

Urbanization, structural transformation and rural-urban linkages in South Africa

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Questions



- 1. Take an economy-wide view of urban development**
- 2. What role have urban economies played in the national development process?**
- 3. What are the economic implications of accelerated urbanization?**
- 4. What are the synergies and trade-offs from investing in metro areas, secondary cities, or small towns/rural areas?**

Broad Approach



1. Development requires rising productivity – more output per worker
2. Happens because
 - sectors become more productive
“within sector”
 - the share of workers in more productive sectors rises
“between sector”
3. We want to explore this process, with an added spatial dimension
 - Metros, Cities, Towns, Rural
4. Look at historical experience to inform model then use model to run scenarios going forward

Accounting for Productivity Change



- 1. Standard sectoral decomposition of productivity change**
 - a. Divide the whole economy into sectors
 - b. change in productivity for the whole economy can be decomposed into
 - i. change due to productivity change within each sector
 - ii. change due to reallocation of labour between sectors
- 2. We use the same method to decompose South Africa's productivity change by municipalities**
 - a. divide the economy into municipalities
 - b. national productivity changes because of
 - i. changes in the productivity of municipalities
 - ii. shifts in employment between municipalities
- 3. We further break productivity change within municipalities into sector and reallocation effects**

• Data Considerations



1. We cite QUANTEC as a major source of data
2. Quantec widely criticized for 'constructing' data
3. Need to be careful with this criticism
 - a) Most of their data are SSA, SARB and other data, particularly at aggregate level
 - b) Only when disaggregating to very detailed level 'construction' comes in
 - c) But this is based on control totals that are consistent with higher level.
4. We use Quantec for industry flows at most localized level. The rest comes from Census, QLFS, QES, LCS etc
5. Often only way to get local economic data short of surveys, which are themselves difficult and costly

Stylized Development Trends (1993-2016)



- **Modest economic growth**
(esp. in agriculture & mining)
- **Slow job creation**
(only in services & construction)
- **Rapid urbanization**
(slow rural pop. growth)
- **National poverty is falling**
(i.e., consumption after grants, etc.)
- **No “urbanization of poverty”**
(urban economic growth has at least matched the pace of urbanization)

Growth & Jobs 1993-2016

	GDP	Employ.	GDP/w
All sectors	2.7%	1.4%	1.3%
Agriculture	1.2%	-1.9%	3.2%
Mining	-0.3%	-1.2%	0.9%
Manufacturing	2.2%	-1.0%	3.2%
Other industry	3.1%	2.9%	0.2%
Services	3.4%	2.2%	1.2%

Population 1993-2016

	1993	2016	Growth
National	39.6 mil.	55.9 mil.	1.5% p.a.
Urban	21.2 mil.	36.5 mil.	2.4% p.a.
Urban share	53.5%	65.3%	

Poverty 1995-2011

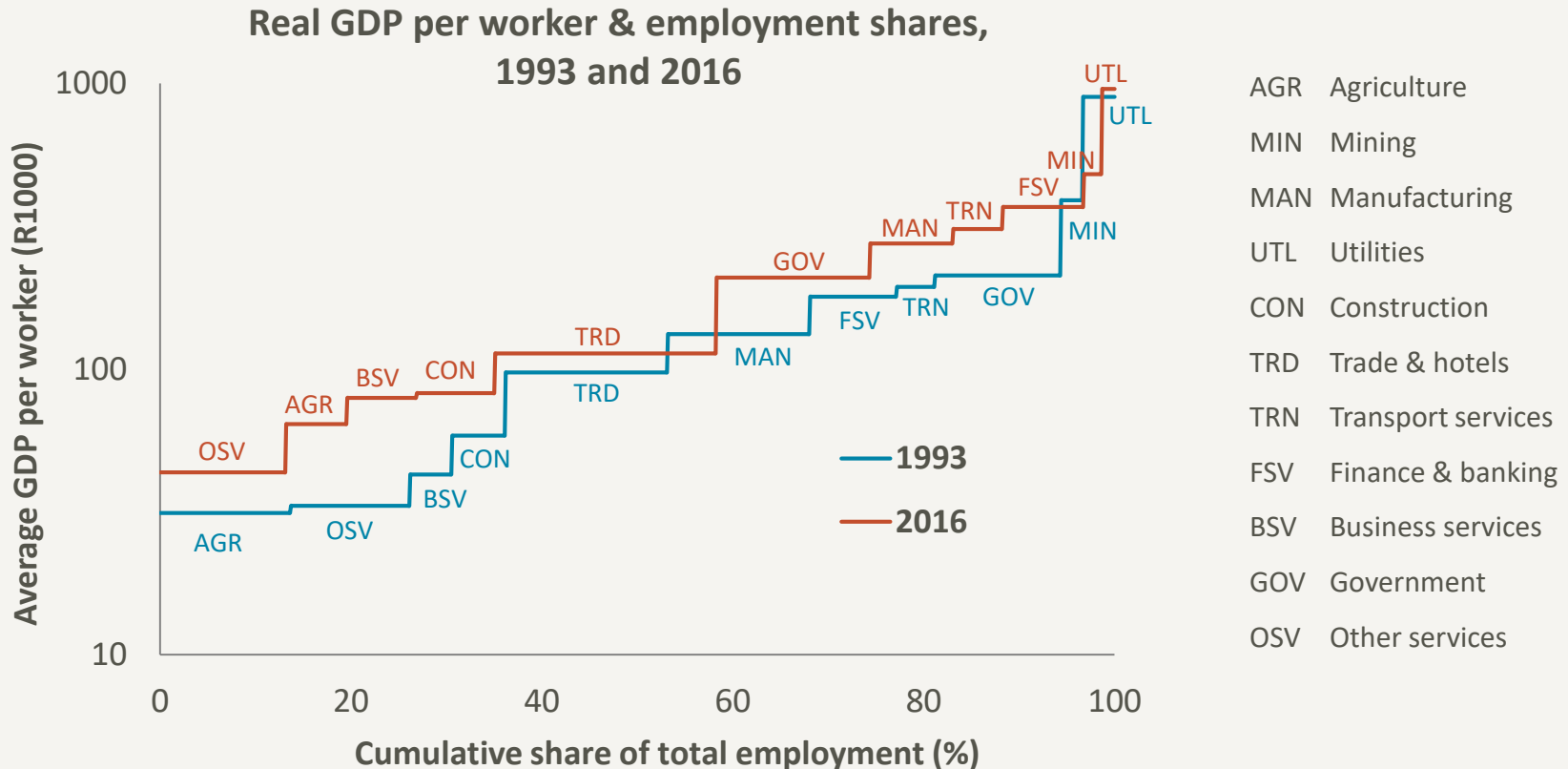
	1995	2011	Growth
National	18.1 mil.	7.9 mil.	-3.5% p.a.
Urban	6.5 mil.	2.7 mil.	-3.8% p.a.
Urban share	35.8%	34.0%	

Poverty Line: US\$3.10 a day (PPP)

Labor Productivity (1993, 2016)



- **GDP per worker varies across sectors, but has increased across the board**
 - Falling employment share in agric. and manufacturing (but rising labor productivity)
 - Rising employment share in trade services (with little change in productivity)



Structural Change (1993-2016)



- Real GDP per worker rose by **R45,158**
- But large within sector gains ...
 - **R56,000**
- ... have been offset by negative structural change
 - **-R10,843**
- **Employment patterns shifted**
 - towards trade services
 - out of lower productivity agriculture
 - and higher productivity mining and manufacturing

Decomposed changes in average GDP per worker, 1993-2016 (2010 Rand)

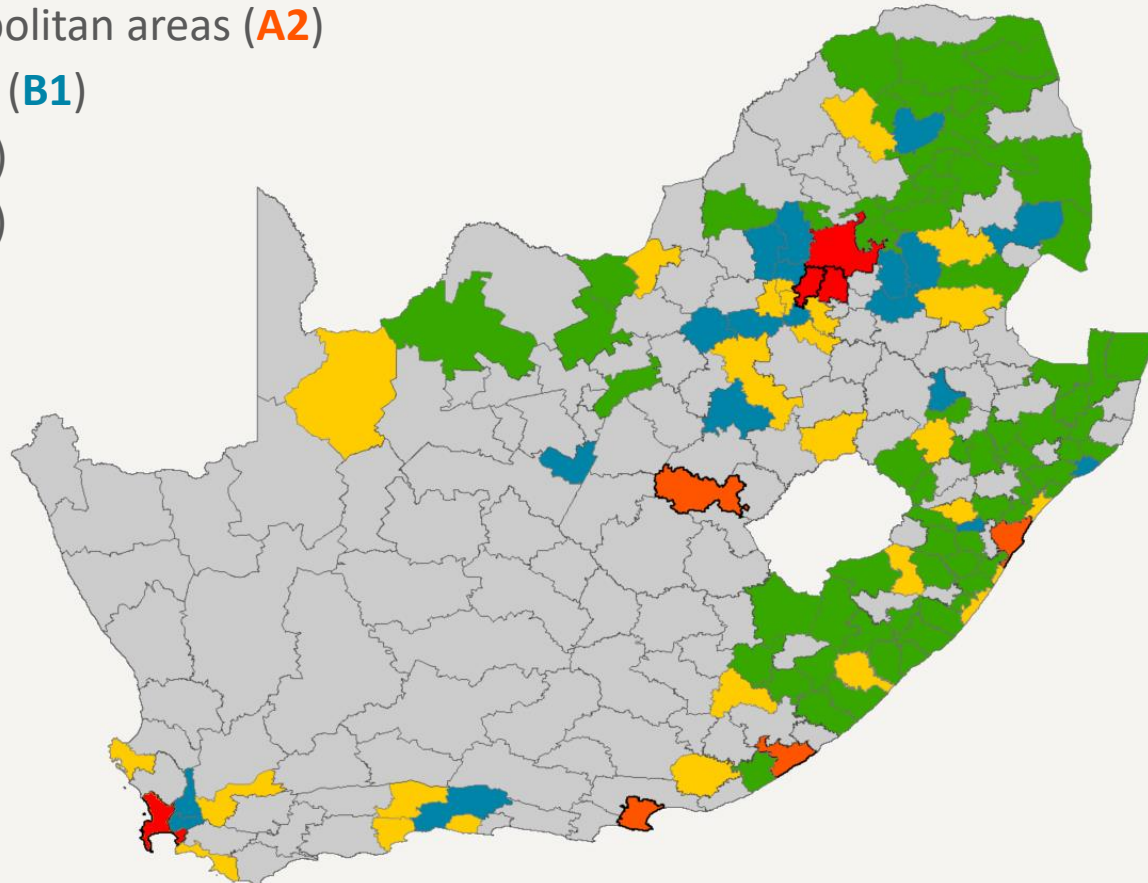
	Within-sector	Betw. sector	Total change
All sectors	56,000	-10,843	45,158
Agriculture	4,417	-4,570	-152
Mining	2,678	-9,273	-6,595
Manufacturing	21,604	-17,535	4,069
Other industry	1,658	1,830	3,488
Services	25,643	18,706	44,348

Data: Quantec SASID | 2010 constant Rands

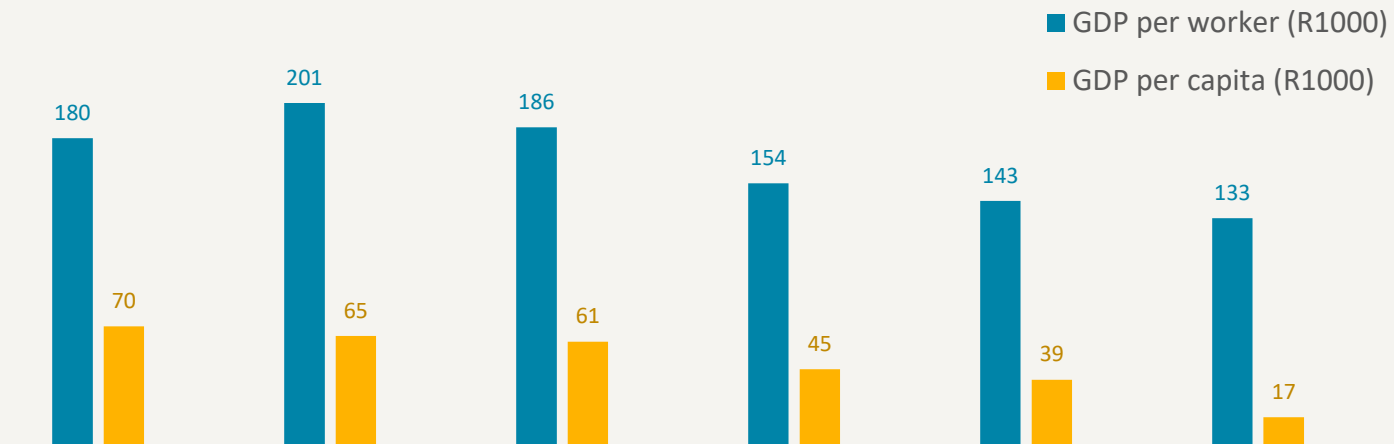
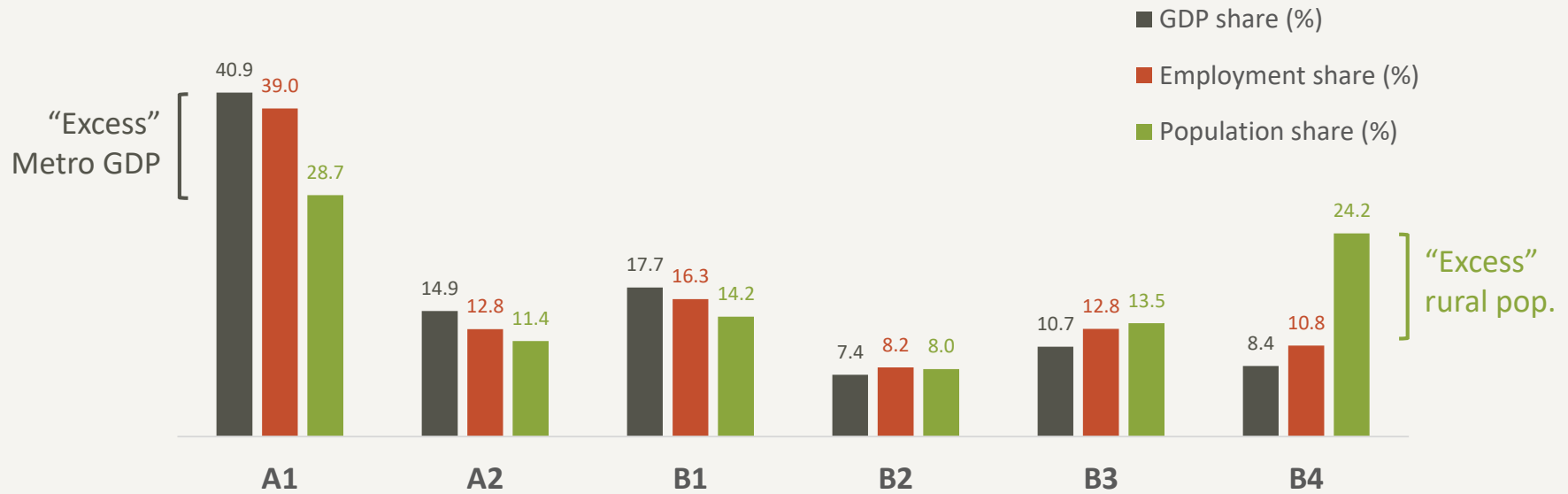
Urban and Rural Areas



- Group municipal areas into six regions:
 - Gauteng and Cape Town metropolitan areas (**A1**)
 - All other metropolitan areas (**A2**)
 - Secondary cities (**B1**)
 - Large towns (**B2**)
 - Small towns (**B3**)
 - Rural areas (**B4**)



Regional Distributions (2016)

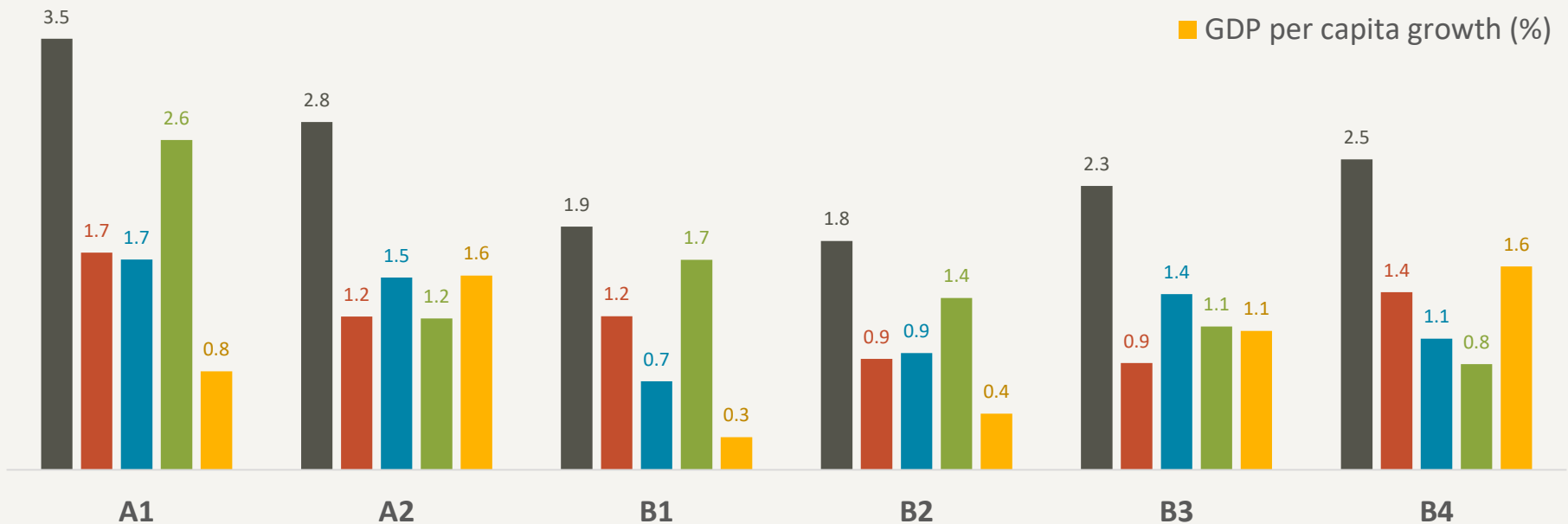


Regional Dynamics (1993-2016)



- **National GDP growth driven by Metro areas (esp. A1)**
 - Slow GDP growth in secondary cities and large towns (B1/B2)
- **Metro-A1 attracts most migrants (rapid pop. growth)**
 - BUT GDP p.c. growth is twice as fast in A2
 - Out-migration explains rapid GDP p.c. growth in Rural-B4

- Annual GDP growth (%)
- Employment growth (%)
- GDP per worker growth (%)
- Population growth (%)
- GDP per capita growth (%)



National rates: GDP 2.7%; Employment 1.4%; Population 1.5%; Urban population 2.4%

Structural Change (1993-2016) (repeat)



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Urbanization and Structural Change



- Same **R45k** GDP p.w. increase
 - Now we separate between-region and between-sector components
- **Employment shifts between regions raised labor productivity**
 - Driven by declining importance of secondary cities and larger towns
 - Rural employment share actually rose even though pop. share fell
- **Urbanization overwhelmed by negative structural change**
 - Urban manufacturing jobs declined
 - Migrants found work in low-productivity services

Change in average GDP per worker, 1993-2016 (2010 Rand)

	Within-sector	Between regions	Between sectors in regions	Total change
GDP	56,000	1,032	-11,874	45,158
A1	26,935	6,365	-6,927	26,373
A2	9,985	-849	-2,083	7,053
B1	8,249	-1,011	-3,446	3,792
B2	4,181	-1,581	-1,319	1,281
B3	4,277	-2,084	1,231	3,423
B4	2,374	192	669	3,235

Questions (and Answers)



1. What role have urban economies played in the national development process?

- Metro Areas are the main drivers of economic growth and job creation
- But Gauteng/CPT are struggling with rapid urbanization and pop. growth
- Rural-urban divide may be narrowing as unemployed people urbanize
- Secondary cities as a group are in relative decline, although some are performing well

2. What are the economic implications of accelerated urbanization?

3. What are the synergies and trade-offs from investing in metro areas, secondary cities, or small towns/rural areas?

Thinking more systemically



- Foregoing descriptions do not look at full interactions between sectors and between regions
 - Looks at movement of people but not of goods
- *“What goes on in the region stays in the region”*
- But sectors and regions buy from and sell to other sectors and regions
- Creates spillovers and feed backs, positive and negative
- Economy-wide modelling emphasizes these linkages

Spatial Economywide Model



- **New computable general equilibrium (CGE) model**
 - Separates economy across the six regions (i.e., sectors, factors, households in representative regions)
- **Captures key mechanisms**
 - Inter-sectoral growth linkages
 - Labor migration between regions (workers and their families)
 - Urban agglomeration and congestion effects
 - Respects public and private capital constraints
- **Links employment and production patterns to household welfare**
- **Simulated alternative pathways for 2016-2035:**
 - Baseline scenario (business-as-usual)
 - Faster urbanization to urban centers without supporting public urban investment
 - Faster urbanization with urban investments, but at expense of other regions

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- Faster national economic growth, but slower national household welfare growth
- Eventual “urbanization of poverty” (although national poverty still declines)

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- Urban investments further reduce national welfare if they displace rural investments
- Smaller growth/welfare trade-offs when investing in secondary cities
- Trade-offs are minimized when urban areas finance their own investments

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