

Finding the jobless: the spatio-temporal variation of South African unemployment trends at sub-provincial level

Gina Weir-Smith

University of Pretoria, 13 March 2015

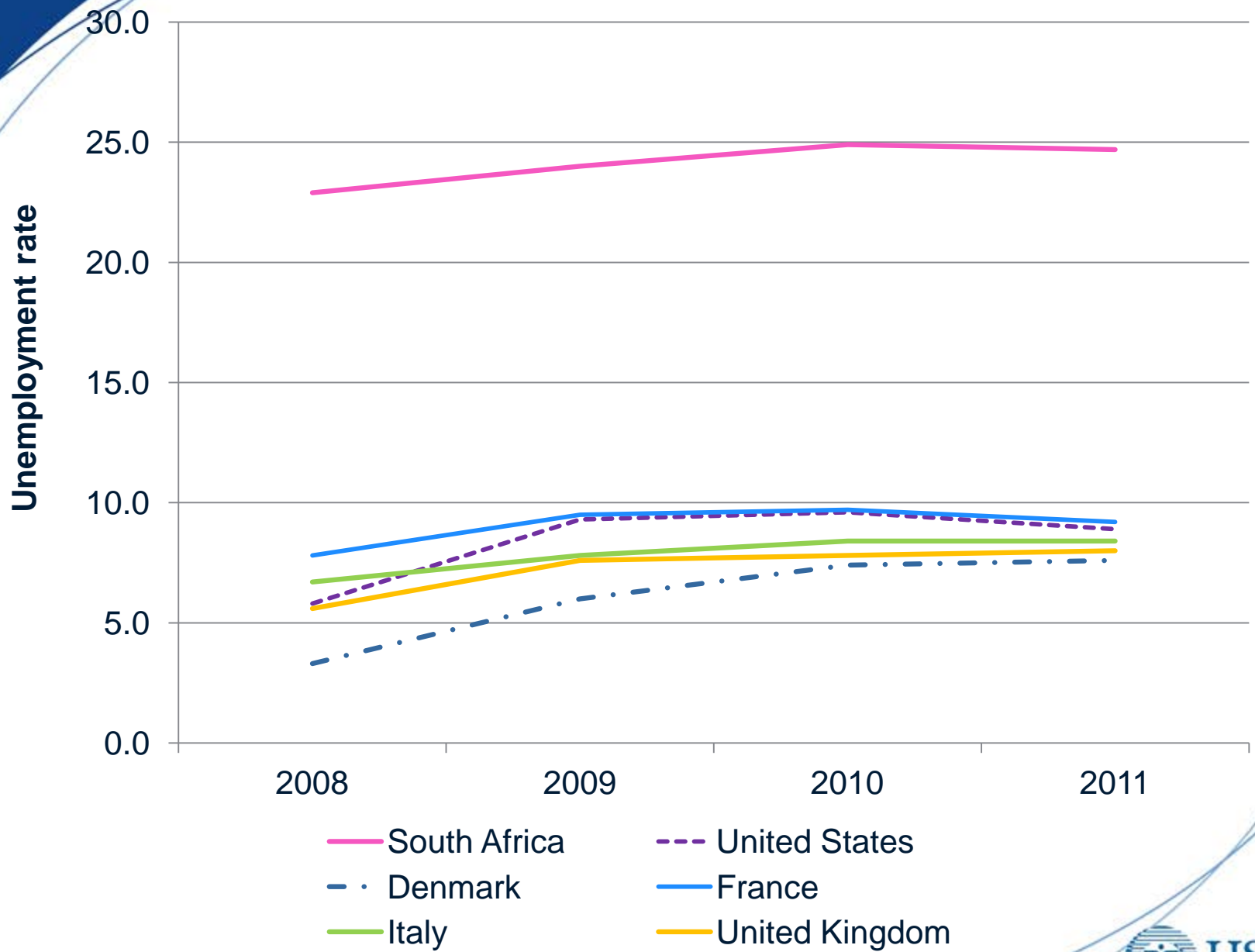


Layout

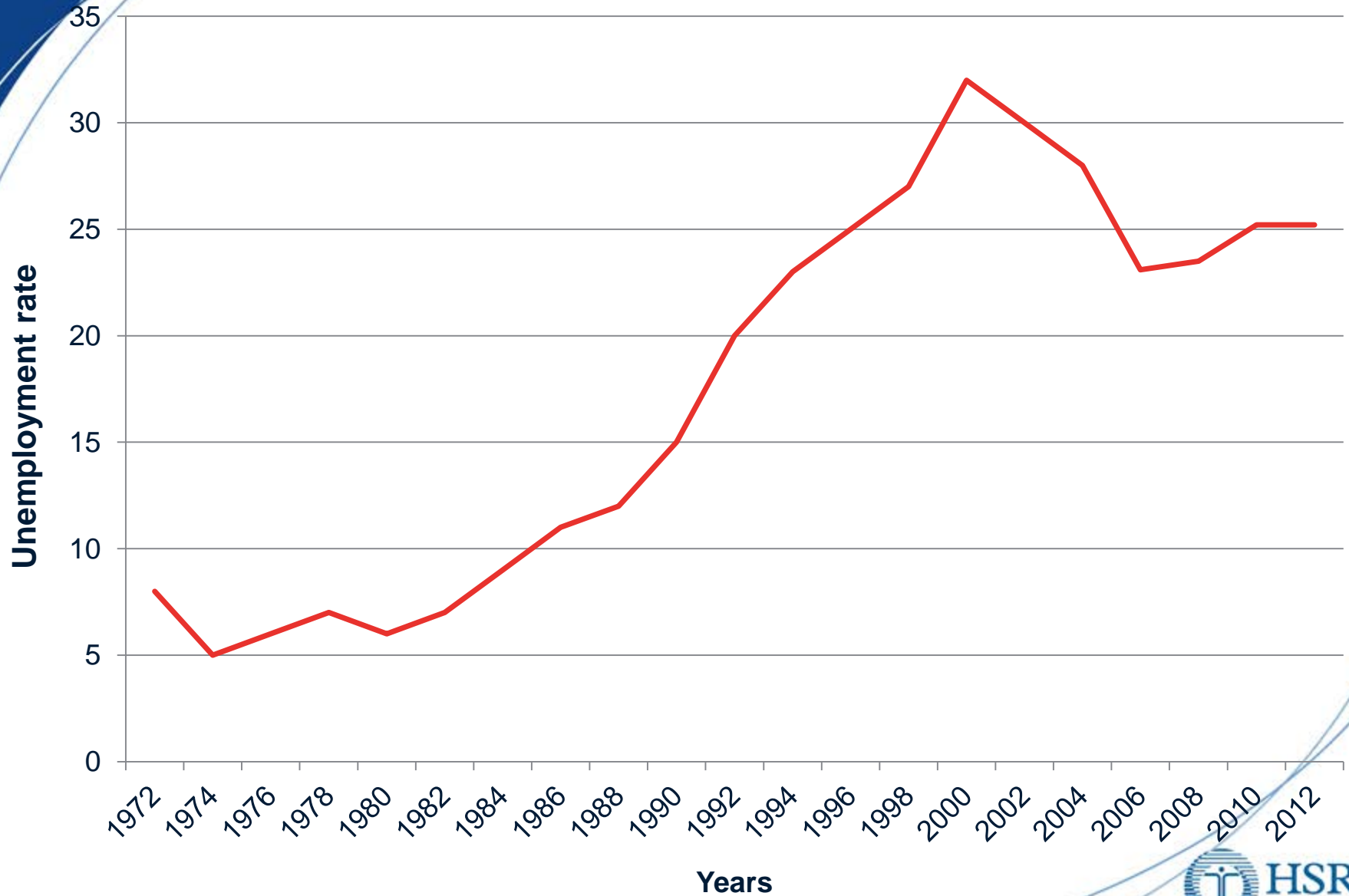
- Why unemployment?
- Challenges with data
- Methodologies and data
- Findings
- Conclusion

Why unemployment?

- Widely used as economic and social indicator
 - especially inequality
- High unemployment rates
 - Currently 24.3%
 - High in comparison to other countries
- Continually increasing
- Building a longitudinal dataset of unemployment



Unemployment trends



Challenges

- Construct a spatio-temporal understanding of the labour market
 - Problems related to attribute data
 - Unemployment not calculated in 1991
 - Changing spatial boundaries
- Potential data sources
 - Quarterly Labour Force Survey (QLFS) and Labour Force Survey (LFS)
 - Census
 - Reporting geographies

Methodology (1)

- Areal interpolation to a common administrative boundary
 - Census 1991, 1996, 2001 and CS 2007
 - 2005 municipalities
- Spatial factor analysis
 - Spatial grouping of municipalities
 - Unemployment levels
- Dissimilarity index between the unemployed and the employed
 - Compares the spatial distribution of two population sub-groups

Methodology (2)

- Classification procedure tries to find natural clusters in the data
- Followed classification of Harmse et al. (2009)
 - Core regions, upward transitional, downward transitional, special problem and district management areas
 - Seed municipality selected
 - Represents the group and the algorithm uses as a starting point to grow groups

Methodology (3)

- Spatial relations
 - Each municipality had at least one neighbour
- Large R^2 values
 - Better discrimination among features
- 15 categories
- $N = 257$

Variable	R^2
Unemployed 01	0.9679
Unemployed 07	0.9661
Unemployed 91	0.9612
Unemployed 96	0.8739

Methodology (4)

- Proportion of unemployed that needs to move in order to obtain an equal spatial distribution
- $D=0.5\sum |P_{ig}/P_g - P_{ih}/P_h|$
 - P_{ig} population of group g in municipality i
 - P_{ih} population of group h in municipality i
 - P_g total population of group g
 - P_h total population of group h
- Value between 0 and 100
- Underlying units were municipalities – results therefore reflected for district municipalities

Findings (1)

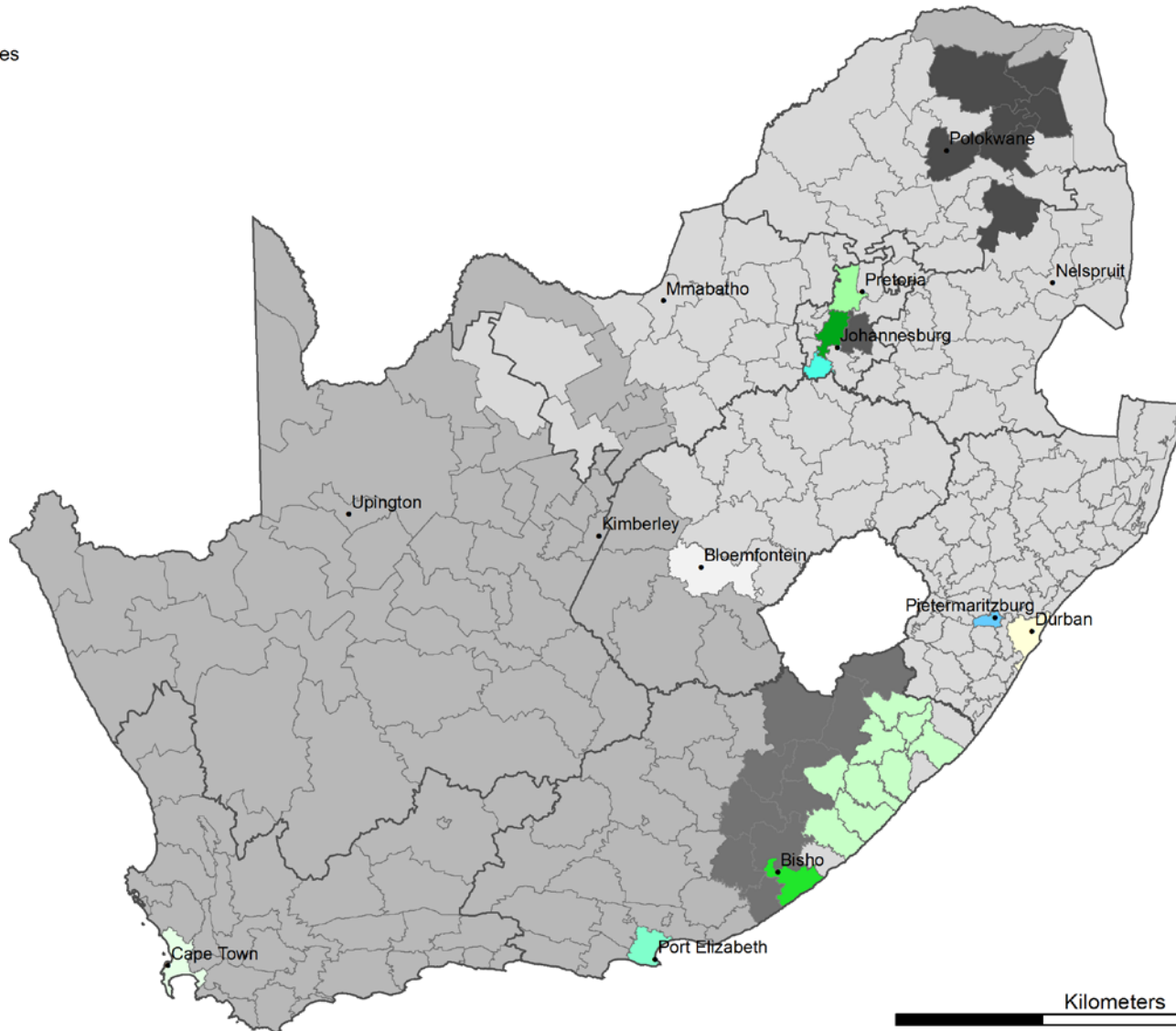
Legend

• Major centres

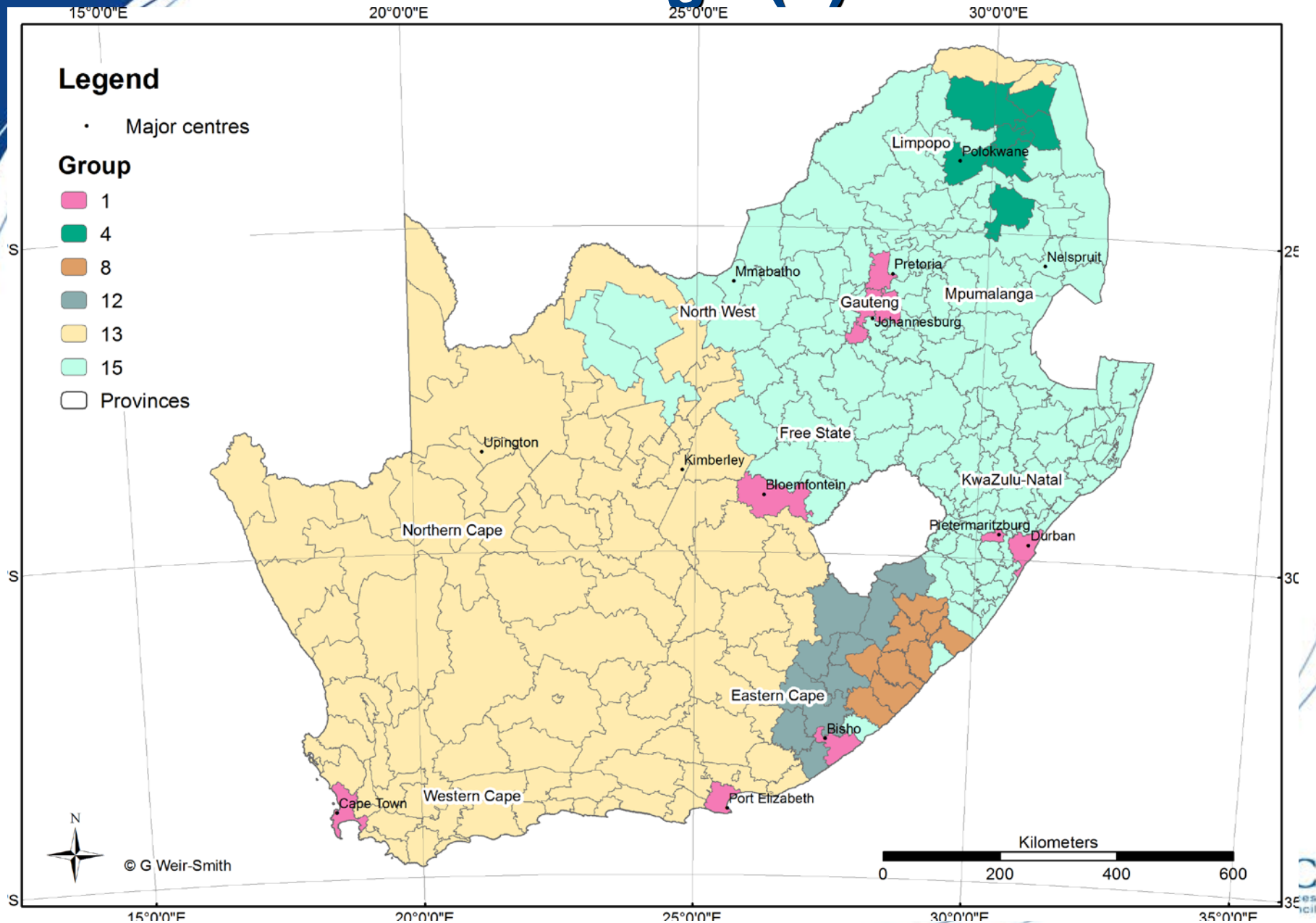
Provinces

Groups

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



Findings (2)



Findings (3)

- Group 1 - municipalities that are currently classified as metropolitan areas, except for Emfuleni and Pietermaritzburg
 - High concentrations of people, wide variety of industries and large number of people with tertiary education
 - Dominant economic sectors: finance, community services and manufacturing

Findings (4)

- Group 4 – northern parts of Limpopo
 - Secondary education the highest level of education
 - However many with completed primary only
 - Mining, manufacturing and community services sectors - largest employers
 - Annual per capita income between R4 900 and R27 300

Findings (5)

- Group 8 – parts of previous Transkei
 - Excludes Port St Johns
 - Similar to “special problem regions”
 - Agriculture and community services – most employment opportunities
 - Highest education level is completed primary
 - Majority stay in rural localities



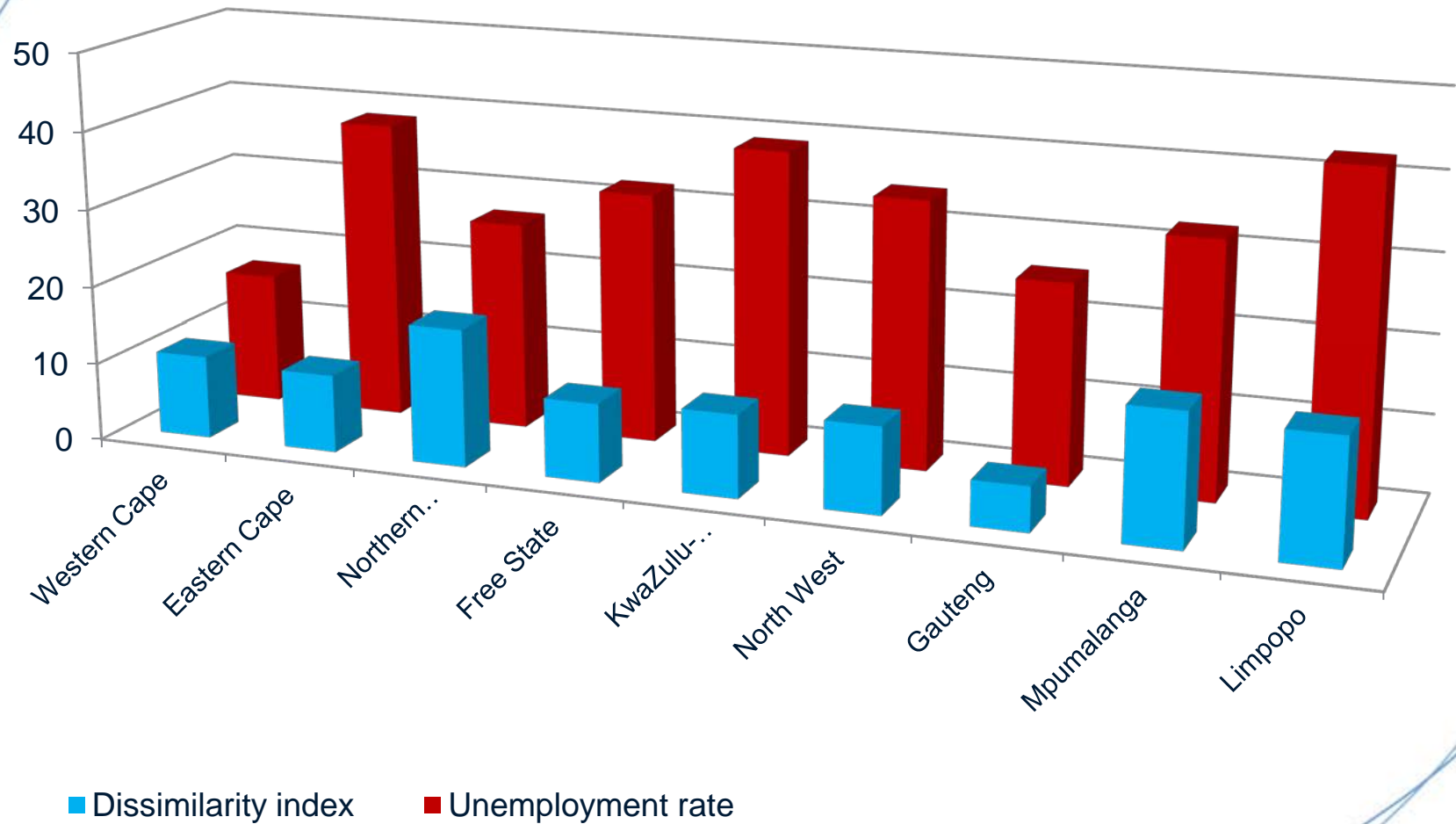
Findings (6)

- Group 12 – parts of previous Ciskei
 - People work predominantly in primary or tertiary sectors
 - Completed primary school
 - Unemployment rate higher than that of Group 8
- Group 13
 - Western parts of country
 - Sparsely populated and predominantly agricultural areas
 - Population densities < 100 people per km²
 - Biggest employers: agriculture, some in mining, manufacturing, trade and community services

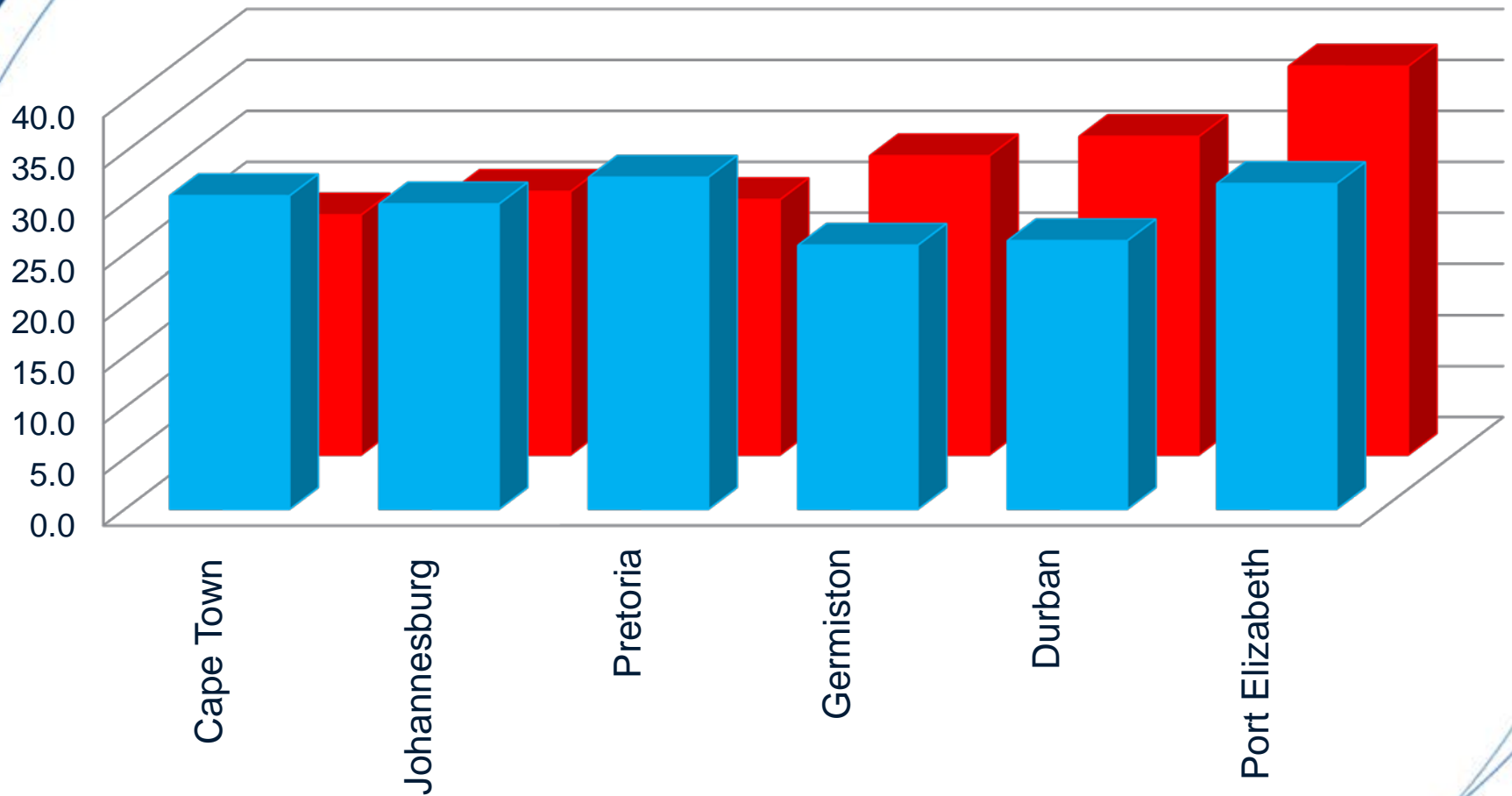
Findings (7)

- Group 15
 - Eastern part of country
 - Higher population density, different agricultural production, more mining activities
 - Per capita income between R1 200 and R83 000
- Relationship between per capita income and unemployment not clearly linear
 - But negative, i.e. as unemployment increases, per capita income decreases

Findings (8)



Findings (9)



■ Dissimilarity ■ Unemployment

Findings (10)

Legend

• Major centres

□ Provinces

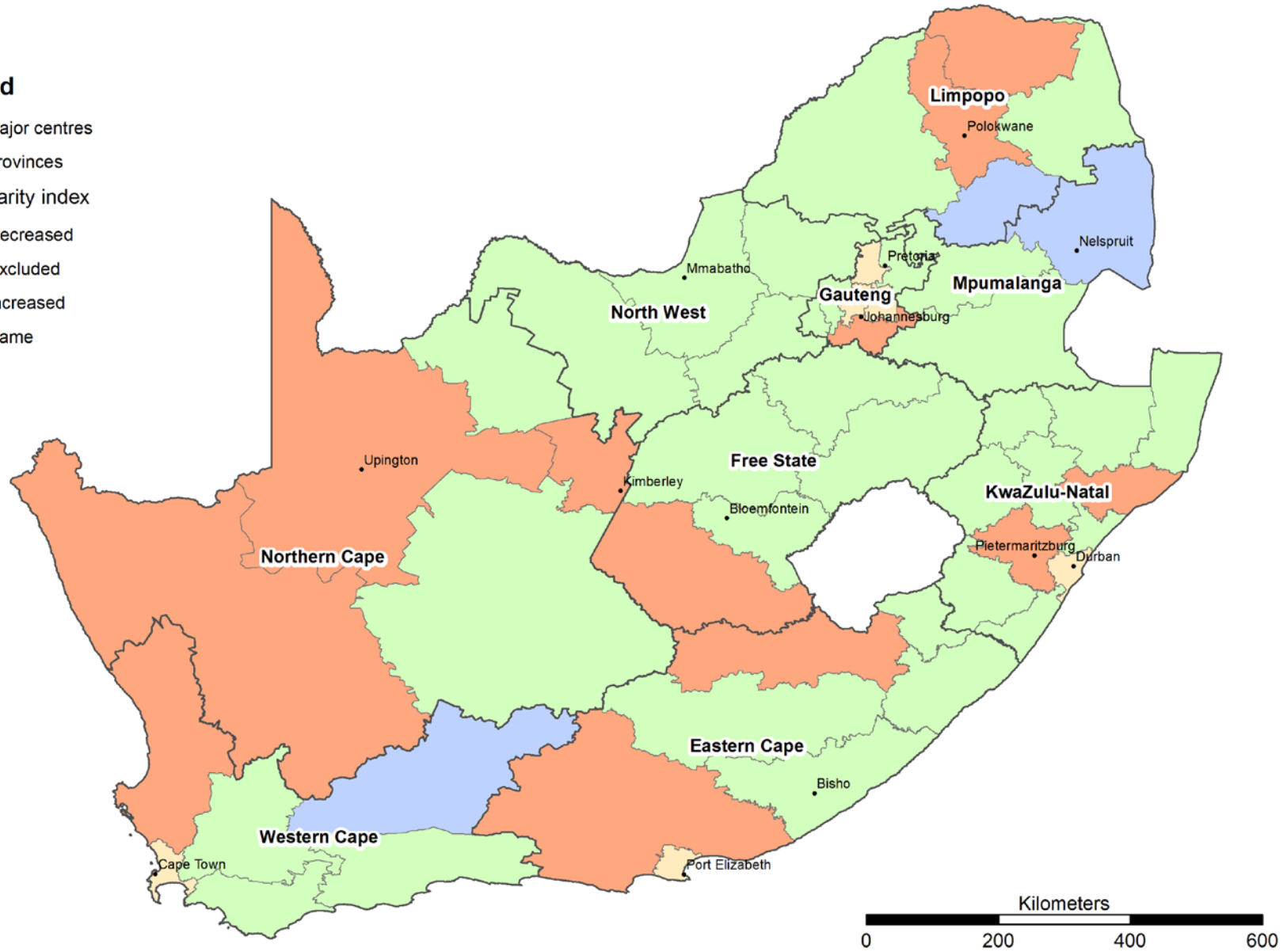
Dissimilarity index

Decreased

Excluded

Increased

Same



Conclusion (1)

- Downward trend in dissimilarity
 - Contradictory to international findings
 - Unit of analysis?
- Dissimilarity high in large provinces
- Measured only once-off in metro's
 - High in labour market disadvantage
 - Concentrated poverty
 - To identify trends
- City rates much higher than district municipality ones

Conclusion (2)

- Clear groups of municipalities i.t.o. unemployment
- Spatial divide between western and eastern part of the country
- Clusters were identified in metropolitan areas
- Persistence of regional disparities in unemployment – policy failure?
- Special focus on all municipalities Groups 8 and 12 and selected municipalities in Groups 4, 13 and 15

Conclusion (3)

- Trend i.t.o. metropolitan areas
 - High dissimilarity
 - Clustered unemployment trends
- Requires special focus
 - Urban population at 59% in 2005 and increasing
- However, unemployment stronger related to rural populations
- Same areas remain devoid of adequate employment opportunities