to identify and development strategically located, publicly owned land.

There are a few funding instruments strategically targeted at spatial outcomes (such as the Neighbourhood Development Partnership Grant administered by the National Treasury) but funding streams remain fragmented and are generally not a viable instrument to achieve integrated spatial development.

There is a national programme for the upgrading of informal settlements (National Upgrading Support Programme – NUSP) and some experimentation with informal settlement interventions are municipal scale but progress has generally been slow due to ambivalent attitudes across government to the existence of informal settlement, and the lack of capacities and instruments to address matters such as tenure upgrade.

There are available instruments which could influence spatial outcomes which have not been used for this purpose. Developer contributions, for example, are provided for in planning legislation but have mainly been handled technically, with little if any consideration of how they might be used to achieve spatial objectives.

More seriously, there are instruments of government which actively undermine spatial objectives. The housing subsidy scheme has, infamously, promoted poorly located development, while the new rating formula may accidentally inhibit the development of urban land. A major cause of sprawl may be the failure to properly internalize the costs of infrastructure, specifically the costs of transport infrastructure. The intentional and unintentional impacts of government policies on spatial development must be given careful consideration.

In general, post-Apartheid government has been sharply constrained in its ability to contribute proactively to spatial transformation processes by factors including: the slow transformation of the land use management system; low capacity for spatial planning and limited innovation outside the large metropolitan areas; powerfully entrenched spatial interests (e.g. represented through resistance to densification and new development by the middle class or urban edge type commercial and office development by large developers); and, inadequate use of new or existing fiscal and other instruments to incentivize or regulate spatial behaviors.

5.2 Into the future: expanding the arsenal for spatial intervention

For government to intervene effectively in support of spatial transformation, the following is arguably required:

- Spatial Development Frameworks must become more effective instruments with attention given to such matters as: proper analysis and understanding of urban economies and socio-spatial trends; and elaboration of SDFs into more spatially detailed plans that provide a meaningful basis for adjudicating development applications and guiding capital investment;
- Explicit attention must be given to infrastructure within strategic spatial planning (for example, through the development of Growth Management Strategies and their integration into SDFs);
- Innovative local responses to the promulgation and implementation of the SPLUM;
- Careful attention to the actual processes whereby the urban poor access urban land and use this urban land to support livelihood production with tailored responses that link formal land management to these processes;
- Aligning the spatial dimensions of all government programmes (e.g. aligning the housing programme and the operation of the housing subsidy to spatial objectives)²³
- Introducing explicit attention to “Access” in spatial planning (for example, using methods developed by the CSIR);
- Explore the use of economic and fiscal instruments, and the capacities required to do so (specific attention to instruments such as land value capture, tax incremental financing (TIF)²⁴, impact and betterment fees, taxing/rating districts²⁵, taxing/rating abatements²⁶, financial risk management instruments²⁷)²⁸
- Use public land more effectively to leverage benefits of spatial transformation²⁹
- Adoption of city-wide informal settlement regularization and upgrading programmes, and the development of instruments and capabilities for these programmes;

²³ All government policies should be audited for their spatial effects.

²⁴ TIF uses anticipated growth in property taxes from a development project or infrastructure investment to finance the project or investment. Bonds are issued for the specific purpose of the investment.

²⁵ Special taxing areas can be designated to raise funds for particular types of development.

²⁶ This involves mechanisms such as a reduction in rates for certain types of development or a freeze in the rateable value of properties for a specified time.

²⁷ These may involve the state underwriting certain types of development that have the potential to transform space

²⁸ All instruments have to be carefully considered in terms of cost-effectiveness, administrative feasibility and the principles of equity and transparency.

²⁹ This may require municipalities to prepare and implement explicit land policies showing how they will use their land assets for maximum benefit.

- Upgrading of strategic intelligence capacity through *inter alia* the progressive improvement of spatial information systems – from local to national³⁰
- Implementation of proposals in Chapter Eight of the NDP such as Spatial Compacts which allow for negotiated responses to spatial conflicts, and Spatial Contracts which bind spheres of government, and other actors to the implementation of plans.
- More attention to the link between environmental management and land development through a “sustainable land management approach”.

6. Concluding Summary

The normative objective of transforming spatial arrangements in South Africa is well established, and is embedded in policies, legislation and plans from the time of South Africa’s transition to democracy until the present. However, despite the intention given to spatial transformation, the purpose of spatial transformation is often vague, and little attention is given to analyzing actual processes of transformation. This report responds to these deficiencies. It argues that “expanding access to urban opportunity” should be explicitly recognized as the key spatial objective of urban policy, although with attention to the co-benefits of expanded access, including greater social cohesion and environmental sustainability.

The report shows that there have been significant spatial transformations since the ending of Apartheid. At the macro-scale there has been a growing concentration of economic output and job opportunities within South Africa’s largest cities. This has been accompanied by a rapid movement of individuals and households into these areas of opportunity, with South Africa’s “inner core” increasing its proportional share of population, and all other areas losing share. This process is, arguably, positive as it brings the population into a stronger alignment with jobs, livelihood opportunities and services, but it does need to be properly managed to ensure that urban areas are able to absorb the growing population in proactive ways.

Spatial processes across South Africa are complex and diverse, and so the report has taken a cross-section of urban areas to explore spatial change. Important findings include the following:

- There is, generally, a sharp decline in the rural populations of predominantly urban municipalities, with local change following the national pattern of individuals moving closer into the core to gain better access to urban opportunities.

³⁰ See the NDP proposal for a National Spatial Observatory.

- Patterns of growth and decline within municipalities are, however, often quite complex and are affected by factors such as road access, new housing developments (often peripheral), low land and servicing costs in areas under traditional authority, and decline of some old suburban areas.
- Urban densities are generally increasing, contrary to international trends of de-densification. This is taking the form of increasing occupancy in inner city and other areas; the development of backyard shacks; the growth of high density informal settlements; the redevelopment of land to higher density in suburban areas; and, the growth of new formal developments at higher densities than the older patterns of suburban development.
- However, again, patterns are highly variable. There are rising densities in many parts of the larger cities, although, even here, with some areas of decline. In other towns and cities, density increase is highly variable with pockets of (mainly moderate) increase in places, but also with static or dropping densities across large areas. There are indications that the formal market has an appetite for higher densities than is sometimes assumed.
- Racial divisions across space are breaking down, although this is not translating proportionately into social integration. There are also sharp limits to the extent to which racial integration across space is possible, given the growing demographic preponderance of a single race group. Historically, black occupied areas remain predominantly black, and other areas such as some inner cities have also become nearly exclusively black, but a degree of integration is happening in middle class suburbs and some working class areas. Integration is driven largely by the growth in the black middle class and its spread from townships into suburbs. Again, there is variation and complexity. The spatial extent of white dominance is shrinking across almost all municipalities, but the rate and pattern of shrinkage depends in part on the changing demographic composition of localities.
- Patterns of economic activity are also changing across South Africa's towns and cities, although with considerable variance between municipalities. The most complex patterns are in the large metropolitan areas where there has been a combination of: some inner city rejuvenation; large scale nodal growth on the edge of the city (often structured by the system of freeways); highly dispersed development ("scatteration") within middle and higher income suburbs; and, some medium scale commercial development in townships. Elsewhere, there is often a variant mixture of concentrated development and short-distance decentralization.

The question is what this means for access to the urban advantage by the poor and lower income groups. As indicated, at a macro-level the picture is positive with growing numbers of people located

nearer to jobs and livelihood opportunities. At a local level there is complexity. Although residential densities are mainly increasing in relatively well located areas, there are also new concentrations of population in fairly peripheral areas, often a result of government-planned housing schemes. In some cases densification does not lead to desirable living environments.

The deracialisation of towns and cities is happening selectively, and does not offer the majority of the urban poor much benefit. For those who are able to move into historically white suburbs, however, there is the advantage of higher quality services and infrastructure. Changing patterns of economic activity have diverse outcomes for the urban poor. While there is some movement of activity, particularly in the commercial sector into townships, most new development in the large cities at least is happening in middle and high income areas or on the urban edge, generally well away from the major concentrations of low income residence.

The report does explore particular forms of access that the urban poor have secured (e.g. inner city residence, informal settlement, backyard rental, and participation in informal economies) and also specific interventions by the state that may increase access such as inclusionary housing policies and investment in new transport infrastructure, and reaches the following conclusions:

- Inner cities have emerged as “arrival zones” for the foreign and domestic migrants enabling access to employment and economic activity, and significantly reducing transport costs for the poor, but there are threats to the poor created by gentrification processes that must be managed.
- Informal settlements are also important places of access to the city, especially for the very poor, and are continuing to grow in absolute terms although their proportional contribution to the urban population is generally declining. The policy shift towards in situ upgrading and incremental tenure has yet to show significant results.
- Backyard rental is growing although unevenly across places and is an under-recognised mechanism to support densification in cities. More research is needed to understand the impacts of this phenomenon on infrastructure capacities.
- While studies of access of the urban poor to the city often focus on well-located housing, questions of inclusion and access to land with regard to economic activities, particularly informal trade, are often neglected. Informal trade, and economic informality in general, tends not be explicitly considered in spatial planning policies.
- In the mid-2000s, draft policy was created to encourage property developers to include a level of ‘affordable housing’ in their new developments but the details have never been

properly worked out, and a statutory basis has not been provided. Inclusionary housing remains confined to a few experimental mixed-housing developments.

- There is a growing awareness of the role of formal and informal land markets in constraining and providing land access to the urban poor through the work of organisations such as Urban LandMark. However, very little has been done in practice to use planning and other regulatory systems to enable access to land for the urban poor and state-owned land has been rarely exploited to open opportunities for the urban poor.
- New transport systems, including Bus Rapid Transit, have been introduced to address spatial marginalization but the jury is still out on the extent to which these systems will meet the needs of the poor and too little has been done, to date, to maximize the benefits of these systems in terms of integrating them into the surrounding urban fabric, and in terms of building on their potentials for value capture.

These conclusions suggest that there is a long way to go before we properly leverage the benefits of spatial processes, including residential densification. Some progress has been made since the ending of Apartheid in developing new instruments of strategic spatial planning, and there has been a degree of innovation in the larger municipalities. However, reforms to the planning system that could assist with expanding access have been slow and remain incomplete, while a range of instruments to direct spatial transformation which have been developed internationally, have yet to be explored in the South African context. While there clearly are positive aspects to post-Apartheid experience, and spatial patterns have, arguably, improved in terms of supporting access, there is huge scope for improvement within systems and processes of spatial governance.

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APPENDICES