Unemployment, Education and Skills Constraints in Post-Apartheid South Africa

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Abstract

This paper investigates the relationship between education and unemployment in post-apartheid South Africa, and probes the argument that employment growth has been inhibited particularly by skills constraints. We use probit regression analysis to show that higher education protected against unemployment in both 1995 and 2003, and that overall, the relative benefits to tertiary education rose over the period. We show also that these aggregate trends mask substantial variation among race groups and within race groups, among men and women. However, after taking into account changes in the survey instruments used to measure employment, we find only modest evidence of skills-intensive employment growth. Rather, the increase in formally qualified labour was considerably larger than the increase in demand for skilled and semi-skilled labour over the period, and so unemployment rates even among graduates increased over the period.

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Introduction

The objective of this paper is to interrogate the relationship between education and unemployment and to consider how and why this relationship has changed since the political transition in South Africa.

Several studies have analysed the role of education in affecting labour market outcomes in South Africa (cf. Schultz and Mwabu 1998, Bhorat and Leibbrandt 2001, Hosking 2001, Cichello et al 2003, van der Berg and Burger 2003). In earlier work, this research focussed on the relationship between education and the earnings of the employed. Formal education was found to be a strong and significant predictor of income earned. Data collected during the early years of the democratic transition in South Africa also indicated a premium on matric (or grade 12) education (Schultz & Mwabu 1998).

More recently, economists have begun to explore the role of education in affecting another labour market outcome – the probability of gaining or finding employment (Bhorat 2004, Kingdon and Knight 2005, Moleke 2006). This relationship has particular relevance in South Africa which has been characterised by very high and rising rates of unemployment in the post-apartheid period. Perhaps the most commonly cited cause of unemployment in the country is that following skills-biased economic growth, a skills "mismatch" exists between the supply of and demand for labour (cf. Bhorat and Hodge 1999, Poswell 2002, Bhorat 2004, Cassim 2006, Naidoo 2006). Concerns with skills shortages have been embraced in national policy, evidenced by the recent launching of the Joint Initiative on Priority Skills Acquisition. If South Africa is indeed confronted with a "chronic skills shortage", then we might anticipate education to have become an increasingly important predictor of employment status in the country. The findings of recent studies that document rising rates of unemployment among graduates in the country, therefore, have been surprising.

This paper seeks to contribute to research on education and unemployment in two ways: first by showing that changes in the protection afforded by higher education in South Africa differ strongly by race and by gender; and second by 'refocusing' attention on demand-side considerations in the labour market. The primary data that we use for the study come from two nationally representative household surveys – the 1995 October Household Survey (OHS) and the September 2003 Labour Force Survey (LFS 2003: 2).

In the first section of the paper, we review current research on the relationship between education and unemployment. In section 2, we revisit trends in education and unemployment in the country. We show descriptively that the working-age population in South Africa has become more educated: compared to 1995, in 2003 a larger proportion particularly of younger Africans reported that they had at least matric education. We also demonstrate that unemployment rates in the South African labour market decrease with educational attainment. Probit analysis, however, reveals that although education protects against unemployment, this effect is not monotonically increasing in education, and that a discontinuity exists at matric education. Furthermore, we find that the relative benefits of higher education in securing employment did increase over the period but only among particular groups of South Africans.

In 2003, the relative benefits of higher education for both Coloureds and Indians increased considerably, whereas they either remained unchanged or declined for Africans and Whites. Further disaggregation reveals that aggregate trends among Africans and Whites also mask divergent changes by gender. Relative to those with less education, African men with at least matric education, and White men with post-matric education, were significantly more likely to find employment over the period. Among African and White women, however, the relative benefits of matric and post-matric qualifications declined considerably. The relationship between education and unemployment in South Africa, therefore, is not only racially differentiated but also highly gendered.

In the final empirical section of the paper we revisit changes in labour demand in the country. We show that although the demand for skilled labour experienced the largest relative increase from 1995, this was from a small base, and in absolute terms, growth in skilled employment was comparable to that in “unskilled” (or less skilled) employment. The demand for semi-skilled labour grew the most in absolute terms, but we demonstrate that a significant portion of this rise derives from changes in how employment has been defined over the period. The skills-bias of employment growth, although evident, is modest and we suggest that concerns with the quality of labour supplied should not overshadow other reasons for low employment growth over the period. Responses by employers in firm-based surveys underscore the importance of recognising other constraints (such as “crime and theft”, “currency volatility” and “corruption in government”) that inhibit employment expansion (Chandra and Nganou 2001, Devey et al 2005), and that would help account for why, even among graduates, unemployment rates have risen. To the extent that skills significantly inhibit (future) employment expansion, we suggest that perhaps the most pervasive skill absent among the unemployed is their lack of previous work experience.

1. Education and Employment Status: A Review

There are a number of reasons why we would expect the probability of employment generally to be rising in education. Among prospective employees, human capital may directly increase productivity making individuals with greater human capital more valuable. An employer, therefore, would rather hire someone with more, than less, education. Even where higher formal education does not directly increase an individual's productivity, employers with imperfect information about prospective employees may use education as a "sorting device" to help evaluate the future worth of an employee. The amount and type of schooling may signal a future employee's capacity to learn and can be used to predict how quickly an individual will acquire skills on the job, how productive the individual will be after training, the individual's work ethic and his or her commitment to the job.

Analogously, among the prospective self-employed, individuals with more schooling may be in a better position to start their own business. They would have greater literacy and numerical skills, and may be more able to overcome credit and other barriers to entry in self-employment.

We would expect the relationship between education and unemployment also to be influenced by market forces: in labour markets where the demand for skilled labour increases, for example, the relative benefits of higher education should rise. This would seem to be particularly apposite for the South African labour market. One of the frequently cited explanations offered for sustained and rising unemployment in the country concerns the lack of skills of the labour force.[1] These skills shortages are attributed to a shift in the composition of labour demand towards skilled labour, in the context of the inherited

Table 8: Distribution of the Economically Active, and Unemployment Rates, by Field of Study, 2003

	Distribution of the economically active			
Field of study	**Women**	**Men**	**Coloured & Indian women**	**Unemployment rate by field of study**
Communication studies, languages	3.28	2.01	1.61	18.95
Education, training, development	34.15	19.18	32.38	9.90
Manufacturing, engineering, technology	3.42	19.02	3.98	14.46
Human and social sciences	5.02	3.13	3.82	15.85
Law, military studies, security	3.81	8.72	2.17	5.00
Health and social services	14.66	6.89	20.07	6.83
Agriculture and nature conservation	0.72	4.20	0.40	7.15
Culture and arts	2.57	1.63	1.76	14.60
Business, commerce, management studies	23.16	24.28	24.54	15.71
Physical, mathematical, computer, life studies	6.98	6.92	7.44	24.13
Services	2.12	2.50	1.54	7.29
Physical planning, construction	0.11	1.51	0.24	9.37
	100.00	**100.00**	**100.00**	

Source: *LFS 2003: 2*
Note: *Percentages may not add up to 100 per cent because of rounding.*

In 2003, there is some evidence that male graduates were concentrated in fields of study for which unemployment rates were lower. In particular, more than twice as many men than women reported qualifying in "law, military studies and security" where unemployment rates were only five per cent. Men were also less likely to have specialised in the fields of "communication and languages" and the "human sciences" with higher unemployment rates (of 19 and 16 per cent respectively). There is also some indication that relative to all women, Coloured and Indian women graduated in areas with greater labour absorption – notably in the "health and social sciences". However, the differences are neither large nor consistent enough between men and women, and amongst women, to explain convincingly the results reported earlier.[8]

Another possible explanation is that Coloured and Indian women, in particular, have benefited from the ways in which firms have responded to employment equity initiatives. We do not consider this further here and rather flag this as an area for future research.

In summary, in this section we have documented rising levels of education of the labour

8 For example, men were considerably more likely than women to have specialised in "manufacturing, engineering and technology", an area of study associated with comparatively high unemployment rates. Coloured and Indian women were more likely than other women to have graduated in the field of commerce, where unemployment rates are also relatively high.

force from 1995 to 2003. We have shown that overall the relative protection against unemployment afforded by matric education did not change. Those with tertiary qualifications on average faced a further reduced probability of unemployment compared to those with only primary education, although these aggregate trends comprise divergent experiences among race groups and among men and women. We have shown also that although the more educated received relatively more protection, they were not insulated from unemployment increases, and unemployment rates even among graduates rose considerably over the period. In the next section we complement these findings on the relationship between education and unemployment with a consideration of changes on the demand-side of the labour market.

3. Labour Demand and Skills Shortages

The view that South Africa faces a 'chronic' skills shortage is underpinned by the argument that economic growth has been strongly biased towards more highly skilled employment and a mismatch, therefore, exists between the skills-requirements of labour demand and the qualifications of labour supply. We revisit this argument here by first investigating changes in the skills composition of employment.

in employment by aggregating changes across skills levels yields a greater increase (of about 200 000) than simply deriving the change in total (undifferentiated) employment. The change in employment measured by skills level, therefore, is over-estimated in Table 9, but because the missing observations are widely distributed by the age, gender and education of the employed, it is difficult to ascertain whether one category of skills is likely to be particularly affected.

Table 9: The Change in Employment in SA, 1995 and 2003

	South Africa, 1995 -2003	
	Absolute △ in employment	**% change**
Total employment		
-skilled	528 439	63.8
-semi-skilled	958 944	17.0
-unskilled	465 760	15.8
Agriculture		
-skilled	47 822	650.9
-semi-skilled	230 060	83.2
-unskilled	-313 176	-32.7
Employment (excluding self-employment)		
-skilled	357 775	63.18
-semi-skilled	221 596	4.17
-unskilled	31 121	1.10

Table 16: Change in Employment in South Africa, 1995 and 2003

	Absolute number		Changes (03-95)		Share of employment	
	1995	2003	Absolute change	% change	1995	2003
All sectors						
Skilled	827 761	1 356 200	528 439	63.8	0.09	0.12
semi-skilled	5 628 133	6 587 077	958 944	17.0	0.60	0.58
Unskilled	2 945 622	3 411 382	465 760	15.8	0.31	0.30
Agriculture						
Skilled	7 347	55 169	47 822	650.9	0.01	0.05
semi-skilled	276 634	506 694	230 060	83.2	0.22	0.42
Unskilled	957 613	644 437	-313 176	-32.7	0.77	0.53
Mining						
Skilled	16 093	24 439	8 346	51.9	0.04	0.04
semi-skilled	346 065	465 469	119 404	34.5	0.78	0.84
Unskilled	83 895	62 248	-21 647	-25.8	0.19	0.11
Manufacturing						
Skilled	88 406	143 187	54 781	62.0	0.06	0.09
semi-skilled	1 075 096	1 170 196	95 100	8.8	0.74	0.76
Unskilled	280 600	231 975	-48 625	-17.3	0.19	0.15
Utilities						
Skilled	4 899	15 401	10 502	214.4	0.06	0.17
semi-skilled	68 547	63 670	-4 877	-7.1	0.81	0.70
Unskilled	11 597	11 999	402	3.5	0.14	0.13
Construction						
Skilled	27 897	47 396	19 499	69.9	0.06	0.07
semi-skilled	332 792	456 893	124101	37.3	0.74	0.69
Unskilled	86 532	153 874	67 342	77.8	0.19	0.23
Retail						
Skilled	231 707	249 483	17 776	7.7	0.14	0.10
semi-skilled	1 120 563	1 397 804	277 241	24.7	0.67	0.58
Unskilled	328 272	775 686	447 414	136.3	0.20	0.32
Transport						
Skilled	72 030	100 295	28 265	39.2	0.15	0.19
semi-skilled	353 454	363 953	10 499	3.0	0.74	0.68
Unskilled	54 529	69 820	15 291	28.0	0.11	0.13
Finance						
Skilled	99 624	306 210	206 586	207.4	0.17	0.28
semi-skilled	455 340	675 948	220 608	48.4	0.77	0.62
Unskilled	36 368	112 770	76 402	210.1	0.06	0.10
Community services						
Skilled	279 274	412 866	133 592	47.8	0.13	0.19
semi-skilled	1 578 437	1 480 529	-97 908	-6.2	0.73	0.68
Unskilled	317 395	281 300	-36 095	-11.4	0.15	0.13
Private households						
Skilled	484	0	-484	-100.0	0.00	0.00
semi-skilled	21 205	5 044	-161 61	-76.2	0.03	0.00
Unskilled	788 822	1 067 010	-278 188	35.3	0.97	1.00

Source: *OHS 1995 and LFS 2003: 2*

Table 17: Change in Employment Excluding Self-Employment in South Africa, 1995 and 2003

	Absolute number		Changes (03-95)		Share of employment	
	1995	2003	Absolute change	% change	1995	2003
All sectors						
Skilled	566 297	924 072	357 775	63.18	0.07	0.10
semi-skilled	5 319 363	5 540 959	221 596	4.17	0.61	0.59
Unskilled	2 831 497	2 862 618	31 121	1.10	0.32	0.31
Agriculture						
Skilled	5 853	14 412	8 559	146.23	0.01	0.02
semi-skilled	212 776	225 033	12 257	5.76	0.18	0.25
Unskilled	951 161	641 190	-309 971	-32.59	0.81	0.73
Mining						
Skilled	15 754	23 598	7 844	49.79	0.03	0.04
semi-skilled	345 939	465 203	119 264	34.48	0.78	0.85
Unskilled	83 895	61 922	-21 973	-26.19	0.19	0.11
Manufacturing						
Skilled	73 958	108 690	34 732	46.96	0.06	0.08
semi-skilled	1 014 978	1 021 377	6 399	0.63	0.74	0.75
Unskilled	279 137	224 099	-55 038	-19.71	0.20	0.17
Utilities						
Skilled	4 899	15 401	10 502	2.14	0.06	0.17
semi-skilled	68 380	62 740	-5 640	8.25	0.80	0.70
Unskilled	11 597	11 990	393	3.39	0.14	0.13
Construction						
Skilled	13 078	20 912	7 834	59.90	0.03	0.04
semi-skilled	276 615	328 291	51 676	18.68	0.74	0.67
Unskilled	86 039	144 747	58 708	68.23	0.23	0.29
Retail						
Skilled	90 358	119 341	28 983	32.08	0.06	0.08
semi-skilled	1 056 512	1 110 035	53 523	5.07	0.77	0.74
Unskilled	229 051	265 037	35 986	15.71	0.17	0.18
Transport						
Skilled	27 646	52 615	24 969	90.32	0.06	0.12
semi-skilled	351 412	339 699	11 713	3.33	0.81	0.74
Unskilled	54 529	64 986	10 457	19.18	0.13	0.14
Finance						
Skilled	72 111	210 097	137 986	191.35	0.13	0.22
semi-skilled	432 555	614 946	182 391	42.17	0.80	0.66
Unskilled	36 368	109 487	73 119	201.05	0.07	0.12
Community services						
Skilled	262 639	357 252	94 613	36.02	0.12	0.18
semi-skilled	1 540 808	1 369 430	-171 378	-11.12	0.73	0.68
Unskilled	313 323	273 190	-40 133	-12.80	0.15	0.14
Private households						
Skilled	0	0	0	-	0.00	0.00
semi-skilled	19 387	3 328	-16 059	-82.87	0.02	0.00
Unskilled	786 396	1 065 697	279 301	35.52	0.98	1.00

Source: *OHS 1995 and LFS 2003: 2*

Note: *In the 1995 OHS, domestic workers were post-coded by Stats SA as self-employed whereas in all subsequent surveys they are considered to be working for someone else. For the purpose of FRPSDUDEOH OLWHUDFB UHOHYDQW DMXVWPHQWV &RPPXQLW\ &RQWUDFW &RUHWKUHIRUH included in estimates of private household employment.*

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