A COMPETITIVE ASSESSMENT OF SOUTH AFRICA'S LEADING CITIES — NATIONAL, CONTINENTAL AND GLOBAL PERSPECTIVES

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Abstract

South Africa's cities are focal points in any contemporary snapshot of the country. Their swift transformation within the national landscape means that they now affect or even dominate every other element within it. Its cities and their burgeoning populations have become defining characteristics of the country with their increasing political sway and growing contribution to the national economy. For many people living in cities, their urban affiliation is stronger and more meaningful than an increasingly abstract and distant national affiliation. Cities are important to national branding because they are localised and tangible points where national perception and reputation often originate or are reinforced. For many stakeholders it is city brands that contribute most directly to their perceptions of the national brand in areas such as ease and security of investment, economic status, liveability, tourism, personal interaction or safety and security. This article considers South Africa's largest cities, their competitive positions within the country, in Africa and across the globe, and it does so with a measure of inclusive urbanisation that is relevant to a wide spectrum of South Africa's stakeholders — national and international business and investors, institutions, government and citizens.

1. Introduction

The imprint of the human species in the southern region of Africa is first

evident between 100 and 200 thousand years ago with the first identifiable societies — those of the San — appearing between 25 and 40 thousand years ago (Marean *et al* 2007; Tishkoff *et al* 2009). In this historical context, the country of South Africa is very new. Its geographical area was named 'South Africa' barely a century ago with the unification of its constituent states in 1910, it severed its colonial ties to Britain in 1961 and it only became an egalitarian political system with its first democratic elections in 1994. The country is a very recent phenomenon and its short history is particularly characterised by an extremely swift transformation in two dimensions — demographic growth and urbanisation.

Demographic growth and urbanisation are most evident in the contrast between the provinces of Gauteng and the Eastern Cape. Predominantly urban Gauteng has a rural population smaller than 10 per cent of its total and it has grown organically and through migration by almost a third between 2001 and 2011, with one in ten residents originating outside South Africa. During the same period the predominantly rural Eastern Cape shrank by a quarter of a million people (Donnelly 2012; South Africa.info 2014; Statistics South Africa 2012). Similar patterns are evident throughout South Africa. In the country as a whole, 63 per cent of the population was urbanised by 2011, with the figure expected to reach 71 per cent by 2030 and 80 per cent by 2050, with this shift occurring in a population that is itself growing fast (COGTA 2016; World Bank 2016). Today two-thirds of South Africa's youth live in urban areas (SA Government 2015).

Growth, urbanisation and a predominantly young population are demographic trends that South Africa shares with Africa as a whole. Forty per cent of the continent's population is under the age of 14 and Africa's overall population growth is the highest in the world at 2.4 per cent per year. In 2010 Africa's population constituted 15 per cent of all people on earth and this is expected to reach 25 per cent by 2050, and 40 per cent of the world's population by 2100 (United Nations 2015). These national and continental factors point to strong and continuous urban growth in South Africa in the decades ahead and possibly into the next century.

For many people living in cities, visiting a country for the first time, or simply conceptualising and thinking about a city, city perceptions often dominate or determine their opinion of the broader country in which those cities are located. Perceptions of Athens, New York, Paris

or Lagos often infuse the broader perceptions of Greece, the United States (US), France or Nigeria. Locally, urban affiliation is often stronger and more meaningful than an increasingly abstract and distant national affiliation. Cities are important to national branding because they are, for an increasing number of people, the local, specific, tangible points where national perception and reputation are formulated and reinforced. For many of a nation's stakeholders it is city brands that contribute most directly to their perceptions of the national brand in areas such as ease and security of investment, economic status, tourism, personal interaction or safety and security. This article considers South Africa's largest cities, their competitive positions within the country, in Africa and across the globe, and it does so with a measure of inclusive urbanisation that is relevant to a wide spectrum of South Africa's stakeholders — national and international business and investors, institutions, government and its citizens.

2. Inclusive urbanisation

Rapid urbanisation creates immense challenges in every society where it occurs but this is particularly the case in developing countries. At the same time urbanisation offers significant opportunities. The conditions for successful urbanisation, which are often weakest in developing countries, include: effective governance and coordination at urban, provincial and national levels of government; planning for the long-term; implementation of plans through to completion; support for the business environment; investment in infrastructure, education and skills; and, the assurance of stability, and, law and order.. Without these conditions urbanisation often results in a deteriorating quality of life with traffic congestion, haphazard regulatory enforcement, inadequate basic services, slums, absent or unenforced zoning and high unemployment.

There is sufficient evidence that the absence of these initial conditions leads to poor urban development, but there are also cases that demonstrate the opposite. In Sub-Saharan Africa from 1960 to 1995 the region's economy grew slower than its population for seven out of every ten years, resulting in uncontrolled urbanisation and conditions of widespread poverty in many of its cities (Ndulu 2007; Olamosu & Wynne 2015). Perhaps the best example of the opposite outcome is the case of China, but its exceptional conditions of centralised control with instruments such as the *hukou*[1)] urban permit system and legislated

control of birth rates would suggest that it is not replicable in most developing countries. What is, however, evident in the comparatively successful urbanisation of East Asian countries such as Japan, South Korea, Singapore, Taiwan and, indeed, China, is their adherence to many of the conditions of successful urbanisation with investment-led growth levels and infrastructure investment of over 30 per cent of Gross Domestic Product (GDP) during their respective periods of rapid economic growth (Perez 2010; Sarel 1996). Improved infrastructure was in all of these cases essential in lowering logistics and communication costs and attracting investment.

It is possible to understand the divergent route that rapid urbanisation can take by considering the ideas of the demographic dividend and inclusive urbanisation (Gribble & Bremner 2012; Hedrick-Wong & Angelopulo 2014; UNFPA 2016). A growing population yields a demographic dividend where it leads to an expanding working age population that increases the size and sustainability of the economy through work, consumption, savings, investment and ultimately a lower rate of growth in the population. Rapidly growing urban populations may inversely, however, deliver a demographic burden. Swift urbanisation does not deliver positive yields unless there is commensurate investment in the urban youth — in health, education, productive employment and the economy. The absence of this investment inevitably results in growing unemployment and the ultimate consequences of unemployment.

The management of urbanisation determines in large part whether cities and their broader societies enjoy a future of prosperity with a growing population that provides the dividends of growth, or a future in which the growing ranks of the unemployed live in cities with inadequate services, haphazard governance, informal housing and scant opportunity. The challenge is how to ensure that expanding, young urban populations are demographic dividends, not demographic burdens. With South Africa's rate of urban growth and the stirrings of discontent around unemployment, service delivery or student fees, it is clear that the country's cities are at the frontline of this challenge. South Africa's rapid urbanisation is at a critical point that will lead it down one of two paths: inclusive or exclusive urbanisation.

The concept of inclusive urbanisation is related to that of inclusive growth where rapid economic growth is an essential condition in the alleviation of poverty. It relies on equality of opportunity in access to mar-

kets and resources, widespread improvement in the standard of living and an open, unbiased regulatory environment for businesses and individuals. It allows for economic diversification, competition and creative destruction, the "process of industrial mutation … that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one" (Schumpeter 1962: 83), if this leads to greater economic opportunity, a level investment playing field and the active removal of constraints to growth (OECD 2016; Samans, Blanke, Corrigan & Drzeniek 2015).

'Inclusive' urbanisation results in cities that evolve as gateways to investment and global markets, as generators of wealth, hubs of innovation and business formation, leading to prosperity and a rising quality of life for their citizens. Inclusive growth sustains economic growth, even in a weak global economy because of strong public-private partnerships, as neither sector can flourish without the help and support of the other. 'Exclusive' urbanisation results in cities that evolve as agglomerations of poverty and congestion, unemployment, rising costs of living and general conditions that choke economic growth. Inflation hurts the poor more than the wealthy; there are growing levels of inequality with wealth lying exclusively with a well-connected few, to the exclusion of the bulk of the population (Angelopulo & Hedrick-Wong 2013).

As a concept, inclusive urbanisation has been operationalised as a constituent set of related constructs: governance, economic well-being and growth, business friendliness, urbanisation, physical connectivity and travel, infrastructure, electronic connectivity and development (Hedrick-Wong & Angelopulo 2011; Angelopulo & Hedrick-Wong 2013; Hedrick-Wong & Angelopulo 2014; Angelopulo 2015a).

Urbanisation and economic development have been linked, although it is recognised that their relationship may not be causal. Differences are evident in developed and developing countries and it would appear that the relationship is partly dependent on more general conditions such as health, education, urban infrastructure and the balance between investments in productive assets *versus* consumption (Shabu 2010; UN-HABITAT 2010). There is strong evidence of a correlation between good governance and equitable, sustainable economic growth (Green 2015; Levine & Zervos 1998; Kurtz & Schrank 2007). A number of economic well-being and growth measures are included as direct economic indicators. Ease of doing business is one of the key con-

siderations in investment, setting up a business, and decisions related to expansion, further investment or business relocation. It has been found to improve cities' ability to attract large scale investment both local and international, but also to support smaller local businesses and to grow new ones (Auckland Council 2013; McFarland 2012; Tajani 2013).

As mentioned in the discussion on the demographic dividend, urbanisation generates significant benefits under specific conditions. Physical connectivity in the form of travel is linked to, or acts as a catalyst for economic performance, and is related to the flow of labour, knowledge transfer, investment, tourism and the movement of goods (Akama & Kieti 2007; He & Zheng 2011; Richardson 2010). The relationship between infrastructure and economic growth, although complex, is widely acknowledged (Bello & Osinubi 2016; Fedderke & Garlick 2008; O'Fallon 2003). Electronic or digital connectivity has been associated with economic growth at all levels of society, with evidence stronger in developing economies and with the introduction of enhanced technologies (Deloitte 2012; Kumar 2009). There is overwhelming evidence of a strong relationship between economic growth and the two social, developmental variables — health and education (Aghion, Boustan, Hoxby & Vandenbussche 2009; Bhargava, Jamison, Lau & Murray 2001; Bloom, Canning & Sevilla 2004; Hanushek 2013).

A positive attribute of inclusive urbanisation is that it meets the needs of a range of stakeholders whose aims may ostensibly be at odds with one another. Inclusivity results in economic benefits for the poor over the medium and long terms; it benefits city administrators because of clarity in urban strategy and resource allocation; citizens benefit from improved infrastructure, employment and regulatory clarity; and both local and foreign investors recognise in inclusivity those conditions that best support business growth.

3. Measuring inclusive urbanisation

The central pillar of inclusive urbanisation is economic growth, but it is insufficient on its own. Inclusive urbanisation can only be realised if its broader conditions are met. The full range of indicators for these conditions shows how successfully a city includes the broader population in the benefits of its economic activity, and the degree to which the city's economy grows to meet the demands of its population. While the pace

of growth is important, cities with smaller economies or with economies that grow at a slower pace may, therefore, rank higher than cities with larger economies or with economies that grow at a faster pace. The relative wealth of individuals or small clusters of individuals within a city is less important than the overall economic and social status of the broad group of its urban residents. So particular cities may have high concentrations of wealth and fall lower in the ranking than cities with less concentrated wealth or fewer wealthy individuals. The broad range of composite indicators of inclusive urbanisation are accordingly defined and weighted in an instrument that can be used to measure the relative position in a scale of inclusivity of one city when measured against any other for which similar information is available.

Governance is identified in six indicators: 'political stability and absence of violence'; 'government effectiveness'; 'regulatory quality'; 'voice and accountability'; 'rule of law' and 'control of corruption'. The indicators for urbanisation are 'population growth' and another titled 'urbanisation'. Business friendliness, economic well-being and growth are indicated in 'GDP *per capita* growth'; 'household consumption expenditure growth'; 'foreign direct investment'; 'doing business' and 'middle class household growth'. Physical connectivity and travel, and electronic connectivity, are identified in 'air connectivity', 'air capacity' and 'mobile subscriptions'. Four infrastructure indictors are included: 'gross fixed capital formation'; 'water'; 'electricity' and 'sanitation'. Of these, the last three are also indicative of the broad quality of life and development across the urban population. Two aspects of development are identified in the final two indicators, 'health' and 'education'. *Appendix 1* specifies each indicator and its data source, and *Appendix 2* describes the measurement and aggregation of the data.

The data is presented along two axes, the first incorporating a set of indicators titled the *alpha* set and the second a set of indicators titled the *beta* set. Individual indicators are assigned to the *alpha* or *beta* sets, except for 'GDP *per capita* growth' and 'household consumption expenditure growth', which are included in both sets of indicators because of their centrality to inclusive urbanisation, with the first set identifying historical values and the second projected values. Finally the data is consolidated to derive a single hierarchical ranking of cities arranged by scores running from highest to lowest. *Tables 1* and *2* illustrate the composite variables of the two sets of indictors and their respective weightings.

***Table 1*: *Alpha* set weightings**	
GDP *per capita* growth forecast	14.3%
Household consumption expenditure growth forecast	14.3%
Health	7.2%
Education	7.2%
Gross fixed capital formation	5.7%
Electricity	2.9%
Sanitation	2.9%
Water	2.9%
Financial account	9.5%
FDI as % GDP	14.3%
Mobile cell subscriptions	9.5%
Air connectivity	4.7%
Air capacity	4.7%

***Table 2*: *Beta* set weightings**	
GDP *per capita* growth	14.3%
Household consumption expenditure growth	14.3%
Political stability, absence of violence	2.4%
Government effectiveness	2.4%
Regulatory quality	2.4%
Voice and accountability	2.4%
Rule of law	2.4%
Control of corruption	2.4%
Ease of doing business	14.3%
Population city growth	14.3%
Urbanisation	14.3%
Middle class households as percentage of total households	14.3%

The instrument has been primarily used to evaluate inclusive urbanisation in research supported by MasterCard to generate a ranking of 80 cities. These include five from South Africa (Cape Town, eThekwini/Durban, Johannesburg, Nelson Mandela Bay/Port Elizabeth and Tshwane/Pretoria[2)]), six from beyond Africa that are comparable to Africa's emerging cities, and the balance from a cross section of leading cities in Africa and its island states. The findings for this article are drawn from 2015, the most recent comprehensive data set available.

4. Findings

	Table 3: 2015 City scores		
	City	**City Scores**	**Degree of inclusivity**
1	***Manila***	***51.4***	High Inclusivity
2	***Jakarta***	***50.7***	
3	***Chennai***	***49.0***	Medium-High Inclusivity
4	Matola	48.6	
5	Windhoek	47.4	
6	***Lima***	***46.1***	
7	Victoria	45.4	
8	Nouakchott	44.8	
9	***Chongqing***	***43.3***	
10	Maputo	43.3	
11	Casablanca	42.8	
12	Libreville	42.6	
13	Lagos	42.6	
14	Abidjan	42.6	
15	Dar es Salaam	42.2	
16	Abuja	41.8	
17	Accra	41.7	
18	Lusaka	41.6	
19	Nairobi	41.4	
20	Kumasi	41.2	
21	Port Harcourt	41.2	
22	Djibouti	40.2	
23	Pointe-Noire	39.5	Medium-Low Inclusivity
24	Gaborone	39.4	
25	Rabat	39.1	
26	Fes	38.8	
27	Tunis	38.6	
28	Cairo	38.3	
29	Kinshasa	38.3	
30	Sao Tome	38.2	
31	Monrovia	38.0	
32	Algiers	38.0	
33	Brazzaville	37.9	
34	Kigali	37.6	
35	Yamoussoukro	37.2	
36	Ibadan	37.0	
37	Addis Ababa	36.7	
38	**Tshwane**	**36.6**	
39	Lubumbashi	36.2	
40	Port Louis	35.7	
41	Dakar	35.3	
42	Tripoli	35.3	

	***Table 3*: 2015 City scores (continued)**		
	City	**City Scores**	**Degree of inclusivity**
43	Kano	35.3	Medium-Low Inclusivity
44	Oran	35.1	
45	Kampala	34.7	
46	**Johannesburg**	**34.6**	
47	Kaduna	34.3	
48	Douala	34.2	
49	Alexandria	34.1	
50	Mombasa	34.0	
51	**EThekwini**	**33.6**	
52	Yaounde	33.3	
53	Freetown	33.1	
54	Khartoum	32.7	
55	Bamako	32.5	
56	Lome	32.4	
57	Kisangani	32.4	
58	**Cape Town**	**31.3**	
59	Maseru	30.4	
60	Ouagadougou	30.0	
61	Cotonou	28.9	Low Inclusivity
62	Lilongwe	28.6	
63	N'djamena	28.4	
64	Luanda	28.3	
65	Niamey	28.0	
66	**Nelson Mandela Bay**	**27.6**	
67	*Sao Paulo*	*27.0*	
68	Huambo	26.2	
69	Banjul	26.0	
70	Antananarivo	26.0	
71	Praia	25.7	
72	Moroni	23.6	
73	Harare	22.2	
74	Bujumbura	20.4	
75	Bissau	19.3	
76	Mbabane	19.2	
77	Conakry	17.3	
78	Malabo	13.4	
79	Bangui	12.9	
80	Asmara	12.3	

In considering South African cities' trajectory of inclusivity, their relative positions in the ranking and their scores over a four-year period are instructive.

***Table 4*: South African cities scores and ranking, 2011-2015**

City	2011		2012		2013		2014		2015	
	score	**rank**	score	**rank**	score	**rank**	score	rank	score	rank
Tshwane	38.4	**20**	38.1	**26**	40.4	**21**	39.2	**29**	36.6	**38**
Johannesburg	37.3	**27**	37.0	**30**	39.4	**26**	38.2	**36**	34.6	**46**
EThekwini	36.9	**29**	37.6	**27**	37.8	**30**	35.6	**43**	33.6	**51**
Cape Town	33.7	**38**	34.2	**40**	36.0	**38**	34.7	**45**	31.3	**58**
Nelson Mandela Bay	34.7	**37**	35.6	**37**	35.4	**40**	33.3	**49**	27.6	**66**

4.1 Global comparison

The scores achieved by South Africa's cities improved slightly from 2011 to 2013 but fell back by 2015, placing them consistently in the 'medium-low inclusivity' range. South Africa's city scores reflect the global trend. The surge in economic activity that began in the early 2000s was reflected in high export-driven and investment growth in low-income countries from 2000 to 2014. Among mineral and metal exporters — two thirds of all low-income countries — growth quadrupled, with Africa sharing in this growth. By 2013, however, Africa's GDP slowed significantly after the drop in commodity prices that coincided with China's slowing growth, a languishing European economy, slow growth in the USA and a drop in the BRICS economies. From 2011 to 2014, metal, mineral and agricultural prices fell, and a year later oil and gas prices plummeted.

These conditions affected all countries across the globe including South Africa. The country's urban inclusivity scores reflect this, but perhaps more illuminating is the overall drop in rank of all South Africa's cities relative to the other cities in the study. Tshwane falls from 20th to 38th position, Johannesburg from 27th to 46th, eThekwini from 29th to 51st, Cape Town from 38th to 58th, and Nelson Mandela Bay from 37th to 66th, becoming the first South African city to fall into the 'low-inclusivity' band, suggesting that there is practically no chance that the city's economy will grow sufficiently to meet the demands of its population or that the fruits of its economy will be more evenly spread in the decade ahead. South African cities have never reached the 'high inclusivity' band and only Tshwane achieved a place in the 'medium-high inclusivity' band in 2013 before reverting to the lower band.

Manila in the Philippines ranks highest with good scores across indicators and a national economy that continued to surge, reaching 7 per cent growth in mid-2016 as President Duterte relaxed business restrictions and cut taxes, building on the economic success of his predecessor and attracting both local and foreign investment (FocusEconomics 2016; Philstar Global 2016). An expressed objective of the Philippines has been to increase inclusivity, and Manila's score and rank suggest that it is in a strong position to achieve this at the level of the city.

Jakarta, Chongqing and Lima attain lower scores than in the past, reflecting conditions in the global economy, but Chennai improves

its score significantly. Of these cities only Jakarta remains with Manila in the 'high inclusivity' band, albeit at a lower level than in the past. Sao Paulo's score plummets from 47.9 in 2014, reflecting the dire economic conditions of Brazil, a sustained drought, political and policy uncertainty. It has the lowest GDP *per capita* growth and household consumption expenditure growth of all cities, African or global.

4.2 African comparison

A significant number of African cities have fairly good chances of improved inclusivity despite the global economic downturn. However, many cities that had previously scored in the high range display diminished potential for urban inclusivity including Accra, Casablanca, Freetown and Kumasi. The best performing African cities fall just behind the better non-African cities but none attain a 'high inclusivity' score.

The cities of Mozambique score at the top of the ranking but their positions are questionable given the falsification of public debt figures that became public knowledge early in 2016, subsequent suspension of foreign aid and the ensuing debt crisis.

Africa's cities have on the whole benefited significantly from the global economic conditions prior to 2014, and many have been negatively affected by those subsequent to 2014. Cities with interests in the export of energy such as those in Equatorial Guinea, Algeria, Nigeria, Angola, Libya and Gabon, and to a lesser extent Cameroon and Ghana, have seen drops in inclusive urbanisation, but lower oil prices have buoyed the positions of net oil importers. The regional effect of the Ebola outbreak in West Africa has been striking but limited in severity to the cities of Guinea, Sierra Leone and Liberia. Unrest, conflict and uncertainty has reduced urban stability in the northeast of Nigeria and its neighbours Cameroon, Niger and Chad, in the Democratic Republic of Congo (DRC), Burundi, Central African Republic (CAR), Somalia, South Sudan, Libya and a broad swathe of the Maghreb. On the other hand electoral democracy has been strengthened in countries like Nigeria, Zambia, Lesotho, Benin, Sudan and Togo. Other than Northern Africa, all other regions have seen significant improvements over the past decade as a result of greater political stability, commodity prices and improved economic policies.

One of the greatest dividends of the past decade's growth in Africa has been the establishment of a growing middle class. Though it

is not dominant in the population mix of most African cities it is nonetheless a crucial link in their transformation. The middle class has increased demand and the supply of services and products, had a major impact on consumption, competition and led to the more equitable spread of social and economic benefits.

The pattern of inclusive urbanisation by region shows that East Africa has the greatest potential for inclusivity in its cities followed by West, Central, North and then Southern Africa.

The African 'medium-high inclusivity' cities are all located in East and West Africa except Casablanca, Libreville and Windhoek. Not all cities in these regions are in the upper half of the ranking, however, with a spread of cities from both regions in the lower levels of the ranking. Southern African cities demonstrate a range in scores, from Windhoek and to a lesser extent Gaborone showing higher inclusivity while Harare, Mbabane and Maseru hold little promise of improved conditions for their populations. Central African cities are all in the low and medium-low range, with the exception of Libreville in the medium-high range. Many cities in East Africa score well, and this is the region with the most promise of inclusive urbanisation.

4.3 National comparison

The only large cities in Southern Africa are South African, and all fall from their earlier levels. Anaemic economic growth combined with growing urban populations support the prognosis that South Africa's cities are more likely, not less likely, to experience greater inequality over the next decade. Johannesburg, the African city with the largest economy, is not expected to generate equitable growth but it is expected to remain the African city with most high income earners up to 2030, when it will probably be overtaken by Lagos and Cairo in economic size (Oxford Economics 2015).

Not all of South Africa's cities fare equally, with an 11-point spread between them. Tshwane is the South African city with the greatest potential for inclusive growth, followed by Johannesburg, eThekwini, Cape Town and Nelson Mandela Bay. The key points differentiating the South African cities are population growth, with Tshwane growing significantly faster than Johannesburg; middle class households as a percentage of all households in the order of Tshwane, then Cape Town; GDP growth *per capita* — generally poor in comparison to all large

cities except Harare — led by eThekwini and then Cape Town; while household expenditure growth is led by Tshwane and followed by Johannesburg. The last significant differentiator is air connectivity. Johannesburg and Tshwane share the airport with the greatest air connectivity in Africa while the other South African cities have airports with far lower connectivity.

It is noticeable that the South African cities Cape Town, eThekwini, Johannesburg and Tshwane are positioned at the bottom half of the 'medium-low' band of inclusivity and in the case of Nelson Mandela Bay, in the 'low inclusivity' band. Their positions are the result of stagnant or decreasing economic growth and household consumption, and the more fundamental problems of labour inefficiency, low productivity, high unemployment, decreasing competitiveness and poor education. It is only in areas of established infrastructure — financial and physical — and relatively high levels of governance, that the South African cities retain the potential to improve the economic wellbeing of their growing populations.

5. Discussion

In order to understand South Africa's urban context it is necessary to recognise its temporal nature. Heraclitus said that no man steps in the same stream twice, for it is not the same stream or the same man that does it. Like the stream, cities are impermanent even if they display the illusion of permanence. Not only are their populations in constant flux, growing and changing, but their populations' opinions, allegiances and priorities change unpredictably. To understand South African cities it is necessary to recognise that they are defined by swift and unpredictable transformation.

For a baby born in Johannesburg in 2016, what will the city look like when he/she turns 21 in 2037? At the current rate of growth Johannesburg will have 13,5 million people, and if growth continues, even at a slower rate, he/she may share the city with 20 to 35 million people before he/she turns 50. The question is not whether large scale growth will occur, because every indication is that it will; the question is simply the margin of error that exists in its forecast. All things being equal, the demand on infrastructure and institutions will increase nine fold over the next 50 years, requiring nine times the number of schools and the training of nine times the number of teachers, with similar multiples for

transport, housing, food, water, hospitals, doctors, nurses and hospital beds. University and tertiary education capacity must increase with the equivalence of seven new universities. These figures will be at current rates of demand, not addressing the inequality that exists today. The difference is that the numbers of the unequal and the disadvantaged will dwarf those of today.

In assessing South Africa's urban trajectory it is evident that the conditions of inclusivity are not being met, with the inescapable conclusion that urbanisation could become increasingly random and unpredictable. South African cities will become less attractive to their citizens, local and foreign businesses, will demonstrate increasing inequality with greater numbers on the economic and social peripheries and an increasingly embattled and isolated elite. The conceptualisation of South Africa's cities by politicians, administrators and many of its citizens appears to be of a constant — perhaps set in images from 1984, 1994, 2004 or 2014 — but with scant recognition of the magnitude of the urban change that is occurring. To plan for the conditions of the past or even the present is futile; it is certainly necessary to conceptualise and plan for a future that at first glance may be unrecognisable and perhaps difficult to comprehend. A number of strategies should be considered.

The strict division of responsibilities and competencies between national, provincial and local levels of government, the different legislative and executive spheres of each, and a system in which each tier is "beholden to the higher", often results in conflict, uncertainty or stalemate (Van Wyk 2012). This constitutional arrangement requires review.

South Africa is often described as parochial (Africa Growth Institute 2008; Heistein 2013; April 2015; Bell 2015). Greater competitive comparison with peer cities is essential to identify shortfalls and solutions. By lifting the view to a more global perspective, the scope of economic opportunity expands beyond the limitations of a single city, and factional collaboration within cities yields greater benefits than conflict over access to limited resources. In order for this to succeed, urban connectivity must increase.

Physical connectivity between South Africa's cities and the urban nodes of Africa is essential if the size of urban economies is to expand. Regional African trade as a percentage of African countries' total trade is a fraction of that attained in Asian, America or European countries' regional trade, and it offers the greatest opportunity for economic growth. Urgency is required in bringing to fruition the promise of the

African Free Trade Zone, and South African cities should actively create the links between the dominant urban nodes in the region. The expansion of information and communications technologies (ICT) and a reduction of their cost in urban centres are essential for urban inclusivity. The *de facto* immobility that exists in national ICT policy and regulation acts as a structural impediment to the international competitiveness of South Africa's urban economies and must be urgently addressed.

Industrial and economic policy must be reconsidered in order to identify and remove constraints on investment. The criteria of inclusive urbanisation are effective points for such a review. The problems that South Africa's cities face are innumerable and appear daunting. An attempt to address all will not succeed. Critical points of intervention must be identified, resourced and seen through to their conclusion. Vital infrastructure, employment generation, law and regulation, health, productive education, and enabling business and investment environments are six areas that should be prioritised. Given the rate of growth that South Africa's cities are experiencing it is necessary to plan for 30 to 50 years' time, not for today. National and urban leaders must conceptualise an urban vision and they must convey it in order to make sense of rapid urbanisation.

6. Conclusion

The fully democratic South Africa is a young country, and since its inception it has been characterised by extremely swift transformation in two dimensions — demographic growth and urbanisation. Today, two-thirds of South Africa's youth live in urban areas, and by 2050, 80 per cent of the country's population will be urban.

For this dominant and growing segment of the South African population, perceptions of South Africa and the South African brand are, therefore, filtered through an urban lens. The South African urban experience is, for many, their core experience of South Africa. This article has assessed the urban experience in South Africa's largest cities from the perspective of inclusive urbanisation — equality of opportunity in access to markets and resources, widespread improvement in the standard of living and an open, unbiased regulatory environment for businesses and individuals, economic diversification and competition.

Inclusive urbanisation is central to the success of growing cities, and it is particularly so in the developing world. Without it, rapid urbanisation often results in a deteriorating quality of life and growing poverty. The findings of this article indicate that South Africa's rapid urbanisation is at a critical point that will lead it down one of two paths: inclusive or exclusive urbanisation.

South Africa's largest cities showed an improvement in their potential for inclusive urbanisation from 2011 to 2013, but fell back by 2015, placing them consistently in the 'medium-low inclusivity' range of comparative cities in Africa and across the globe. This trajectory may be ascribed to the fall in commodity prices, but perhaps more illuminating is the comparative drop in rank of South Africa's cities in the time covered by this study. Tshwane, the highest placed South African city, falls from 20th to 38th position, and Nelson Mandela Bay, its lowest, falls from 37th to 66th, the first South African city to be placed in the 'low-inclusivity' band with little chance that it will meet the demands of its residents or enjoy greater inclusivity. South Africa's cities collectively experience lower economic growth, labour inefficiency, low productivity, high unemployment, decreasing competitiveness and poor education. In the African context, South African cities do, however, retain high levels of financial and physical infrastructure and higher levels of governance. The conclusion must be drawn that on their current trajectory and despite their strengths, South Africa's cities are more likely, not less likely, to experience increasing inequality and social ills over the next decade.

The position is not similarly negative amongst all African peer cities. A significant number are likely to improve their urban inclusivity. By region, East Africa has the greatest potential for urban inclusivity, followed by West, Central, North and then Southern Africa. Most African 'medium-high inclusivity' cities are located in East and West Africa.

In order to understand South Africa and the South African brand it is essential to understand its cities and their potential for defining — either positively or negatively — the perception of the nation by each of its stakeholder groups. It is necessary to recognise that central to the urban phenomenon is swift and unpredictable transformation, and to recognise that given the current trajectory of inclusivity, South Africa's urban strategy must be reconceptualised. A number of areas for this reconceptualisation are suggested, including the competencies allocated to national, provincial and local government; ongoing competitive com-

parison with global and continental peer cities; connectivity with the urban nodes of Africa; the prioritisation of ICT expansion; integrated industrial and economic policy; and long-term infrastructure planning.

South Africa's inclusive urban growth is central to South Africa's growth and its position relative to its continental peers. It determines how its cities are perceived, and more importantly, how South Africa itself is perceived. Given its rate of urban growth, South Africa stands at a critical point and the choices taken at this time will determine whether South Africa tips towards greater equality and affluence or towards indigence and inequality.

Endnotes

1. 'Hukou' is the legal registration record of households in the People's Republic of China that determines where citizens are allowed to live.
2. The international data sources use South Africa's original city names (for example, Pretoria) but in all cases it is the metropolitan area (Tshwane in the case of Pretoria, etc) that is measured. In this article the metropolitan area names are used.

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APPENDIX 1

DATA

The *alpha* set includes the following data, accurate to October 2015:

• **Gross Fixed Capital Formation as a percentage of GDP** — Value of net fixed asset acquisition in the economy including new value added to the economy rather than consumed and land improvements, plant, machinery, roads, railways, schools, buildings. Multiply by 100 as the data is already a %. Sources: World Bank, World Development Indicators and United Nations (http://data.worldbank.org/data-catalog/world-development-indicators).
• **Electricity** — Percentage of urban population with access to electricity. Doing Business component: a composite measure of the procedures, time and cost for a small to medium-size business to get a new electricity connection for a standardised warehouse with standardised electricity needs. The warehouse is assumed to be located in the largest business city, in an area where electricity is most easily available. Libya uses 2011 for 2012, as 2012 data is not available. Data as is, already indexed. Source: World Bank (www.doingbusiness.org).
• **Water** — Percentage of the population with access to water. Multiply by 100 as the data is already a %. Moroni (2010), Malabo (2006), Asmara (2008), Tripoli (2001) using single point older data due to lack of updates. Source: World Bank, World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).
• **Sanitation** — Percentage of the population with access to sanitation facilities. Multiply by 100 as the data is already a %. Moroni (2010), Malabo (2006), Asmara (2008) using single point older data due to lack of updates. Source: World Bank, World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).
• **Health** — A component of the overall HDI Ranking, the Health Index measures average life expectancy in each country at birth, expressed as an index using a minimum value of 20 years. Source: United Nations (http://hdrstats.undp.org/en/tables/).
• **Education** — A component of the overall HDI Ranking, the Education Index is measured by the adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrolment ratio (with one-third weighting). The adult literacy rate gives an indication of the ability to read and write, while the GER gives an indication of the level of education from nursery (UK and others)/kindergarten (USA and others) to post-graduate education. Source: United Nations (http://hdrstats.undp.org/en/tables/).
• **Financial Access** — Denotes the percentage of respondents with an account (self or together with someone else) at a bank, credit union, another financial insti-

tution such as cooperative, microfinance institution, post office if applicable, including respondents who reported having a debit card, adjusted for urban population. Multiply by 100 as the data is already a %. Source: World Bank, FINDEX.
• **Air Connectivity** — Special cut of the MasterCard Global Destination Cities Project. Measures the number of annual flights to the base city from other cities with each city pair weighted by whether the flight route was domestic (weight:1), intra-regional (weight:2) or inter-regional (weight:3). A base city's Air Connectivity score is the sum of these weighted flight route scores. No scheduled flights out of Yamoussoukro (Ivory Coast). Negative raw scores are set at 0. Divisor is Jakarta-2012. Source: MasterCard Model (http://www.masterintelligence.com/upload/325/262/Insights-GlobalDestinationCitiesIndex-S5.pdf).
• **Air Capacity** — Special cut of the MasterCard Global Destination Cities Project. Measures by number the annual seat capacity to the base city from other cities with each city pair weighted by whether the flight route was domestic (weight:1), intra-regional (weight:2) or inter-regional (weight:3). A base city's Air Capacity score is the sum of these weighted flight route scores. No scheduled flights out of Yamoussoukro (Ivory Coast). Negative raw scores are set at 0. Divisor is Jakarta-2012. Source: MasterCard Model (http://www.masterintelligence.com/upload/325/262/Insights-GlobalDestinationCitiesIndex-S5.pdf).
• **GDP Per Capita Growth** — Projected average real GDP per capita growth at city level. Negative raw scores are set at 0. Divisor is Chongqing (2012). Source: Canback Danglar (www.cgidd.com).
• **Foreign Direct Investment as a percentage of GDP** — Direct investment in production or business by a company from another country. Negative raw scores are set at 0. Divisor is Democratic Republic of Congo-2011. Source: UNCTAD (www.unctad.org).
• **Household Consumption Expenditure Growth** — Projected household consumption real growth at city level. Negative raw scores are set at 0. Divisor is Chongqing (2012). Source: Canback Danglar (www.cgidd.com).
• **Mobile Telephone Subscriptions** — Mobile cell telephone subscriptions as % of population aged 15-64 years old. Negative raw scores are set at 0. Divisor is South Africa-2011. Source: ITU (www.cgidd.com).

The *beta* set includes the following data, accurate to October 2015:

• **Political Stability and Absence of Violence** — Reflects perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Raw index range is from -3.5 to 3.5, transformed to a 0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).
• **Regulatory Quality** — Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Raw index range is from -3.5 to 3.5, transformed to a

0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).

• **Voice and Accountability** — Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Raw index range is from -3.5 to 3.5, transformed to a 0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).

• **Government Effectiveness** — Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Raw index range is from -3.5 to 3.5, transformed to a 0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).

• **Rule of Law** — Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Raw index range is from -3.5 to 3.5, transformed to a 0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).

• **Control of Corruption** — Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Raw index range is from -3.5 to 3.5, transformed to a 0-100 range using a linear transformation. Source: World Bank, World Governance Indicators (http://info.worldbank.org/governance/wgi/index.aspx#home).

• **Doing Business** — Ease of doing business index of regulations divided into 10 components directly affecting businesses, excluding electricity component. Libya uses 2011 for 2012, as 2012 not available. Data as is, already indexed. Source: World Bank, World Governance Indicators (www.doingbusiness.org).

• **City Population Growth** — Growth in city numbers as a percentage of city population. Negative raw scores are set at 0. Divisor is Abuja-2012. Source: Canback Danglar (www.cgidd.com).

• **GDP Per Capita Growth** — GDP *per capita* real growth at city level. GDP *per capita* real growth at the city level. Gaborone, Praia, Moroni, Djibouti, Malabo, Bissau, Maseru, Port Louis, Windhoek, Sao Tome, Victoria, Mbabane, Banjul use urban area figures adjusted to the population of the relevant city. Negative raw scores are set at 0. Divisor is Chongqing (2012). Source: Canback Danglar (www.cgidd.com).

• **National Urbanisation** — Percentage of urban population to total population. Multiply by 100 as data is already a %. Source: United Nations (United Nations, World Urbanization Prospects).

• **Household Consumption Expenditure Growth** — Household consumption real growth at city level. Gaborone, Praia, Moroni, Djibouti, Malabo, Bissau, Maseru, Port Louis, Windhoek, Sao Tome, Victoria, Mbabane, Banjul use urban area figures adjusted to the population of the relevant city. Negative raw scores are set at 0. Divisor is Chongqing (2012). Source: Canback Danglar (www.cgidd.com).

• **Middle Class Households as a Percentage of Total Households** — Households in each city are classified by their socio-economic status as defined by the AMAI.

A/B: Upper Class — This is the segment with the highest material living standards. The profile of the family head of these homes is composed of individuals with an education level of a Bachelor's degree or higher. They live in luxury houses or apartments with all services and amenities.

C+: Upper Mid — This segment contains those with income and/or lifestyle slightly superior to those of the middle class. The profile of the family head of these homes is of individuals with an educational level of Bachelor's degree. Generally they live in houses or apartments of their own, some are luxury homes and they have all amenities.

C: Middle Class — This segment contains what is typically known as middle class. The profile of the family head of these homes is of individuals with an educational level of mostly high school. Homes belonging to this segment are houses or apartments that can be owned or rented with some amenities.

D+: Lower Mid — This segment includes those homes with income and/or lifestyle slightly inferior to those of the middle class. They possess the best living standards among the lower class. The profile of the family head of these homes is composed of individuals with an educational level of junior high or elementary school completed. Homes belonging to this segment are in their majority owned, although some people rent the property and some are social interest homes.

D: Low — This is the middle segment of the lower classes. The profile of the family head of these homes is formed by individuals with an educational level averaging elementary school (complete in most cases). Homes belonging to this segment are owned or rented like, tenement houses and social interest habitational units or they are under frozen rents.

E: Lowest — This segment is not usually included in marketing segmentation. The profile of the family head is of individuals with an educational level of unfinished elementary school. These people usually lack properties, so they live or use other resources to acquire housing. Usually many generations live under the same roof, and they are totally frugal.

For this project we assume the middle class to comprise of levels D+, C, C+. Gaborone, Praia, Moroni, Djibouti, Malabo, Bissau, Maseru, Port Louis, Windhoek, Sao Tome, Victoria, Mbabane, Banjul use urban area figures adjusted to the population of the relevant city. Multiply by 100 as the data is already a %. Source: Canback Danglar (www.cgidd.com).

APPENDIX 2

MEASUREMENT

Inclusive urbanisation is assessed with an instrument that incorporates individual measures for each indicator. The indicators are adapted to, and individually presented, on a 100-point scale, with data that is already indexed on a 100-point scale retained. Where raw scores are the basis of assessment the largest raw score is used as the divisor and set at 100, and in such cases negative raw scores are set at zero. Where data is fractional it is multiplied by 100, and where data ranges from negative to positive it is transformed to a 100-point positive range using linear transformation. Individual criteria are weighted at a full weight of 1 or at fractions of 1.

Geometric averaging rather than the arithmetic mean is used to aggregate scores for the disparate criteria and mutually non-commensurable data of the instrument in a way that addresses any sharp distinctions that may become evident along a single dimension. When aggregating positive numerical values this has distinct advantages that include reducing the way in which a high score along one dimension (of an indicator) can compensate for a low score along another. The geometric mean can also be weighted, in which case the logarithm of the mean is the weighted average of the logarithms of the components. The method is proposed by Potgieter and Angelopulo (in Angelopulo 2015b: 21) in order to further derive a geometric mean that may be used in cases with missing values in the data. Suppose that there are in total n possible component values in the aggregate with associated importance indicators w_1, w_2, ..., w_n. For any specific aggregate, suppose that x_{i1}, x_{i2}, ..., x_{im} are the values actually present (not missing) where $1 \leq i_1 < i_2 < ... < i_m \leq n$ and $1 \leq m \leq n$. Then define an aggregate beginning $exp((w_{i1} ln(x_{i1}) + ... + w_{im} ln(x_{im})) / (w_{i1} + ... + w_{im})) \times (0,5 + 0,5 \times (w_{i1} + ... + w_{im}) / (w_1 + ... + w_n))$ which is essentially a geometric average (weighted) of the values that are present multiplied by a factor that is 1 when all components have a value, and less than 1 when there are missing values. The missing values can cause a loss of up to 35 per cent of the weighted geometric average to arrive at a score. The importance indicators w_1, w_2, ... play a role in the size of this penalty for missing data. The indicators w_1, w_2, ... are allowed any non-negative values and are normalised where necessary since the treatment of missing values requires this in any case, with no utility in requiring them to sum to 1 in the first place.