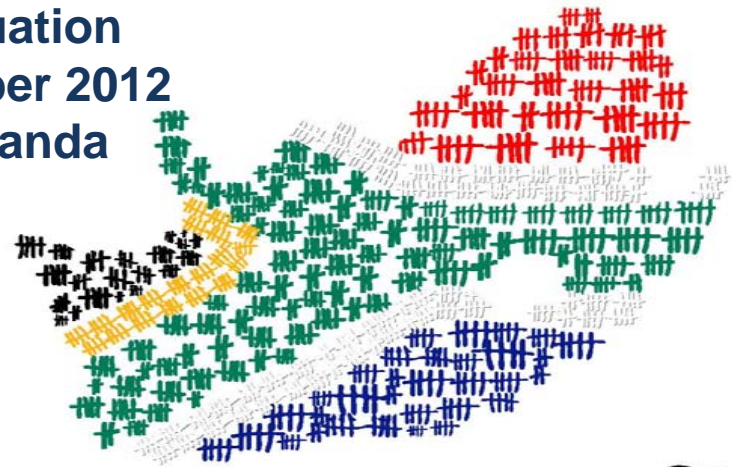


# Evaluation of the South African population census 2011

A presentation for the UN Workshop on  
Census Evaluation  
12 – 16 November 2012  
Kampala, Uganda



**CENSUS 2011**  
*You Count!*



## PRESENTATION OUTLINE

- **The roadmap of census 2011**
- **Objectives of data evaluation**
- **Methods of data evaluation used**
- **Demographic data**
  - Population
  - Fertility
  - Migration and
  - Mortality
- **Lessons learnt**

# THE ROAD MAP OF CENSUS 2011

## ➤ Preparatory activities

- Planning commenced in 2003
- Demarcation involved subdividing the country into 103 576 enumeration areas
- Stakeholder consultations
- Development of the questionnaire
- Development of tabulation plans

## ➤ First pilot – 400 enumeration areas - 2009

## ➤ Second pilot – 700 enumeration areas – 2010

## ➤ Final questionnaire design – about 88 questions

- Questionnaire A - housing units
- Questionnaire B - transit populations e.g. homeless and passengers in airports
- Questionnaire C - institutional populations e.g. hotels, prisons, etc.

## ➤ Enumeration – 9<sup>th</sup> to 31<sup>st</sup> October 2011

## ➤ Data processing – commenced in February 2012

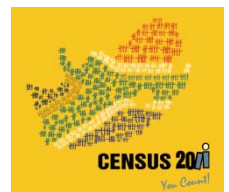
- Edit specifications
- Editing ran parallel with processing after a sample of 5% of total data was available

## ➤ Monitoring and evaluation – assessed both the census and post enumeration survey operations

## ➤ Results release – 30 October 2012



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# OBJECTIVES OF EVALUATING CENSUS DATA

- Evaluate coverage and content errors
- Identify implementation issues that require improvement in future censuses
- Provide a statistical basis for adjusting some census data

## EVALUATION METHODS USED

- A post enumeration survey was conducted– two months after the main census
- Assessment of age patterns and trends implied by the data
- Assessment of comparability with other data such as previous censuses, vital registration and sample surveys
- Statistics were also computed for selected indicators e.g. demographic rates and ratios, etc

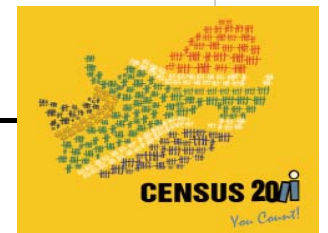
# RESULTS OF THE PES

Net Census Coverage Error: Total and Rate by Province		
Province	Omission rate for persons	Omission rate for households
Western Cape	18.6	17.8
Eastern Cape	12.9	10.3
Northern Cape	13.4	14.8
Free State	10.1	9.4
KwaZulu-Natal	16.7	16.5
North West	14.9	17.0
Gauteng	14.7	15.2
Mpumalanga	15.5	14.4
Limpopo	10.0	9.6
<b>South Africa</b>	<b>14.6</b>	<b>14.3</b>

## OTHER EVALUATION METHODS USED

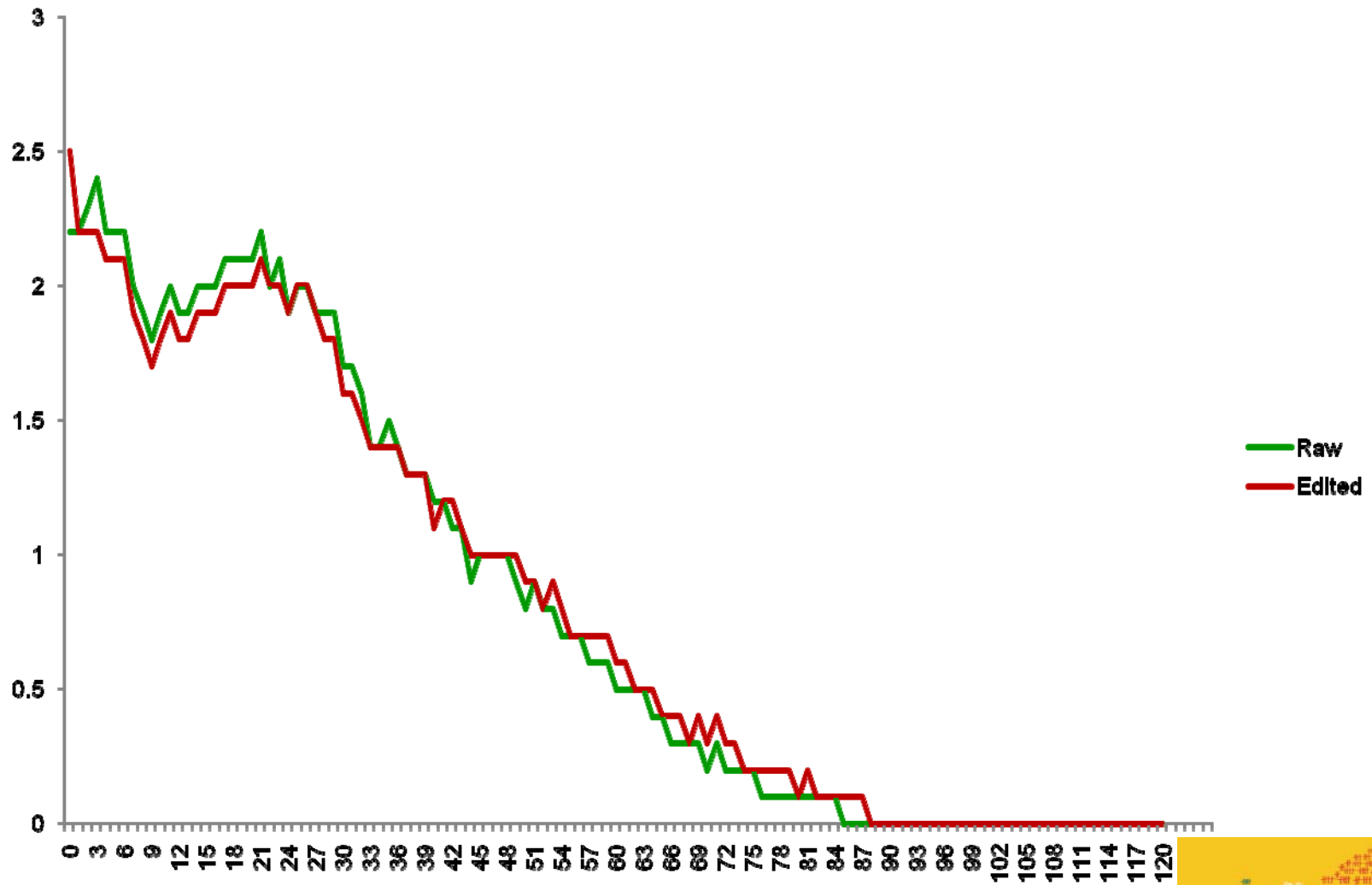
- **The calculation of the demographic equation** – using vital registration births and deaths - emigration figures obtained from other countries abroad whilst immigration ones were obtained from census data
  - Results: 51.4 million
  - Projected 2011 midyear population: 50.7 million (Statistics South Africa)
- **Assessment of age and sex reporting** using the Whipple's, Myers and Bachi indices
  - Accuracy index joint score: 18.2
- **Assessment of fertility responses on children ever born and children surviving**
- **Assessment of completeness of reported number of deaths** – using e.g. the Growth Balance (Brass 1975) and the Generalised Growth Balance methods (Hill 1987)

# RESULTS

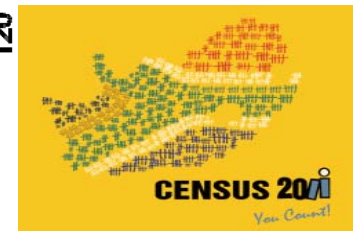




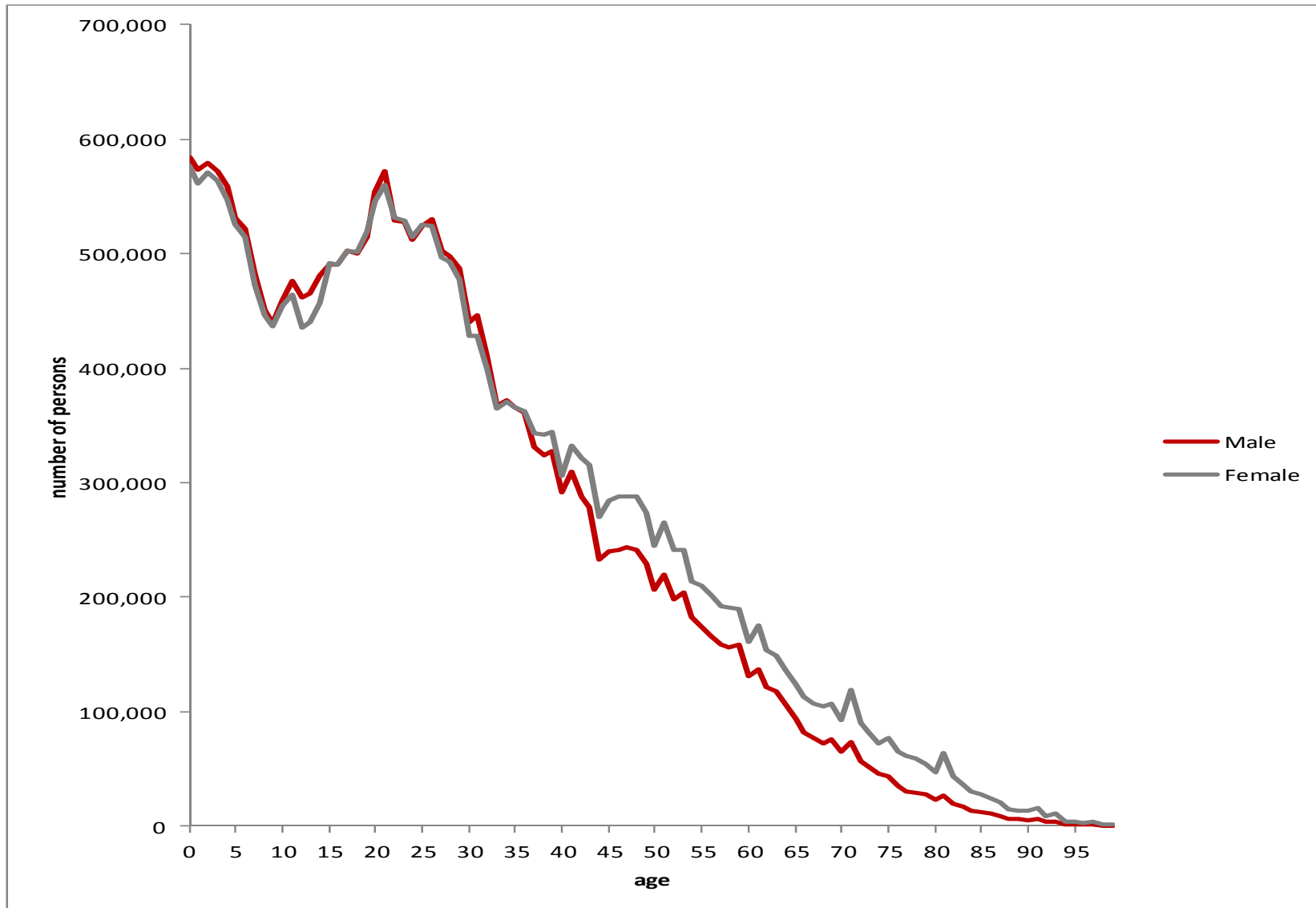
# A COMPARISON OF AGE PROPORTIONS BETWEEN RAW AND EDITED DATA: 2011 CENSUS



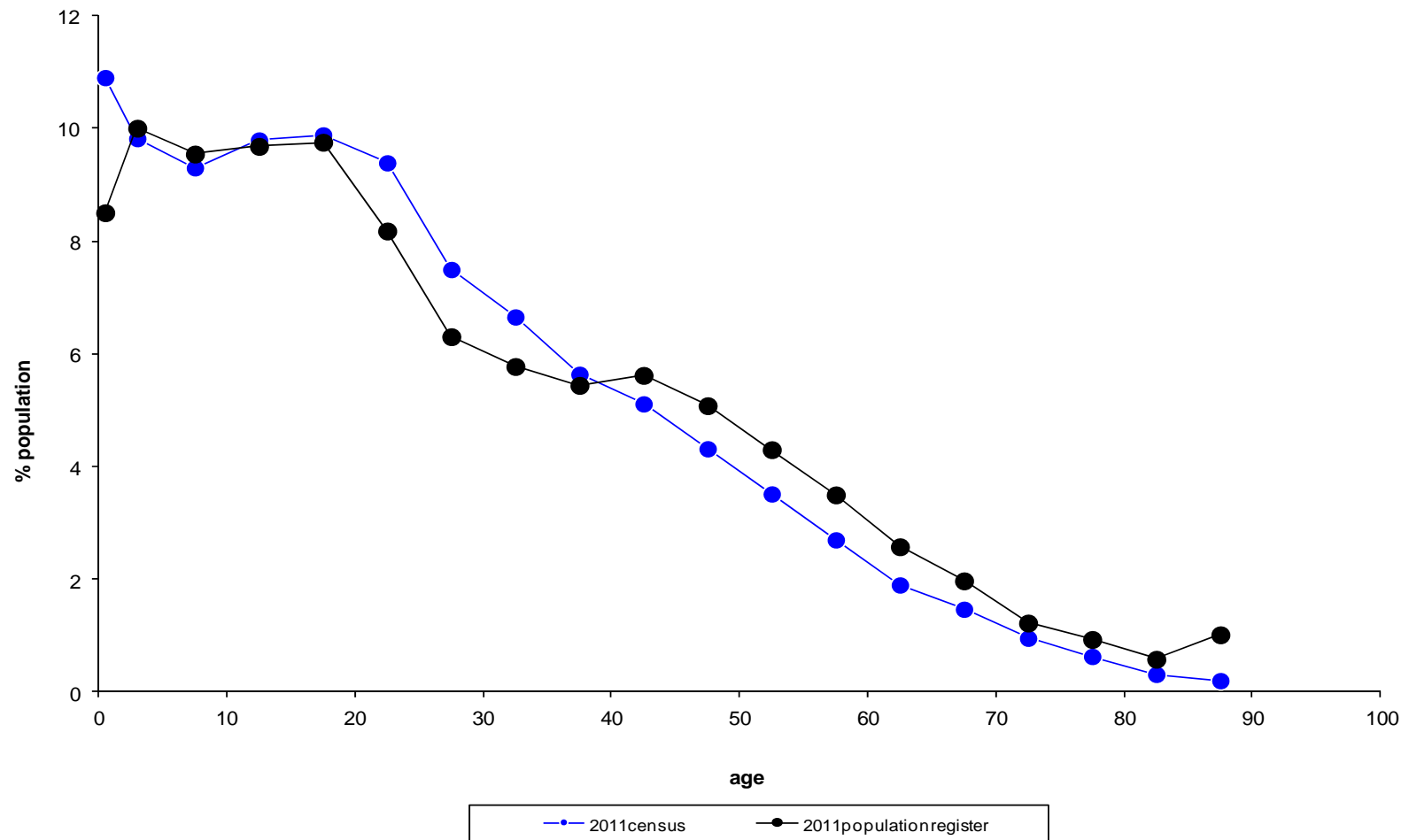
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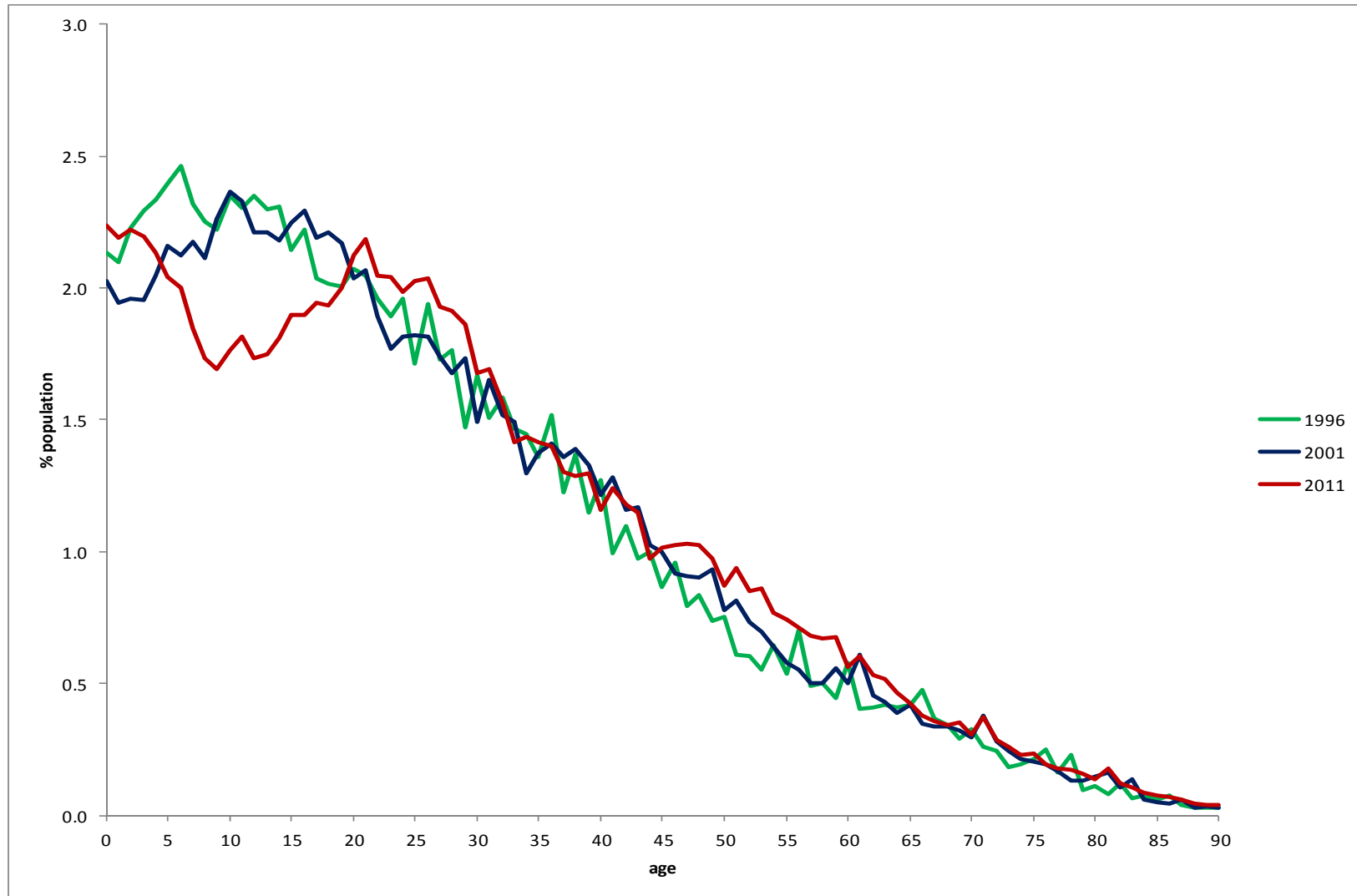
# DEMOGRAPHIC RESULTS OF CENSUS 2011: POPULATION



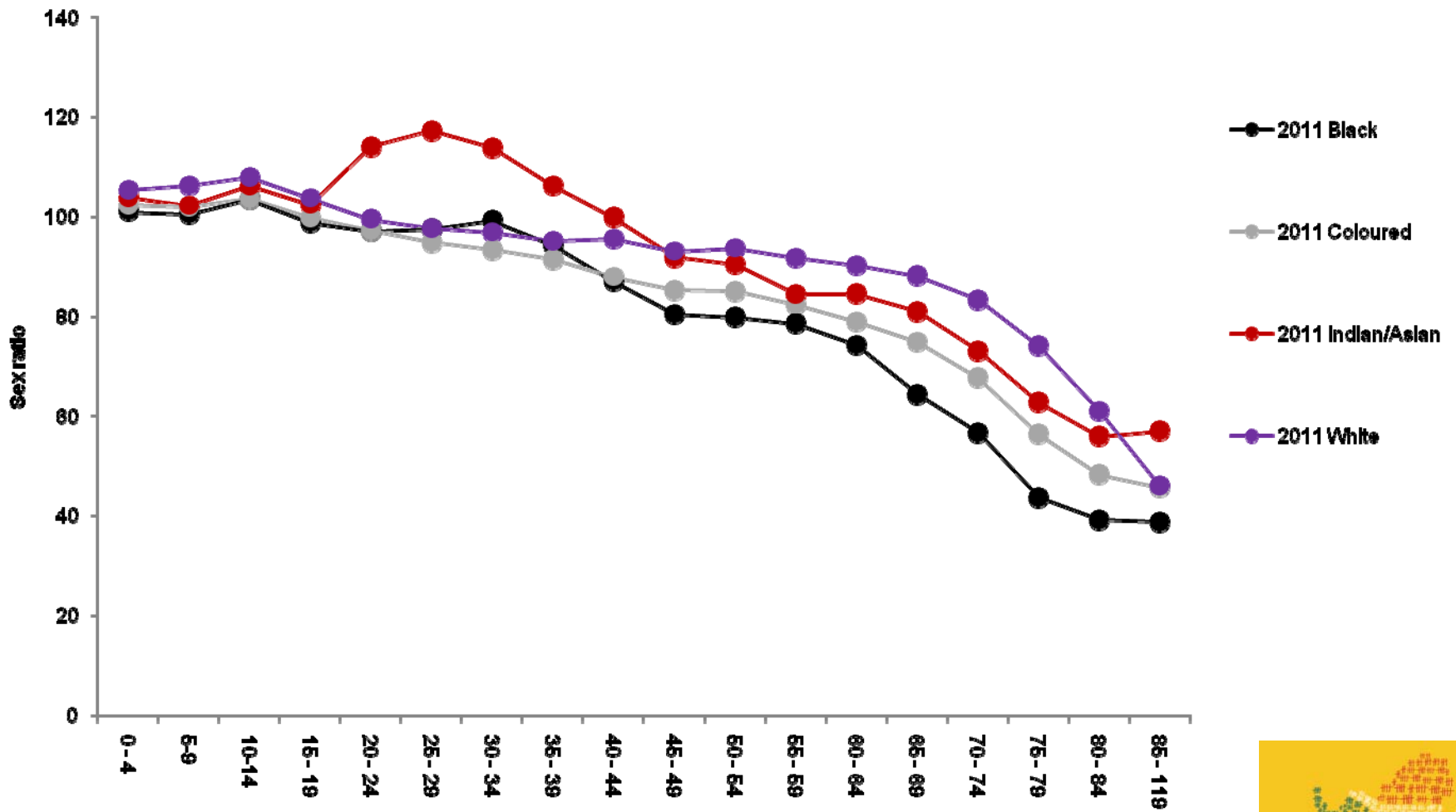
# COMPARISON BETWEEN CENSUS 2011 AND THE POPULATION REGISTER



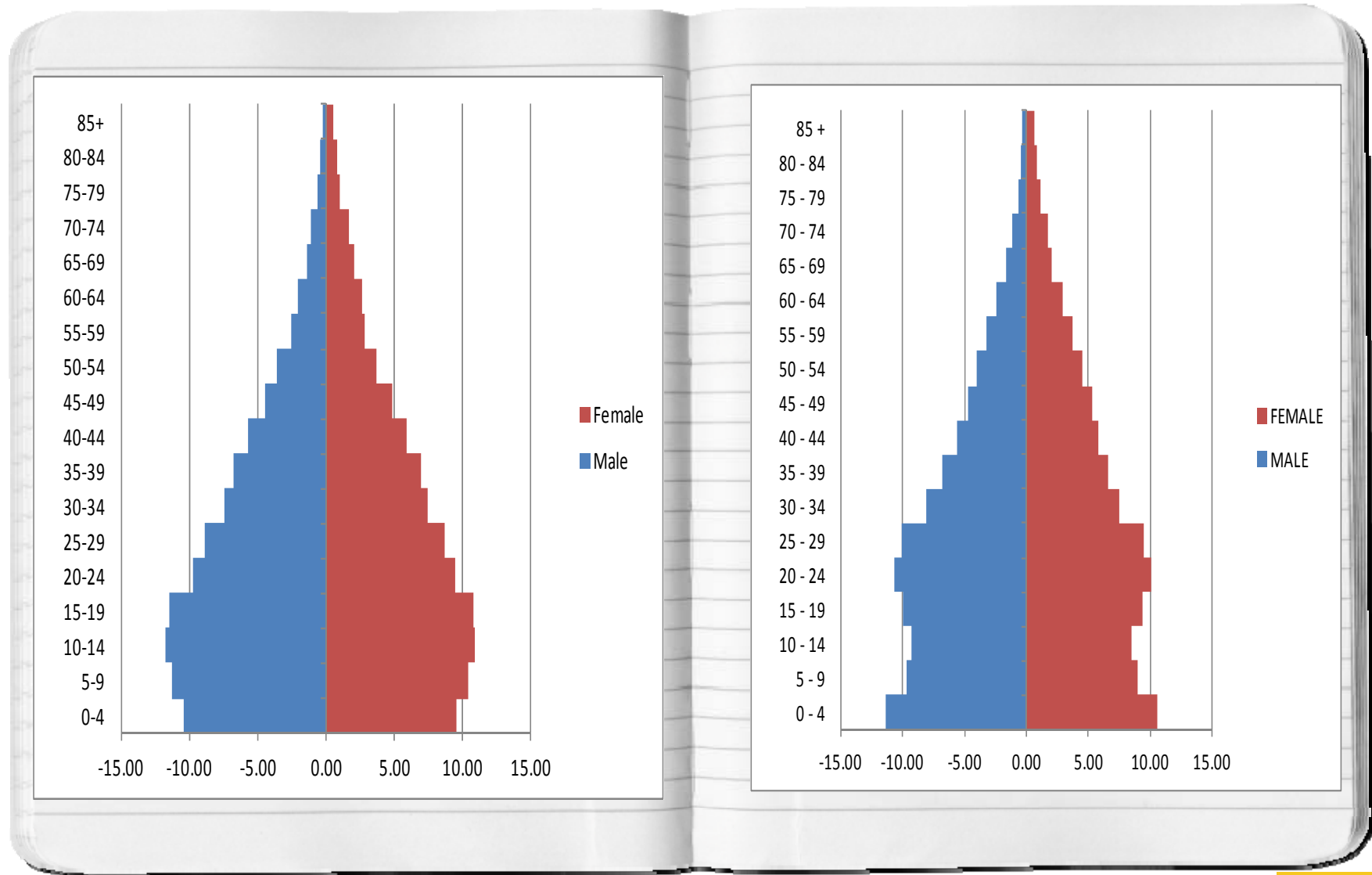
# A COMPARISON OF POPULATION AGE PROPORTIONS



# AGE SPECIFIC SEX RATIOS: CENSUS 2011



# POPULATION PYRAMIDS FOR 2001 AND 2011



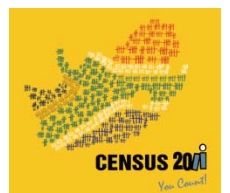
# POPULATION GROWTH RATE STATISTICS

<b>World</b>	<b>1.2</b>
Africa	2.4
Southern Africa	0.7
South Africa	0.6
<b>Intercensal growth rates in South Africa</b>	
1996-2001 (censuses)	2.0
2001-2011 (censuses)	1.4

Source on regional rates: Population Reference Bureau, 2011



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# ANNUAL POPULATION GROWTH RATES BY PROVINCE

Province	1996	2001	2011	Between 1996 and 2001	Between 2001 and 2011	Between 1996 and 2011
Western Cape	3,956,875	4,524,335	5,822,734	2.7	2.5	2.6
Eastern Cape	6,147,244	6,278,651	6,562,053	0.4	0.4	0.4
Northern Cape	1,011,864	991,919	1,145,861	-0.4	1.4	0.8
Free State	2,633,504	2,706,775	2,745,590	0.5	0.1	0.3
KwaZulu Natal	8,572,302	9,584,129	10,267,300	2.2	0.7	1.2
North West	2,936,554	2,984,097	3,509,953	0.3	1.6	1.2
Gauteng	7,624,893	9,388,855	12,272,263	4.2	2.7	3.2
Mpumalanga	3,124,03	3,365,554	4,039,939	1.5	1.8	1.7
Limpopo	4,576,133	4,995,462	5,404,868	1.8	0.8	1.1
<b>South Africa</b>	<b>40,583,572</b>	<b>44,819,777</b>	<b>51,770,560</b>	<b>2.0</b>	<b>1.4</b>	<b>1.6</b>

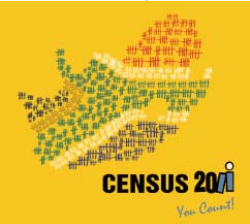




# FERTILITY



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## EVALUATION OF FERTILITY DATA

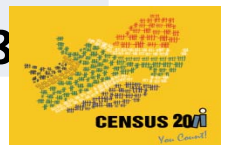
- Census 2011 fertility section consisted of ten questions; nine of these questions are typical questions used to derive current and life time fertility
- One new question was introduced –ask date of death of last child
- The main challenge in this section is to edit the parity questions for consistency, in the current version of the data, there are still cases showing women with more than 17 children
- Data confrontation involved comparing births representing the same period derived from the vital register
- The number of births in the last twelve months is significantly lower than those obtained from the vital register and those that are derived from the demographic section on date of birth
- Parity data show expected decline over time, but also seem to indicate increases at younger ages? OR data defect

## COMPARISON OF BIRTHS IN THE LAST 12 MONTHS BY PROVINCE

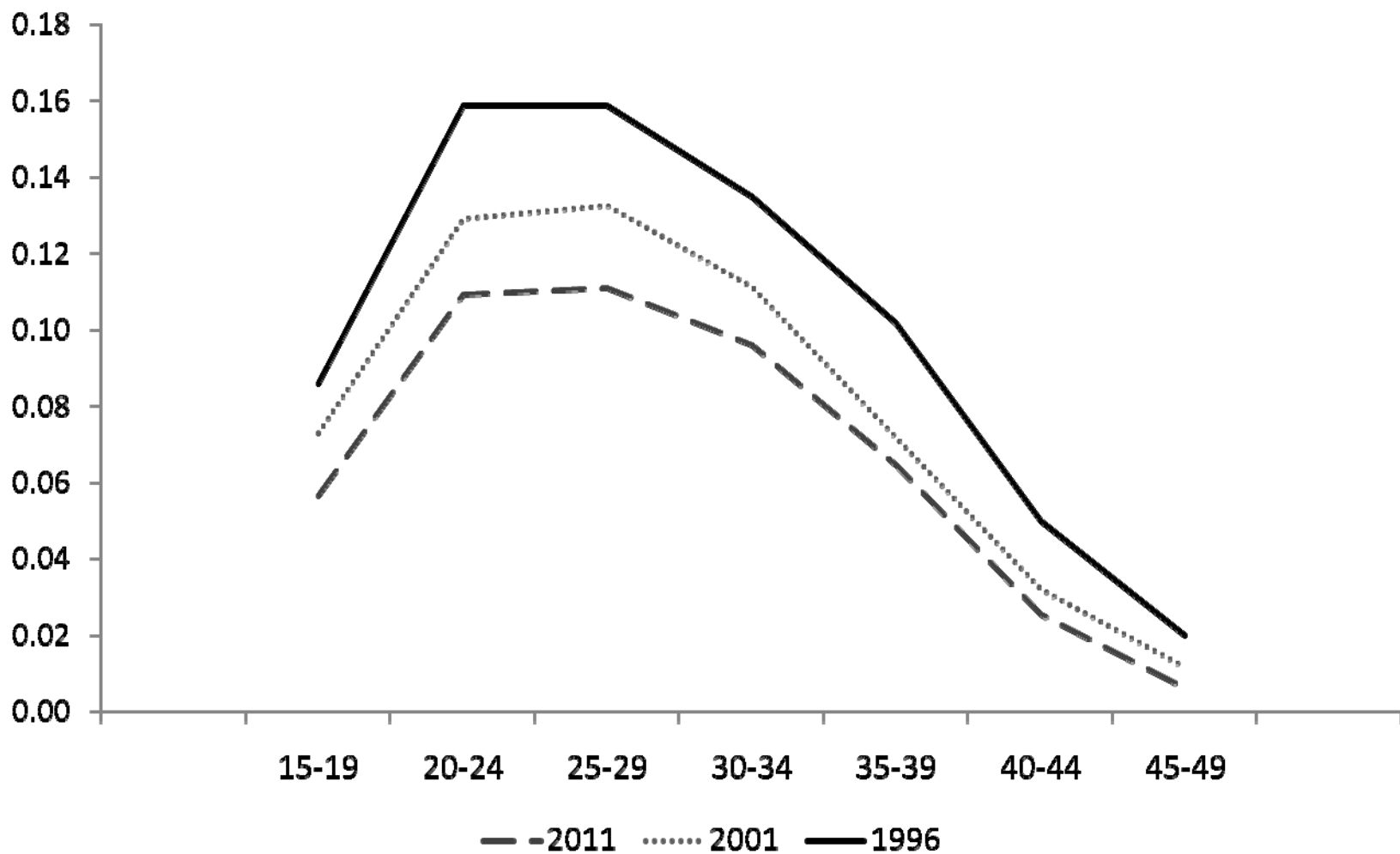
Province	Births in the last twelve months	Born within the reference period	Births provided by vital registration
Western Cape	88,779	96,538	99,368
Eastern Cape	111,448	126,732	114,099
Northern Cape	20,474	21,312	23,308
Free State	49,915	52,626	51,397
KwaZulu Natal	170,549	195,847	193,791
North West	65,581	69,790	73,101
Gauteng	210,212	222,246	186,880
Mpumalanga	74,604	80,469	77,899
Limpopo	116,376	125,662	119,138
<b>South Africa</b>	<b>907,938</b>	<b>991,222</b>	<b>938,938</b>



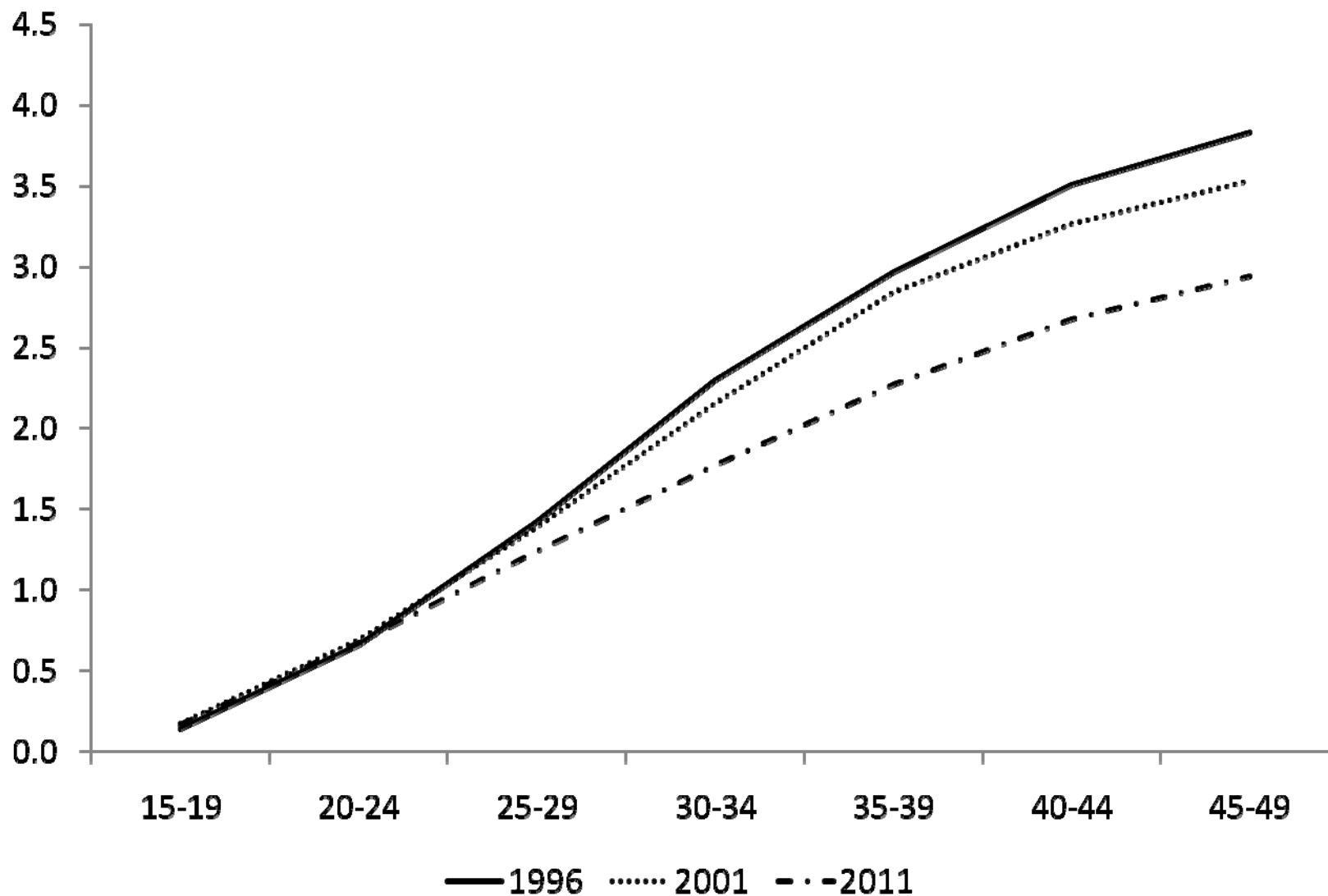
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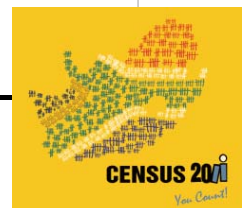
# OBSERVED ASFR 1996-2011



# OBSERVED MEAN PARITIES 1996-2011



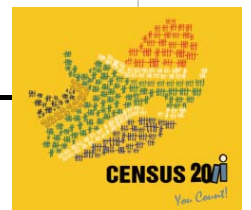
# INTERNAL MIGRATION



# INTERNAL MIGRATION SINCE 2001

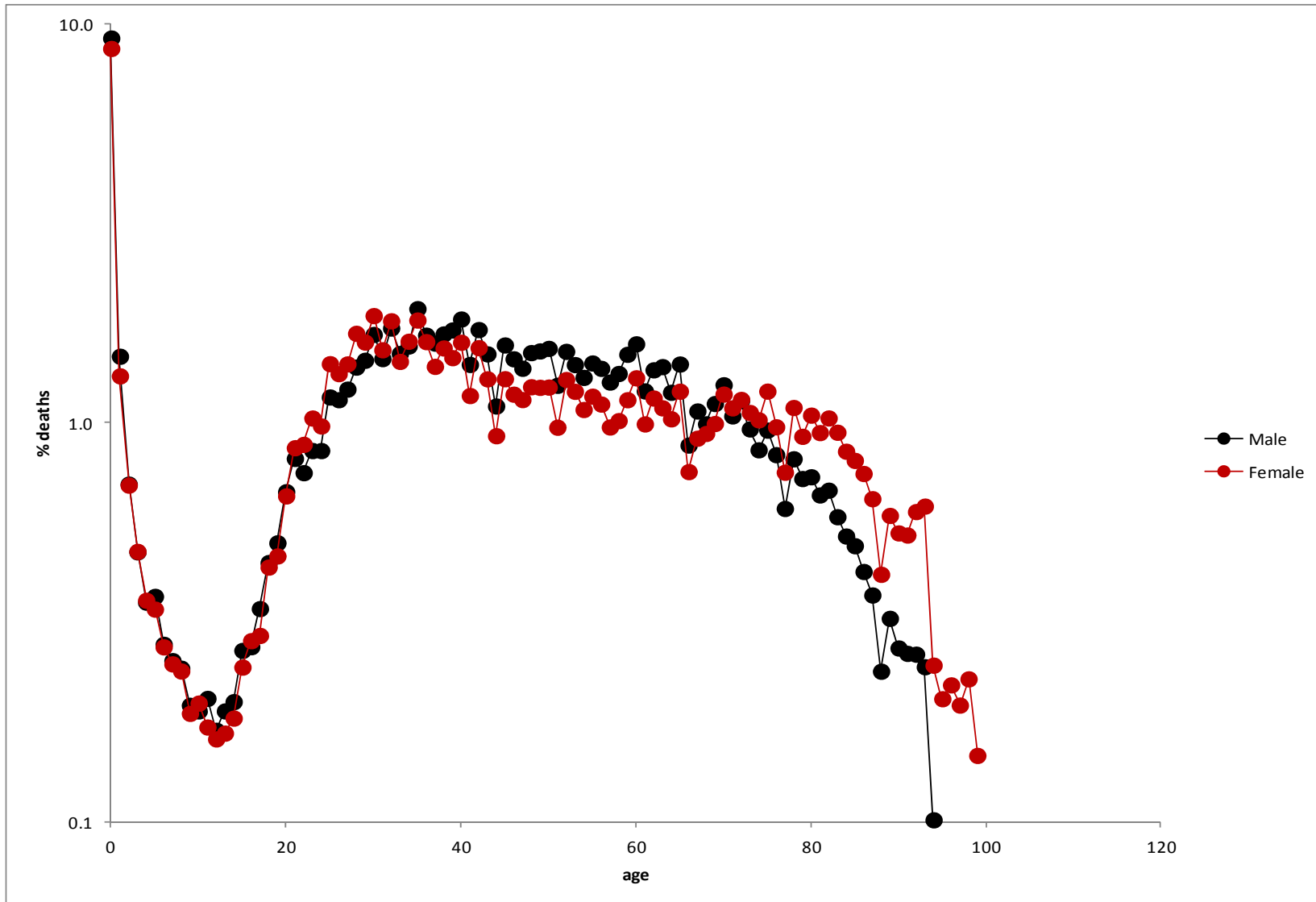
Province	Out migration	In migration	Net migration
Western Cape	133 ,571	440 ,239	<b>306 ,668</b>
Eastern Cape	437 ,812	167 ,992	<b>-269 ,820</b>
Northern Cape	70 ,040	64 ,896	<b>-5 ,144</b>
Free State	152 ,416	129 ,139	<b>-23 ,277</b>
KwaZulu-Natal	285 ,528	247 ,316	<b>-38 ,212</b>
North West	167 ,829	274 ,745	<b>106 ,916</b>
Gauteng	423 ,202	1 ,441 ,426	<b>1 ,018 ,224</b>
Mpumalanga	193 ,519	241 ,463	<b>47 ,944</b>
Limpopo	372 ,766	219 ,917	<b>-152 ,849</b>

# HOUSEHOLD DEATHS



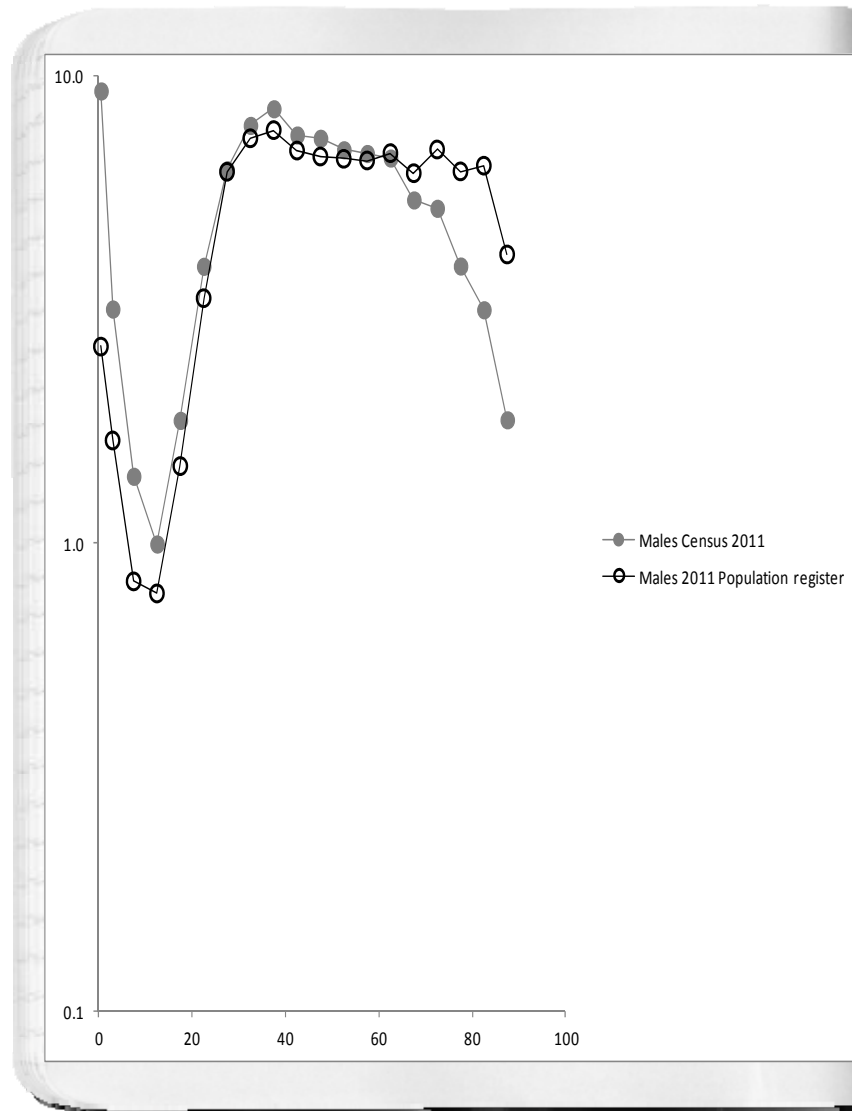


# MORTALITY – HOUSEHOLD DEATHS

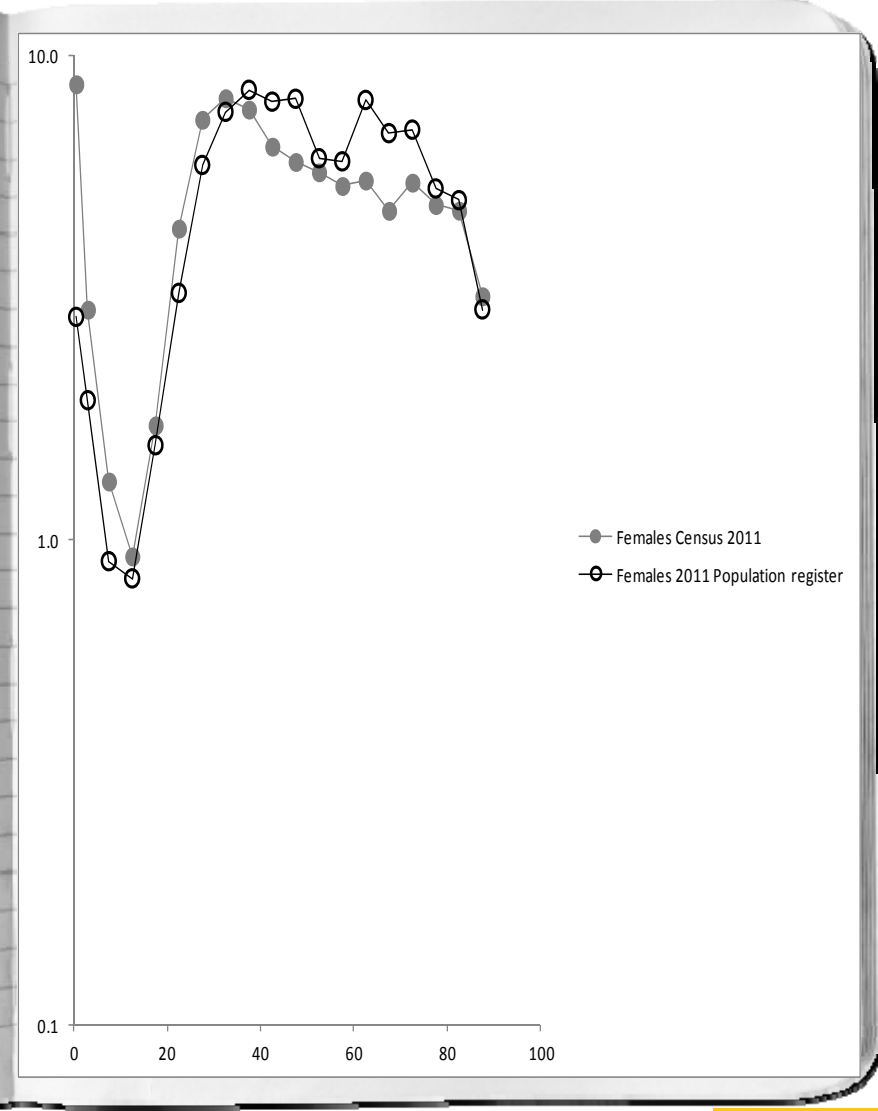


# A COMPARISON OF AGE PROPORTIONS OF DEATHS

## Males



## Females

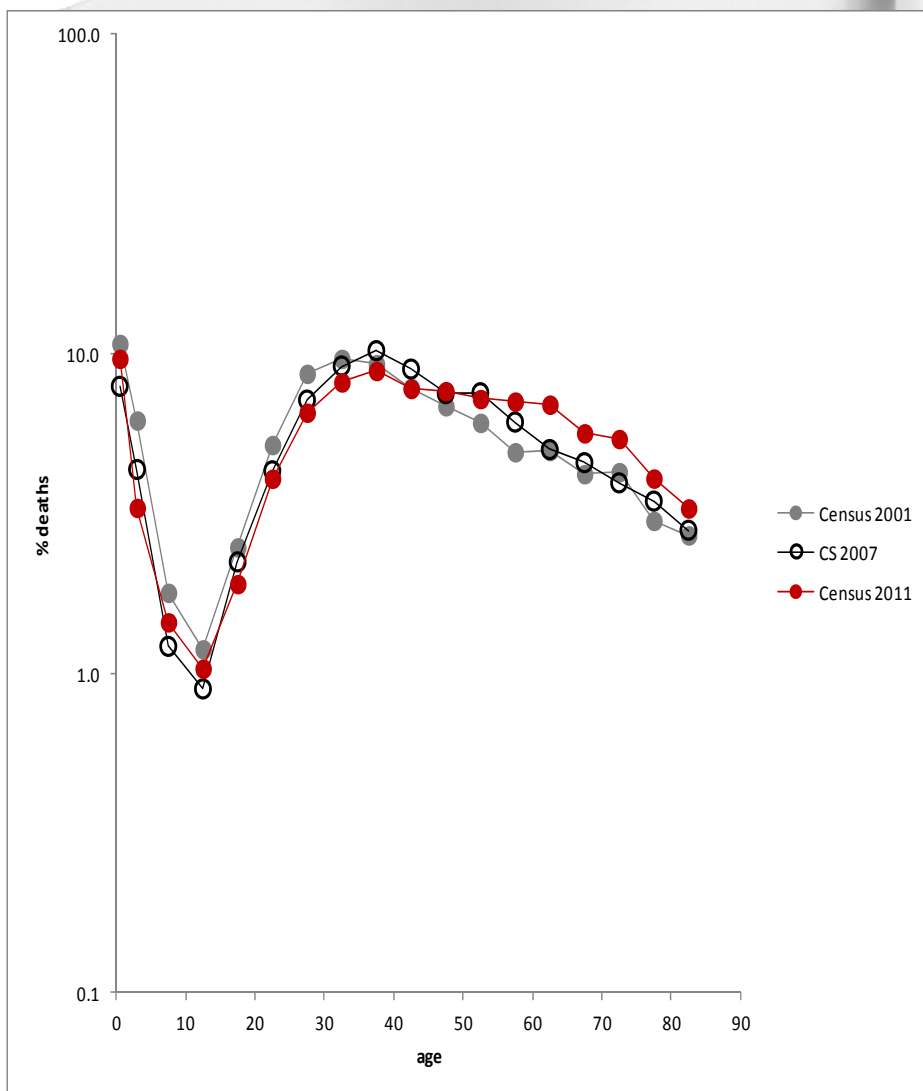


## DISTRIBUTION OF DEATHS BY PROVINCE: CENSUS 2011

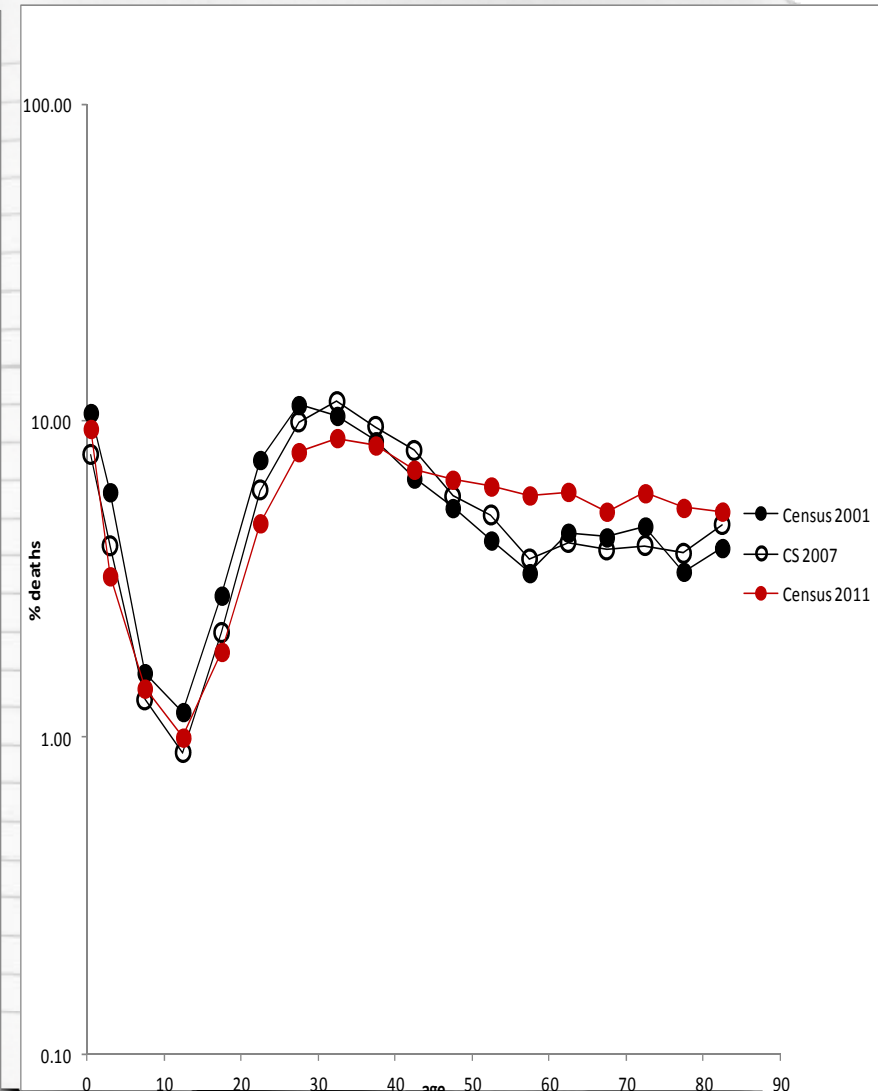
Province	Number	Percent
Western Cape	45,453	7.5
Eastern Cape	92,185	15.2
Northern Cape	14,369	2.4
Free State	44,318	7.3
KwaZulu Natal	136,636	22.6
North West	45,903	7.6
Gauteng	118,066	19.5
Mpumalanga	51,828	8.6
Limpopo	55,786	9.2
<b>South Africa</b>	<b>604,544</b>	<b>100.0</b>

# COMPARISON OF AGE PROPORTIONS OF HOUSEHOLD DEATHS OVER TIME

## Males



## Females



## LESSONS LEARNT

- Although stakeholder consultations are actually a good practice on the part of a statistical agency, it may result in a long census questionnaire that may contribute to content errors, additional work for field workers, data capturers and data editors
- Sufficient attention should be paid regarding quality control of the process of developing edits
- There is a need to revisit the conventional methodology with some possibility of changing to the integrated one for future censuses

**THANK YOU!**