Demographic, Employment and Wage Trends in South Africa

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Outline

1. Introduction to the growth and employment trends in South Africa

2. South Africa's demographic transition

3. Structure of the labour market:

    i. Uneven sectoral trends

    ii. TES Employment

    iii. Skills-biased labour demand

4. The role of the public sector in employment

5. Conclusion

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Introduction

- SA has exhibited positive, albeit tepid, levels of economic growth – consistently lagged other emerging economies performance.

- Middle-income country growth trap: low growth, high levels of unemployment and inequality.

- It is against this background that the paper focuses on demographic and labour market trends over the last 10 – 20 years in order to better understand the factor market underpinnings of South Africa's economic performance.

Real GDP and GDP per Capita Annual Average Growth Rates (%)

	1994-1998	1999-2003	2004-2008	2009-2013
GDP	2.76 (1.40)	3.17 (0.73)	4.92 (0.84)	1.91 (2.03)
GDP per capita	0.50 (1.43)	1.09 (0.78)	3.55 (0.83)	0.56 (2.00)

Source: World Development Indicators, 2015; Own calculations
Notes: Standard deviations shown in parenthesis.

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SA's Economic Structure

Sectoral Composition of GDP, 1994 & 2014
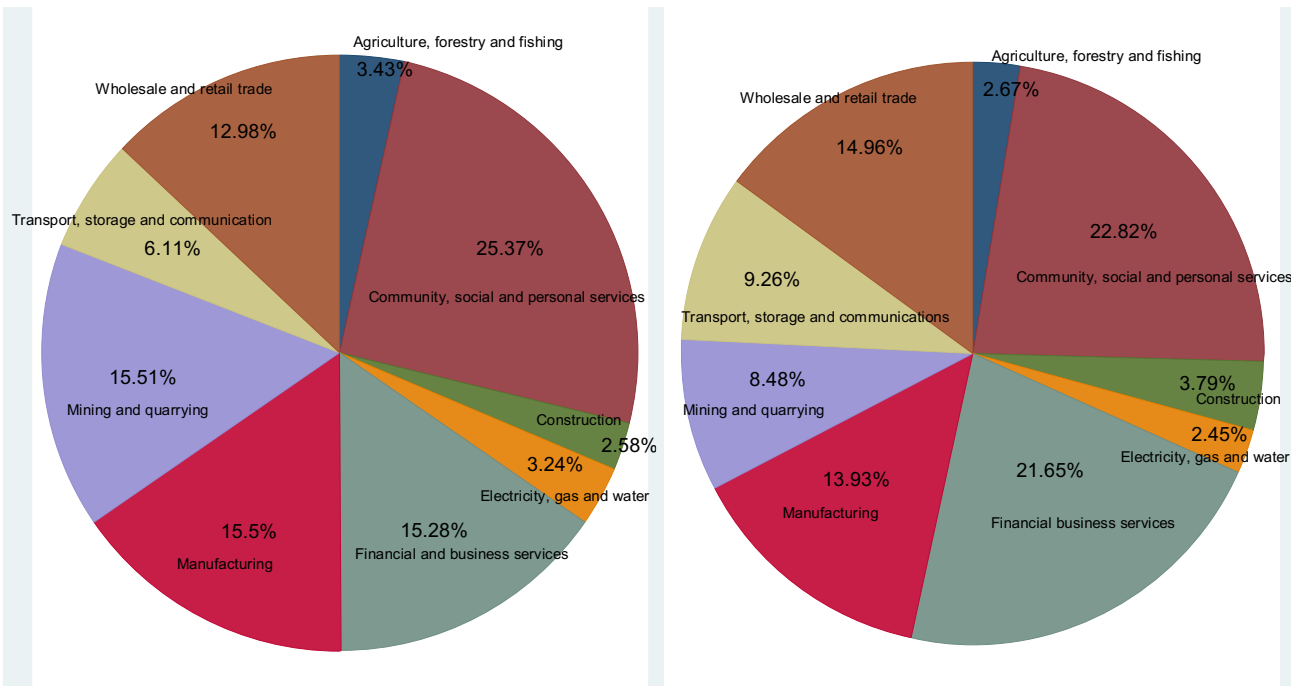
Source: South African Reserve Bank, 2015; Own graph

- 4 services that are driving economic growth:
  1. Transport, storage and communication;
  2. Financial and business services
  3. Construction; and
  4. Wholesale & retail trade

- Mining, agriculture and manufacturing have all declined as share of GDP.

SA has increasingly become a service-driven economy since 1994.

Poverty, inequality and unemployment

- WB's $2 a day poverty line sees moderate decline, from 40% in 1995, to 26% in 2013. Extreme poverty has declined more rapidly.

- Thus, about 13.7 m people living in poverty.

- SA's inability to translate growth into reducing poverty arguably related to extremely unequal nature of society - Gini coefficient of 0.65 (2014).

- Labour market crisis: The exclusivity of South Africa's growth path emphasised by (narrow) unemployment rate of 25%

- Comprehensive social welfare system succeeded in reducing inequalities in access to public services & housing, but poverty remained stagnant, and inequality remained exceptionally high – underpinned by one of the world's consistently highest UE rates.

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South Africa's Demographic Dividend

- Key feature of late1990s and early 2000s was rapid growth in size of labour force, driven by increasing participation rates (particularly amongst rural African women) – rather than rapidly growing working age population (WAP).

- Employment growth unable to keep up with labour force growth = rapid unemployment in absolute terms & as proportion of the labour force.

- Disconnect between employment growth and labour force growth points to importance of understanding longer-term challenges and opportunities associated with demographic change.

- Given slowing population growth rates, projections that WAP in total population will remain at 66% until 2030. Thus, the WAP is only expected to increase from current 34.2m to 36.5m by 2030.

- SA is quite some way along its demographic transition.

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South Africa's Demographic Dividend:
Estimations according to the NTA framework

Estimates of the first demographic dividend for South Africa, 2005-2060
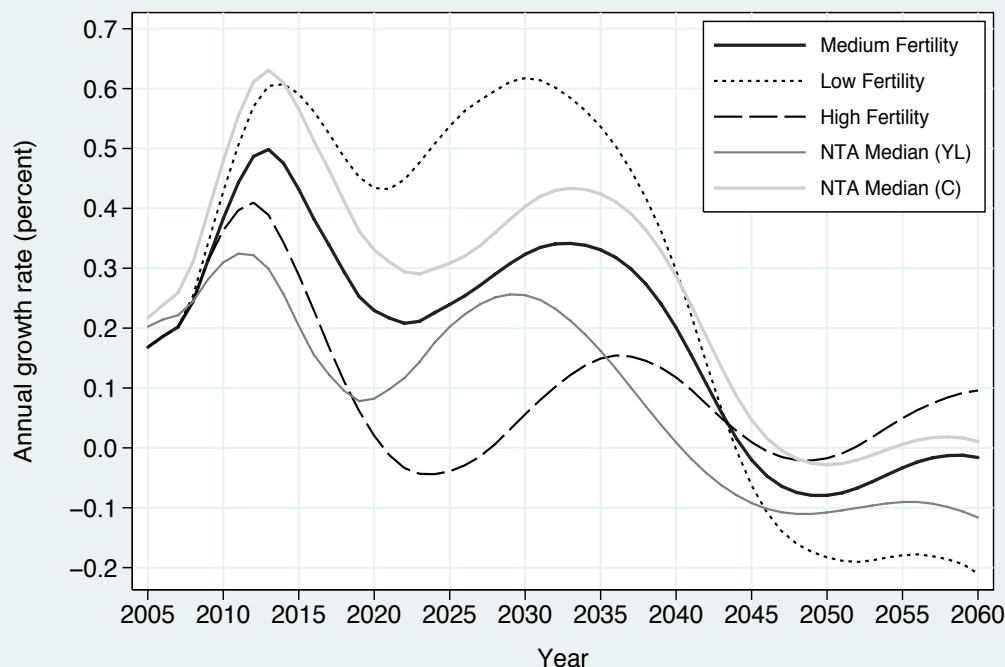
Source: Oosthuizen (2014) using National Transfer Accounts (2013) data
Notes: 1. Demographic dividend estimates have been smoothed by calculating the annual average growth rate of the support ratio over a six-year period (e.g. 2005-2010), allocating that value to the middle period (e.g. year 2007) and interpolating annual values using a quadratic polynomial.
2. Median age profiles for labour income and consumption are constructed using the median normalised value across the 34 countries for which data is available within each age cohort. Where countries have estimates for multiple years, only the most recent estimate is used.

- 1st demographic dividend (DD) is triggered by falling fertility rates. Econ growth is boosted through lower dependency on WAP.

- A raised support ratio implies an increase in the number of effective workers relative to effective consumers → higher standards of living and an improved scope for human capital investment.

- A 2nd DD can be realised if the benefits of the 1st dividend are invested in human and physical capital.

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Structure of the Labour Market:
Uneven Sectoral Shifts in Employment

Employment Shifts by Industry (% share in total employment), 2001 and 2012

	Growth (2001-2012)		Employment Shares		Share of Change $(\Delta E_i/\Delta E)$ [b]
	Absolute	Relative [a] $(\%\Delta E_i/\%\Delta E)$	2001	2012	(2001-2012)
Primary	-719232	-2.6	0.15	0.07	-0.28
Agriculture	-514 468	-2.7	0.1	0.04	-0.2
Mining	-204 764	-2.2	0.05	0.02	-0.08
Secondary	537 376	1	0.2	0.21	0.21
Manufacturing	112 149	0.3	0.14	0.12	0.04
Utilities	10 774	0.5	0.008	0.008	0.004
Construction	414 453	2.5	0.05	0.07	0.16
Tertiary	2 720 821	1.6	0.63	0.71	1.08
Trade	513 572	0.9	0.21	0.21	0.2
Transport	288 364	2.1	0.04	0.06	0.11
Financial	782 108	2.8	0.09	0.13	0.31
CSPS	1 041 524	2.1	0.17	0.22	0.42
Private households	95 253	0.4	0.09	0.08	0.04
Total	2 497 763	1	1	1	1

Structure of the Labour Market:
TES employment

TES employment as proportion of total employment and finance employment, 1996-2014
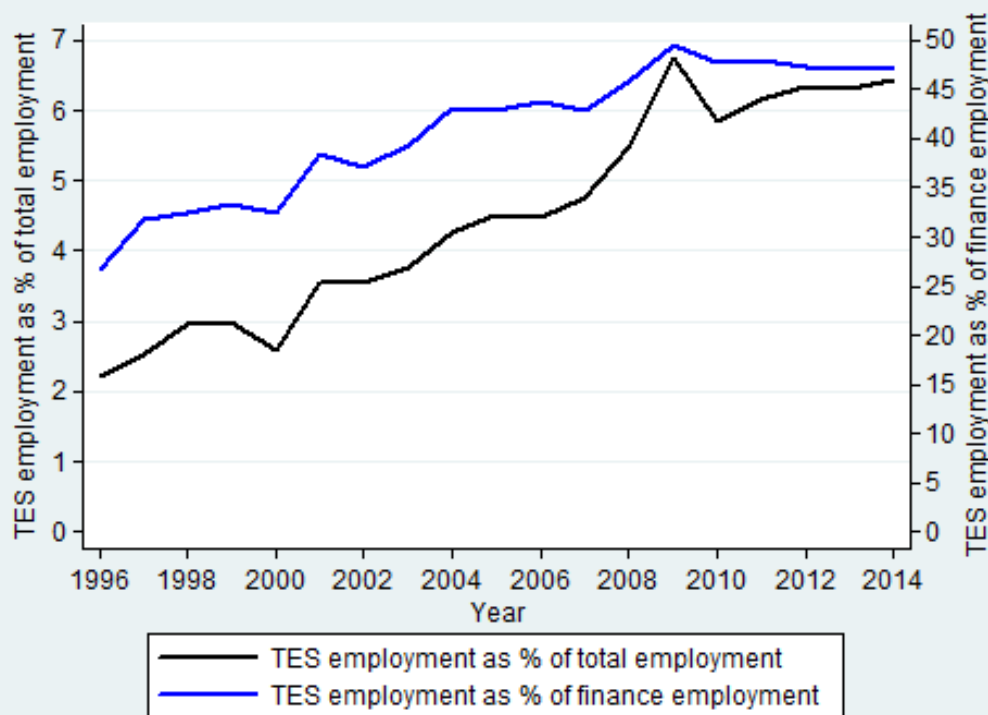
Source: OHS 1996-1999: LFS September 2001-2007; QLFS Quarter 4 2008-2013, QLFS Quarter 1 2014 (Statistics South Africa)

- The statistical 'hidden identity': temporary employment services (TES) employment as a % of financial industry increased from 26.64% (1995) to 47.36% (2014).

- % of total employment: 2.22% to 6.44% over the same period.

- Main jobs: Protective Services Workers Not Elsewhere Classified, helpers and cleaners, farmhands.

- Allow firms to circumvent the indirect costs of employment.

- SA indices for firing costs and non-wage labour costs that are below its income-level category means.

Structure of the Labour Market:
Skills-Biased Labour Demand

	Within Sector Shares (%)					Change over 2001-2012:	
	2001	2004	2007	2010	2012	%	Numbers
Primary							
High Skilled	2.9	5.4	4.8	7.2	7.6	4.8	27 602
Medium Skilled	54.5	52.5	53.1	35.2	36.8	-17.7	-571 229*
Unskilled	42.6	42.1	42.1	57.6	55.5	12.9	-175 392*
Total	100	100	100	100	100		-719 232*
Secondary							
High Skilled	14.2	15.3	16.6	19	18.1	3.9	188 518*
Medium Skilled	69.8	64.7	63.6	64.2	61.5	-8.3	136 140
Unskilled	16	19.9	19.8	16.8	20.4	4.4	214 002*
Total	100	100	100	100	100		537 376*
Tertiary							
High Skilled	27.4	27.1	31.8	28.3	29.3	1.9	931 498*
Medium Skilled	41.8	41.5	39.8	42.6	42.6	0.8	1 214 349*
Unskilled	30.8	31.4	28.4	29.1	28.1	-2.7	576 288*
Total	100	100	100	100	100		2 720 821*

Source: Bhorat, Goga and Stanwix (2014) based on data from StatsSA (LFS 2001-2007 and PALMS 2012).

Notes: 1. High-skilled workers include managers and professionals; medium-skilled workers include clerks, service and sales workers, skilled agricultural and fishery workers, craft and trade workers and operators and assemblers; and unskilled workers include elementary workers and domestic workers. 3. * denotes a significant change at the 5 per cent level based on a simple t-test in STATA.

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The Role of the Public Sector in Employment

Employment in the Public Sector, 2008-2014

Year (Q4)	Government	SOEs	Total	Year-on-year total change (%)	Share in employment index
2008	1 903 027	254 920	2 157 947		1.00
2009	1 912 965	265 561	2 178 526	6.79	1.07
2010	1 960 613	292 007	2 252 620	3.92	1.11
2011	2 104 959	281 393	2 386 352	2.72	1.14
2012	2 215 565	318 064	2 533 629	4.81	1.20
2013	2 328 769	319 749	2 648 518	0.00	1.20
2014	2 365 131	322 960	2 688 091	0.46	1.21

Source: QLFS (2008-2014), Own calculations
Notes:1. 'Government' is comprised of national, provincial and local government.

- Share of public sector employment risen 1.2 times from 14.5% of total employment (2008), to 17.5% (2014)

- Growth driven by employment in national, provincial and local government, as opposed to employment in state-owned enterprises (SOEs)

- State possibly acted as unintended creator of jobs during 2009 - extreme labour market distress.

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The Role of the Public Sector in Employment:
Growth in employment by occupation

Share of change in public sector jobs (2008-2014)

Share of change in public sector jobs (2008-2014)

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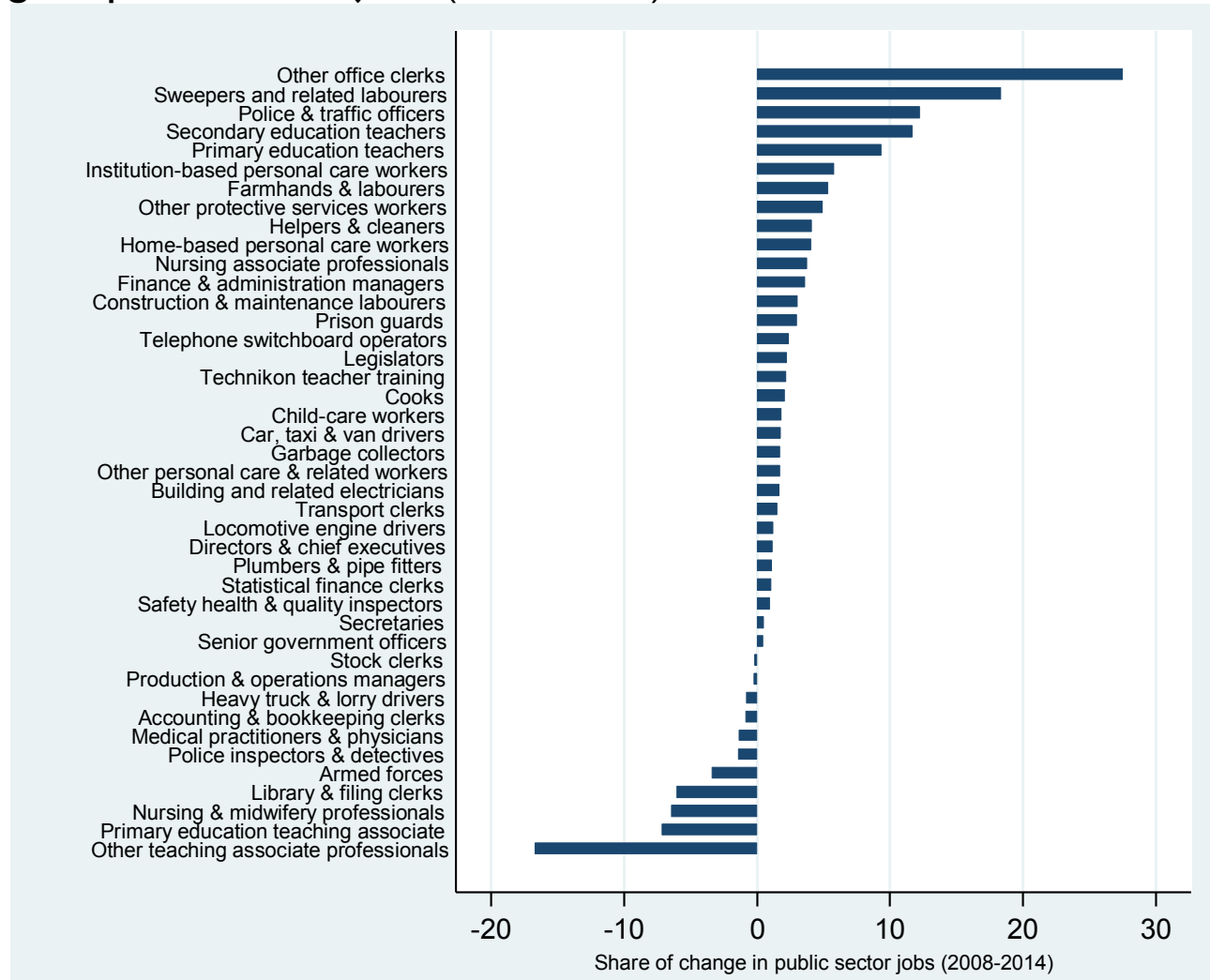
The Role of the Public Sector in Employment:
Worker characteristics

Mean Characteristics of Public and Private Sector Workers, 2008 and 2013

	2008		2013		2008-2013	
Demographics:	Ratio of means (public / private)				% Δ Public	% Δ Private
Age	1.10	*	1.07	*	0.51	2.63
Male	0.84	*	0.86	*	-2.04	-3.45
Race:						
African	1.09	*	1.15	*	6.94	1.52
Coloured	0.91		0.91	*	0	0
Indian/Asian	0.50	*	0.50	*	0	0
White	0.83	*	0.65	*	-26.67	-5.56
Years of Schooling	1.07	*	1.10	*	4.12	1.04
Married	1.15	*	1.09	*	-4.92	0
Union	2.27	*	3.18	*	2.34	-26.91
Occupation:						
1. Legislators, Senior Officials and Managers	0.60	*	0.60	*	0	0
2. Professionals	1.83	*	1.57	*	0	25
3. Technical and Associate Professionals	4.13	*	3.00	*	-18.18	10.48
4. Clerks	1.25	*	1.25	*	0	0
5. Service and Shop and Market Workers	1.18	*	1.31	*	30.77	18.18
7. Craft and Related Trades Workers	0.36	*	0.33	*	-20	-14.29
8. Plant / Machine Operators and Assemblers	0.30	*	0.30	*	0	0
9. Elementary Occupation	0.76	*	0.94	*	23.08	0

Source: QLFS (2008, Quarter 4) and LMDS (2013), Own calculations
* indicates that the mean for the public and private sectors for each characteristic is significantly different at a 5 percent significance level.

The Role of the Public Sector in Employment:
Union density

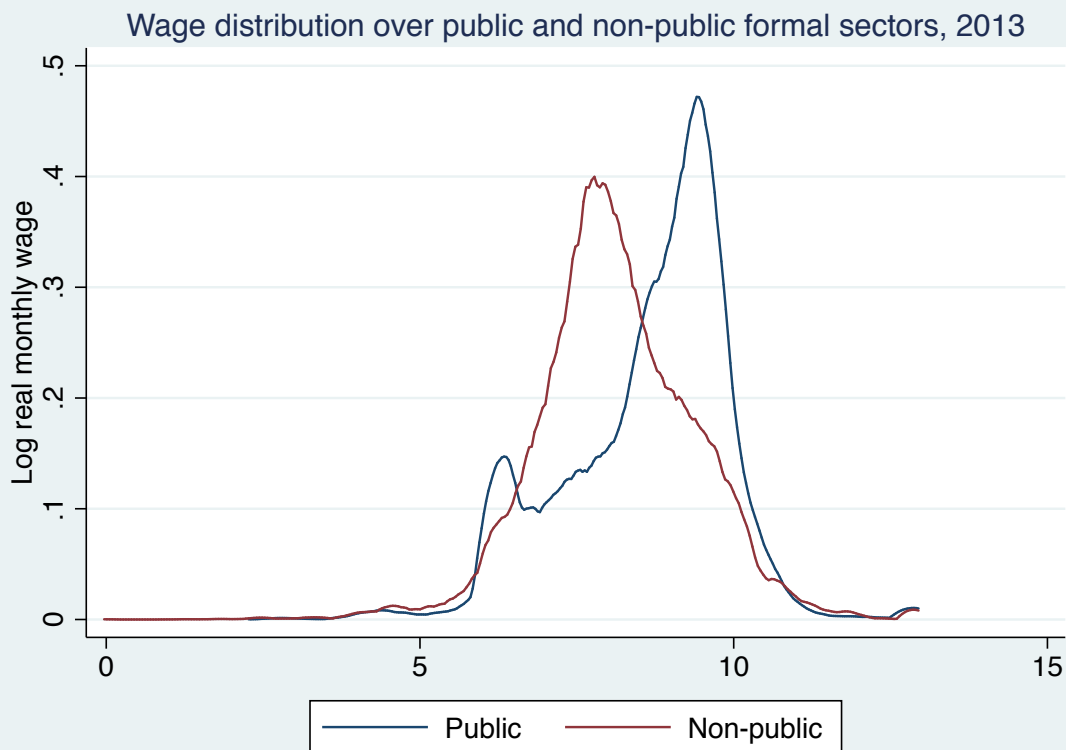Trade union membership of public and private sector employees in formal sector, selected years

Year	Private sector		Public sector	
	Number of union members	Union members as % of workers	Number of union members	Union members as % of workers
1997	1 813 217	35.6%	835 795	55.2%
2001	1 748 807	30.6%	1 070 248	70.1%
2005	1 925 248	30.1%	1 087 772	68.4%
2010	1 888 293	26.3%	1 324 964	74.6%
2013	1 868 711	24.4%	1 393 189	69.2%

Source: Bhorat, Naidoo and Yu (2014) using 1997 October Household Survey, 2001 and 2005 Labour Force Surveys, 2010 and 2013 Quarterly Labour Force Surveys.

- Public sector's union density rose from 55% (1997) to 70% (2013)
- Private sector union density declined from 36% to 24%
- Union members outside bargaining council system earn wage premium of 7.04%
- Total estimated premium to union workers within public bargaining system is 22%

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The Role of the Public Sector in Employment:
Wage Premium in the Public Sector

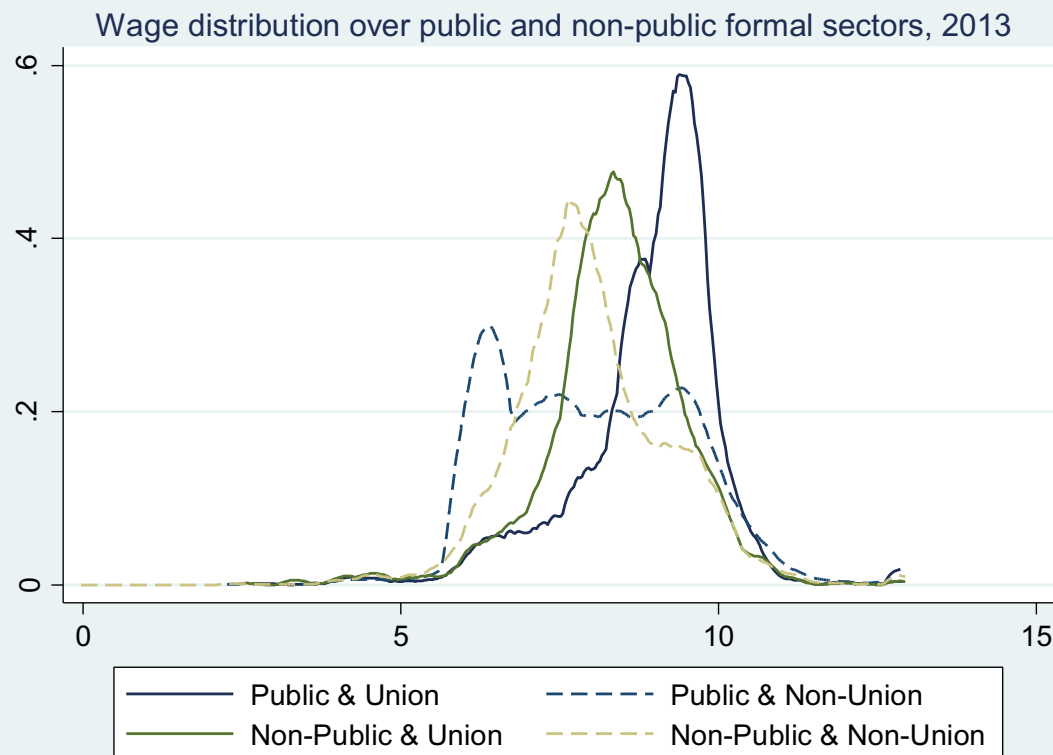### Wage distribution over public and non-public formal sectors, 2013

- Median and mean wages of the public sector are significantly higher than that of the private sector.

- Real monthly wage of avg. public sector employee is R11,668 (US$ 1,209) compared to R7,822 (US$ 811) for avg. private sector worker.

- Public sector wages have less dispersion than private sector wages, indicating a lower level of wage inequality within the public sector.

Source: LMDS (2013), Own graph
Notes: 1. The private sector in this excludes agriculture and the informal sector, thus defined as non-agricultural formal employment.
2. A two-sample Kolmogorov-Smirnov test of the equality of distributions confirms that these two distributions are significantly different from each other.

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The Role of the Public Sector in Employment:
Bargaining Power and the Wage Premium in the Public Sector

Wage distribution over public and non-public formal sectors, 2013

Legend:
- Public & Union
- Public & Non-Union
- Non-Public & Union
- Non-Public & Non-Union

- For non-unionised workers, avg. real wage in private sector is statistically significantly larger than that of the public sector, by about R952 (US$ 99).

- This suggests that the public sector premium at the least disappears (perhaps negative?), for non-unionised workers.

- Some initial evidence that the public sector premium may be very closely tied to a public sector union membership premium.

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The Role of the Public Sector in Employment:
Bargaining Power and the Wage Premium in the Public Sector

- These wage distributions suggest that, at least in terms of earnings, a dual labour market may indeed be prevalent in the SA labour market.

- Previous models of segmentation commonly referred to the distinction between the employed and the unemployed, or more recently, the formal and informal sector, as the key identifying markers.

- On initial evidence of these bimodal wage distributions, the distinction between public and private sector seems to be a new form of segmentation.

- To investigate the public sector wage premium more rigorously, we estimate a two-stage Heckman employment model correcting for selection into the labour market. Following this, we estimate a standard earnings function:

$$y_i = \propto + \beta_1 X_i + zPS_i + \mu U_i + t(PS_i \times U_i) + \gamma TES_i + \varepsilon_i$$

The Role of the Public Sector in Employment:
Bargaining Power and the Wage Premium in the Public Sector

Estimated Earnings Function, Corrected for Selection Bias (2013)

Log of real monthly wages	(1)	(2)	(3)	(4)
Government level				
Public sector	0.0109		-0.205***	
	(0.0162)		(0.0223)	
Government		0.0194		-0.233***
		(0.0165)		(0.0230)
SOE		-0.0392		-0.0287
		(0.0393)		(0.0619)
Interaction with union				
Public*Union			0.393***	
			(0.0285)	
Government*Union				0.444***
				(0.0294)
SOE*Union				0.0558
				(0.0785)
Union	0.318***	0.317***	0.207***	0.207***
	(0.0139)	(0.0139)	(0.0162)	(0.0162)
TES	-0.108***	-0.108***	-0.111***	-0.110***
	(0.0209)	(0.0209)	(0.0209)	(0.0209)
Lambda	-0.180***	-0.179***	-0.165***	-0.162***
	(0.0353)	(0.0354)	(0.0352)	(0.0352)
Observations	52,475	52,475	52,475	52,475
R-squared	0.402	0.402	0.406	0.406

Source: LMDS (2013), Own calculations
Note: 1. We exclude the agricultural sector and informal workers. 2. We include the following controls: gender, age, race, education splines, province dummies, whether the person lives in an urban or rural location, occupation dummies, and firm size.

The Role of the Public Sector in Employment:
Bargaining Power and the Wage Premium in the Public Sector

- In the first two specs (controlling for union membership), no significant wage premium for public sector workers. Union membership premium, is large & significant at 37%.

- Interacted specs results show 18.5% wage penalty for non-unionised members working in public, relative to the private sector. Public sector wage premium is 20.7% for unionised workers.

- Wage premium for the group of Government workers belonging to a union is 23.5%, whereas no significant wage premium for employees of SOEs.

- Therefore, when also controlling for TES employment, there is no avg. public sector wage premium. However, when being a member of a union, the public sector premium is significant and large. This result is certainly novel.

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The Role of the Public Sector in Employment:
Bargaining Power and the Wage Premium in the Public Sector

Estimated Public Sector Wage Premia across the Wage Distribution, 2013
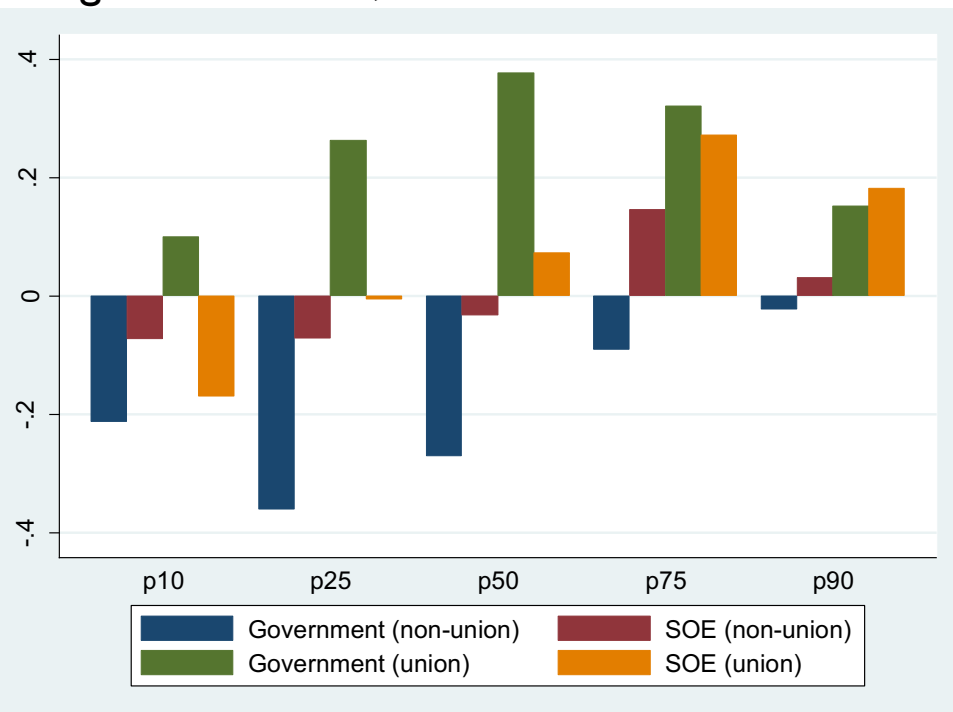
Source: LMDS (2013), Own calculations

- Workers that do *not* belong to a union face significant wage penalties associated with Government employment, across wage distribution.

- Non-unionised SOE employees face small wage penalties below median wage, however, this becomes positive and high at the 75th percentile.

- Unionised workers have high and positive returns to Government employment relative to unionised workers in the non-TES private sector.

- The median wage premium is 37%, declining to 15% at 90th percentile.

The Role of the Public Sector in Employment:
Summary

- Results don't show any significant avg. public sector premium. Instead, avg. wage penalties to government employment at lower wage levels, and positive wage premia at higher levels, whilst controlling for union membership.

- When isolating unionised workers: significantly large wage premia associated with government employment relative to unionised workers in non-TES private sectors.

- A key new facet of the SA labour market is estimated wage wedge between unionised public sector workers and other formal non-agricultural workers.

- A cursory analysis of labour market segmentation (multinominal logit model) confirms the distinctly different characteristics of workers in the public vs. private sectors.

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Conclusion

- Employment growth has been driven by services – higher-skilled occupations.

- Labour brokers sourcing workers for TES sector has risen.

- Rising share of workers in public employment.

  - Public sector employment is relatively skills-intensive, with higher ave wages relative to private sector, mostly due to union membership.

  - Has the post-2000 period generated a new labour elite in the labour market, i.e. the unionised public sector employee?

- Important new form of segmentation in the South African labour market.

- In the context of a sclerotic economy that is unable to generate large numbers of jobs in the private sector (especially in manufacturing), or where its firms are actively engaged in avoiding direct employment, this result is particularly worrying.

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Thank you

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