

THE RACIAL EMPLOYMENT GAP IN SOUTH AFRICA

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ABSTRACT

Unemployment amongst the economically active population of South Africa has been increasing since the early 1980s and according to official statistics now stands at 30.5 per cent. Using the broader definition of unemployment the figure rises to almost 42 per cent of the economically active population. Given these internationally high unemployment figures this paper estimates whether the racial likelihood of employment gap has also increased between 1995 and 2002. Taking the four official population groups, a simple probit analysis is used to decompose the White-Black employment likelihood gap into an explained and unexplained (discrimination) component. The results have implications for the effectiveness of affirmative action policies and for the supply-side of the labour market. The observed employment likelihood gap between Whites and Africans whilst remaining around 32 per cent between 1995 and 2000, increases from 32.4 per cent to 39.3 per cent between 1995 and 2002. Equivalent probability gaps for Coloureds and Asians relative to Whites have also increased in this period, with the broadly economically active Asian having observed an increase from 6.8 per cent to 16.0 per cent. When these observed gaps are decomposed quantity of education, dwelling ownership status, number of children and elderly in a household help explain the majority of the observed racial differences, with Whites having increased their advantage over the African and Asian groups. However a significant part of the racial gap remains unexplained, with evidence of increasing nepotistic hiring practises favouring Whites, whilst discrimination against Africans, Coloureds and Asians has remained relatively stable and low. The unexplained White advantage (an upper limit on racial employment hiring discrimination) increased by 5.9 per cent between 1995 and 2002, whilst the explained White-African employment likelihood gap increased by 1.5 per cent. This would lend support to the argument that affirmative action policies have as yet failed to work.

I INTRODUCTION

With official unemployment currently estimated at 30.5 per cent of the economically active population and the figure rising to 41.8 per cent in 2002 when using the broader definition of unemployment, there is a concern as to the effectiveness of post-apartheid labour market legislation. During the apartheid period of 1946-1994 the labour market was characterised by a clear dualism, across racial lines. This stemmed, from amongst other things, the Land Areas Act, the Bantu Education Act and occupational colour barring that produced racial economic, social and political segregation. With rapid economic growth until the mid-1970s, the segregationist policies in the workplace were increasingly unworkable. With White unemployment virtually zero, private business began demanding more Black semi-skilled and skilled labour so as to meet production targets, instead of hiring relatively expensive labour from abroad. Whilst occupational barring gradually began to subside this did not lead to the economic empowerment of Blacks (African, Coloured and Asian). Instead job division or blatant wage discrimination was adopted so as to keep the dualistic nature of the labour market in tact.

With the adoption in the immediate post-apartheid period of reverse discrimination (affirmative action) employment policies in the form of the Labour Relations Act (1995), and Employment Equity Act (1999) it may be expected that even in a period of rising unemployment the economic position of the economically active Black would improve. This is the subject of investigation for this paper. By adopting a simple probit employment model, the changes in employment likelihood (probability) by broad racial group will be estimated. Differentiating between the economically active in four racial groups, the relative probabilities of employment will be estimated in a period of rising unemployment from 1995 to 2002¹. The analysis will present results for each racial group to confirm the racial employment probability hierarchy. Changes over time to the observed and predicted employment likelihood gaps are calculated so that a clearer understanding as to what has caused these changes can be identified, with policy implications being clearer.

The next section will review the previous literature in this area. Section III discusses the data used. Section VI describes the probit employment model adopted and how the observed employment probabilities are decomposed. The next section presents the employment model estimates for the pooled sample and the decomposition results of the analysis. A conclusion follows.

¹ In a previous version of this paper the February 2002, Labour Force Survey was used and compared with the October household surveys of 1995 and 1999, but failed to consider seasonal fluctuations in employment levels. The LFSs used in this revised paper were undertaken in September of each respective year.

II CONTEXT AND PREVIOUS WORK

In the post-apartheid South African labour market a well documented structural shift has occurred that originated towards the end of the apartheid period. In the formal labour market Borhat (2000, 2003) illustrates that a change in labour demand from unskilled/semi-skilled workers towards highly skilled workers has occurred since the 1970s. This can be explained by the relative decline in primary industry employment e.g. gold mining, which has seen 1.5 million jobs shed between 1970 and 1995. Due to the nature of the South African labour market with its deep-rooted racist past, these job losses have affected African workers in particular. Borhat (2000) argues that technological change has largely caused the shift in labour demand towards the more highly skilled, and that in the period 1993-1997 international trade benefited skilled workers while impacting negatively on unskilled worker demand².

Borhat (2003) finds that whilst employment has increased over the period 1995-1999, unemployment has increased, indicating a clear gap between the rate of employment creation and the rate of growth in economically active people in South Africa. Whilst some industries have seen large increases in employment, in particular the Financial and Business Sector, this has not addressed the employment crises currently facing South African workers. The issue of non-substitutability of skills means that new highly skilled and professional jobs cannot be filled by unemployed primary sector workers. The issue of the characteristics of the unemployed is addressed in Kingdon and Knight (2001, pp.10) who find that long-term unemployment (of more than 1 year) in 1994 accounted for 67 per cent of the unemployed. An almost identical finding was revealed when using the September 2000 Labour Force Survey, with 68 per cent long-term unemployment³. This is compounded further by the findings that of the total number of unemployed, 58 per cent claimed never to have worked before. These findings are consistent with the shift in labour demand hypothesis as an explanation for current unemployment levels.

There have been numerous studies on racial differences in South Africa. The majority of these have focussed on earnings and wage differentials (Knight and McGrath, 1987; Allanson et al, 2001; Rospabe, 2002) with decomposition of wage differentials the preferred method of reporting. Knight and McGrath (1987), Moll (1992), Kingdon and Knight (2001), Rospabe (2002), focus attention on employment

² In October 2003, the National Union of Metalworkers of South Africa (NUMSA) criticised the ANC's motor industry development programme (MIDP) for job losses in the sector between 1996 and 2001. One of the arguments raised was that "motor manufactures had adopted high technology to achieve high volumes, resulting in the shedding of jobs", (Business Report, 2/10/03, pp.5).

³ The long-term unemployment figure for September 2000, is based on the number of respondents who gave a valid answer to the question "How long has...been trying to find work or start a business?". When a similar calculation was undertaken in answer to the question "How long ago was it since...last worked?", of the valid responses 74 per cent claimed to have not worked for 1 year or more. Similar findings were not possible using the 2001 and 2002 September LFSs due to a poor response rate.

differences and occupational differences with decomposition methodology used in the later works. These studies used multinomial logit and probit models to estimate upper limit estimates on employment and occupational discrimination during and after the apartheid system.

Kingdon and Knight (2001) find that in 1994, 8 of the 34 per cent unemployment probability gap between African and White economically active people could be attributed to racial employment discrimination. Using a decomposition technique the majority of the discrimination probability gap was attributed to White advantage. Rospabe (2002) undertakes a comprehensive analysis of racial employment differences between 1993 and 1999, concluding that the African-White employment probability gap declined slightly in the period, with male African employment likelihood actually increasing in a period of rising unemployment rates⁴. This would indicate that affirmative action policies designed to re-dress the racial imbalances of the segregationist South African labour market have to a small extent been effective.

III DATA

The data sets used here are the 1995 and 1999 October Household Survey (OHS) and the 2000, 2001 and 2002 September Labour Force Survey (LFS). The pilot LFS of February 2000 was not used since the sample size was not consistent with earlier and later data sets. The survey design of the data sets was based on a sample of 30,000 dwelling units drawn from 3000 primary sampling units, meaning 10 dwelling units per enumeration area. The 1999, 2000, 2001 and 2002 data sets are based on the 1996 Population Census. The samples were stratified by province and rural-urban location. The 1995 OHS is based on the 1991 Population Census⁵.

Formal and informal sector workers were used in the analysis. Only those people *between* the ages of 15 and 66 were used so as to remove children and possibly older society members who have taken up retirement occupations.

The broad definition of unemployment is used throughout the analysis instead of the narrower, official unemployment measure. This follows the research recommendations of Kingdon and Knight (2000) who argue disillusionment of unemployed South Africans will impact heavily on job search activities for many weeks not just the last 4 weeks and therefore should be defined as economically active and the views of

⁴ Kingdon and Knight (2001) use the Blackaby et al (1998) technique, whilst Rospabe (2002) uses observed probabilities of employment for each racial group and the predicted probabilities using a 'pooled' or non-discriminatory employment structure.

⁵ According to Borat (2003: pp.438) the OHS1995 includes domestic workers as part of the informal sector, when in later surveys they are included as formal sector workers, rendering informal sector data useless. Since we are concerned with all employment and unemployment this does not represent a problem to this analysis.

Klasen and Woolard (2000) who emphasise the importance of willingness to work amongst the economically active. The economically active population group and the number of employed persons for each data set are provided through official codings. These form the basis for the definitions of the employment rates for the respective years⁶. The 1995 OHS does not explicitly ask if workers are self-employed or employed by somebody else, and differentiating between the two types of worker is undertaken using the Work Status variable. In 1995 those workers who work for both themselves and somebody else are classed as employees, and make up a very small proportion of the total sample of workers. The study does not distinguish between the formal and informal employment sector since this information is not contained in the 1995 OHS, with information for informal and formal sector self-employment only.

Table 1 illustrates the official and authors computations of the unemployment rates for all racial groups and for Africans and Whites. This exercise serves as a test to the researcher as to the reliability of the working sample that is to be used. Africans have largely been burdened by rising unemployment increasing from 37% to 49% (broad definition) between 1995 and 2002. This is indicative of the changing nature of employment in South Africa, re-structuring away from unskilled and semi-skilled jobs towards skilled and high-status occupations, that has impacted hardest on African males⁷.

Table 1: Incidence of Employment amongst the Economically Active in South Africa, 1995-2002 (Strict and Broad definitions)

Year	Strict '000s			Broad '000s		
	All EA	African EA	White EA	All EA	African EA	White EA
Official						
1995	16.5% (1,999)	20.8% (1,641)	3.7% (90)	29.3% (4,204)	36.9% (3,665)	5.5% (135)
1999	23.3% (3,158)	29.2% (2,751)	4.7% (99)	36.2% (5,882)	44.0% (5,235)	6.8% (146)
2000	25.8% (4,082)	/	/	35.9% (6,559)	/	/
2001	29.5% (4,525)	35.9% (3,929)	6.0% (128)	41.5% (7,698)	49.1% (6,774)	8.8% (193)
2002	30.5% (4,837)	36.8% (4,213)	/	41.8% (7,925)	49.3% (7,034)	/
Authors						
1995	16.5% (1,986)	20.8% (1,630)	3.7% (88)	29.3% (4,173)	37.0% (3,639)	5.3% (130)
1999	23.6% (3,204)	29.3% (2,776)	5.1% (107)	36.2% (5,899)	43.9% (5,236)	7.1% (154)
2000	26.1% (4,123)	31.1% (3,580)	6.9% (144)	36.1% (6,586)	42.0% (5,760)	9.3% (200)
2001	29.5% (4,520)	35.9% (3,925)	6.0% (128)	41.5% (7,675)	49.1% (6,755)	8.8% (193)
2002	30.5% (4,831)	36.8% (4,208)	6.1% (133)	41.8% (7,904)	49.3% (7,017)	9.0% (200)

Official and Authors computations from OHS and LFS

⁶ The unemployment figures used for 1995 and 1999 are based on STATSSA definitions of unemployment, and it is acknowledged that these definitions have changed since 1995, and give possible under-estimations of unemployment. For greater discussion of this issue see Klasen and Woolard (2000) and Casale and Posel (2002).

⁷ See Borhat (2003) for a discussion of these changes to labour demand.

For consistency of results over the time period, many variables that would have been included in a single year paper have had to be dropped since they do not appear in all of the data sets. The employment model will control for education, age, age-squared, provincial location, urban-rural location, number of children in a household, number of elderly persons in a household, whether married and whether the present dwelling is owned or not. These represent standard variables in an employment or unemployment model. Head of household status is not included in the employment model due to causality problems, in that being employed in a country where unemployment is so high may determine the head of a household, rather than head of household determining employment status. The number of persons in a household who are employed and/or unemployed are also not considered in the analysis since an identification problem emerges, that can dominate the model in a similar way to that of including a head of household dummy variable.

With further cleaning due to missing values, the working sample sizes for the five years are respectively, 44,649 for 1995, 38,414 for 1999, 42,035 for 2000, 42,931 for 2001 and 41,540 for 2002.

IV METHODOLOGY

Following the analysis of Rospabe (2001) and Fallon and Lucas (1997), an employment function is estimated using a probit model. This is perhaps a more appropriate model than the multinomial logit model that allows employment to be split into employee employment and self employment since the 1995 OHS does not explicitly ask whether workers are self-employed or employed by a third party.

The probit model has just two outcomes 0 and 1, representing unemployed and employed in this analysis. Based on the normal distribution the probit model is represented by,

$$\begin{aligned} \text{Pr } ob(Y = \textit{employed}) &= \int_{-\infty}^{\beta'x} \phi(t) dt . \\ &= \Phi(\beta'x) . \end{aligned}$$

The probit model is used instead of the logit model for purely practical reasons based on previous work in this area.

The probit model provides the researcher with predicted probabilities of various outcomes. In order to present a more concise interpretation of the model estimations, the paper adopts a decomposition methodology based on the seminal works of Blinder (1973) and Oaxaca (1973) drawing on the work of

Blackaby et al (1998) and Rospabe (2002). By using the observed probabilities of outcomes from the working sample, and introducing the predicted probabilities calculated from the probit model actual employment probability differences can be decomposed into an explained and unexplained component. This allows for clearer policy implications.

Since the paper is concerned with employment probability differences between White and Black economically active persons, the predicted probability of employment for each group is identified first. The observed probability of employment, self-employment and unemployment is in reality easily obtained by calculating the weighted average of the different employment status allowed. The observed probability gap between Whites and Blacks is thus easily calculated by,

$$p_w - p_b, \quad (1) \quad \text{where } w \text{ and } b \text{ denote whites and blacks}$$

The predicted probabilities are calculated using the estimates from the pooled, White and Black samples. The predicted probability gap in the absence of any employment gender discrimination is calculated by,

$$\hat{p}_w - \hat{p}_b. \quad (2)$$

To estimate the unexplained component of the observed probability gap we simply take (2) from (1),

$$(p_w - p_b) - (\hat{p}_w - \hat{p}_b) = (p_w - \hat{p}_w) + (\hat{p}_b - p_b) \quad (3)$$

where the first term on the right hand side (RHS) represents the advantages of being White, and the second term the disadvantages of being Black.

The predicted probability in the absence of employment discrimination can also be decomposed further by using the predicted probability of employment for the *pooled* (both Whites and Blacks) sample. Thus (2) decomposed to,

$$\hat{p}_w - \hat{p}_b = (\hat{p}_w - \hat{p}_b) + (\hat{p}_w - \hat{p}_b), \quad (4)$$

where the first term on the RHS is the explained employment advantage to Whites in the labour market and the second term is the explained employment disadvantage to Blacks. Hence equation (1), can be decomposed into,

$$p_w - p_b = (\hat{p}_w - \hat{p}_p) + (\hat{p}_p - \hat{p}_b) + (p_w - \hat{p}_w) + (\hat{p}_b - p_b) \quad (5)$$

The decomposition results in the following section will take the form of Equation (5).

V RESULTS: ALL THE ECONOMICALLY ACTIVE

Estimated Employment Model

The coefficients of the pooled probit employment models for the broadly defined economically active, are presented in Table 2. The EA with higher and further education have a significant advantage over the non-educated, primary educated and secondary educated EA in all four years, with higher educated (at least undergraduate degree holder) persons having the highest probability of being employed. This expected result confirms the importance of education and in particular further and higher education in obtaining a job. This is particularly the case in South Africa where employment creation in the 1990s has largely been in high skilled areas.

The expected racial employment hierarchy is observed, with Whites more likely to be employed than Coloureds or Africans relative to the reference group of Asians. The significant differences in employment likelihood with Whites more likely to be employed relative to Asians and Africans less likely to be employed compared with Asians illustrates the continued problem race plays in the South African labour market. Even after controlling for numerous other factors in the employment model, the problems of the past still characterise the labour market.

Being female, *ceteris paribus*, significantly reduces the chances of being employed relative to a male. This confirms the findings of previous studies in both South Africa and the rest of the world and can be explained by the traditional socialisation of females in the household or family unit as child-bearing and child-rearing individuals. It be must stressed too that household work (e.g. water collection, cleaning, cooking, shopping) traditionally undertaken by females in the household is not considered economically active even though this work forms an essential part of a functioning household. Such work acts as a constraint on female participation in the labour market with any paid work needing to be flexible in nature. Potential employers may see such flexibility as riskier than employing a male whose ‘bread-winner’ status in the household will ensure some element of firm loyalty.

The number of children and elderly persons in a household negatively and significantly effects employment likelihood of working age, economically active individuals. This suggests having dependent individuals in the household reduces the flexibility of labour force participants a finding consistent with job search theory (See Polachek and Siebert, 1993).

Living in an owned dwelling significantly and negatively effects the probability of being employed confirming the findings of Kingdon and Knight (2001) and Rospabe (2002). It is argued that ownership reduces the geographical mobility of labour force participants, and in some cases may also represent a proxy for wealth that can raise the reservation wage of individuals. When separate regressions were performed for African and White labour force participants, it was found that ownership negatively affected the employment likelihood of Africans, but positively affected employment likelihood of Whites in 1999 and 2000⁸.

Residing in an urban area reduces the chances of finding employment relative to living in a rural area, consistent with hypotheses of labour migration, that argue urban-based job search may be perceived to be more fruitful than rural-based job-search hence causing rural to urban migration. This finding should in no way be interpreted as evidence of some relative improvement in living in the rural community with any rural employment likely to be low-skilled, low-paid and unstable⁹.

Labour force participants residing in Western Cape are significantly more likely to find employment than equivalent males in any of the other eight provinces for all of the years considered. Participants residing in Eastern Cape and Limpopo have the least likelihood of finding employment relative to their Western Cape counterparts. By September 2002 the relative position of Limpopo participants had worsened compared with the situation in 1995. Of interest too is the relative worsening in employment likelihood of the economically active in Gauteng over the 8-year period. Whilst in 1995 there was no significant difference in employment likelihood between Gauteng and Western Cape participants, by 2000 and beyond there was a negative and significant impact of residing in Gauteng. This may indicate the continued increase in internal

⁸ This also confirms the findings of Kingdon and Knight (2001) and Rospabe (2002).

⁹ Throughout the analysis the quality of employment/jobs is not considered. This issue has been greatly debated in recent months with the left (e.g. COSATU) arguing for better quality jobs with greater likelihood of economic empowerment through promotion and training, and many businesses and recruitment agencies arguing that relatively new labour market rules and regulations are dampening job creation.

migration to Gauteng from the traditionally poorer provinces of Eastern Cape and Limpopo¹⁰ which increases the supply of labour in Gauteng at a faster rate than any increases in the demand for labour.

Table 2 indicates that as an individual becomes older, the likelihood of being employed increases but at a decreasing rate, which is as expected following previous studies. Seniority rules may protect older workers from younger entrants, with the benefits of firm-specific training/skills contributing to older workers being more relatively more employable. The decreasing rate of employment as workers become older is consistent with diminishing productivity in the work place with formal training/skills declining in relevance, and with less likelihood of being trained in new skills due to proximity to retirement age.

Finally, being married has a positive and significant impact on employment likelihood. Previous studies have debated whether this term should be included in an employment function due to the possible endogenous nature of the variable. Kingdon and Knight (2001) discard this factor, but Rospabe (2002) includes the term, which does significantly increase the likelihood of being employed. This could be because marriage signals individual stability and loyalty that are likely to be attributes sort after by prospective employers, since they may positively impact on job tenure and reduce employment turnover costs. This is consistent with Thurow's (1975) job competition theory in which perceived training costs determines who occupies jobs.

¹⁰ Population Census 2001 reveals a strong migratory trend from rural to urban areas (eg. Limpopo to Gauteng (STATSSA, Census 2001: Key Results).

Table 2: Pooled Employment Probability Likelihood for the Broadly Defined Economically Active Population, 1995-2002

Variables#	1995		1999		2000		2001		2002	
	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test
African	-0.74	-13.89	-0.46	-7.64	-0.45	-7.84	-0.54	-9.81	-0.50	-9.30
White	0.22	3.47	0.57	7.83	0.33	4.58	0.37	5.59	0.47	7.17
Colour	-0.23	-3.90	0.04	0.64	-0.18	-2.72	-0.19	-3.00	-0.12	-1.95
Female	-0.45	-28.60	-0.30	-18.64	-0.25	-15.98	-0.29	-18.70	-0.28	-17.90
Number of Children (age<16) in Household	-0.13	-23.43	-0.08	-15.83	-0.05	-11.57	-0.08	-16.93	-0.07	-14.27
Number of Elderly (age>65) in Household	-0.01	-1.34	-0.30	-14.87	-0.28	-14.31	-0.30	-14.97	-0.25	-12.47
Live in an owned dwelling**	-0.40	-24.39	-0.33	-17.91	-0.40	-21.20	-0.37	-20.15	-0.44	-22.48
Urban location	-0.12	-6.90	-0.04	-1.96	-0.19	-10.39	-0.03	-1.58	-0.08	-4.55
No education	-0.05	-1.65	0.03	0.69	-0.03	-0.59	0.01	0.34	0.12	2.54
Secondary education	0.08	3.47	-0.02	-0.43	0.00	-0.11	0.04	1.11	0.06	1.51
Further education	0.99	20.41	0.64	12.38	0.49	9.84	0.56	11.72	0.65	13.31
Higher education	1.05	11.58	0.86	10.90	0.87	12.68	0.82	12.26	0.95	12.92
Married	0.29	15.96	0.27	14.16	0.27	15.24	0.23	13.40	0.25	14.16
Eastern Cape	-0.37	-10.66	-0.45	-11.27	-0.25	-6.48	-0.18	-4.75	-0.29	-7.70
Northern Cape	-0.17	-4.00	-0.22	-4.79	-0.24	-5.35	-0.24	-5.92	-0.26	-5.87
Free State	0.03	0.75	-0.20	-4.55	-0.25	-5.95	-0.16	-4.02	-0.19	-4.67
Kwazulu-Natal	-0.11	-3.18	-0.15	-3.65	-0.17	-4.19	-0.19	-4.90	-0.16	-4.27
North-West	-0.06	-1.48	-0.28	-6.71	-0.39	-9.49	-0.23	-5.86	-0.27	-6.94
Gauteng	-0.02	-0.61	-0.27	-7.03	-0.25	-6.20	-0.19	-5.21	-0.31	-8.22
Mpumalanga	-0.11	-2.67	-0.19	-4.36	-0.17	-3.84	-0.05	-1.29	-0.15	-3.58
Limpopo	-0.30	-7.05	-0.44	-9.95	-0.42	-9.56	-0.31	-7.63	-0.46	-11.05
Age	0.08	15.72	0.09	17.06	0.07	15.85	0.11	23.11	0.11	21.90
Age Squared	0.00	-11.17	0.00	-11.09	0.00	-8.66	0.00	-16.08	0.00	-15.16
Constant	-0.17	-1.63	-0.71	-6.11	-0.42	-3.79	-1.25	-11.60	-1.14	-10.35
F-Test	292.51		285.96		218.66		258.25		248.52	
Observations	44,649		38,717		42,035		42,931		41,540	
Raised Sample	14,114,252		15,700,366		17,582,991		17,999,150		18,540,658	

Note:# the normalizing variables for the education and provincial categories are Primary Education and Western Cape. ** In 1995 the question regarding house ownership included owning both dwelling and site and owning just the dwelling. For all other years, ownership is for dwelling only. * indicates statistical significance at the 1 per cent level.

Observed and Predicted Employment Probabilities and Decompositions

Table 3 reports the observed and predicted probabilities of being employed by racial group, with decompositions also available. The observed and predicted probability gaps between Whites and non-Whites have increased year on year over the 8-year period. The anticipated racial hierarchy in employment likelihood is also revealed with Whites most likely to be employed followed by Asians, Coloureds and Africans. Whilst in 1995 the White-African observed probability gap was 32.4 per cent, by 2002 this figure had increased by 7 per cent to 39.3 per cent. Similar findings are reported for Coloureds and Asians, with EA Asians having encountered a relative decline in employment probability compared with Whites from 6.8 per cent to 16.0 per cent between 1995 and 2002. The increasing White-African employment probability gap is largely determined by the unexplained term, which has increased from 12.0 per cent to 17.4 per cent. As a share of the observed employment likelihood, the unexplained component remains around the 37 per cent level between 1995 and 2002¹¹. The findings are similar for Coloured and Asian participants. Whilst in 1995 Coloured labour force participants encountered a 4.7 per cent unexplained employment likelihood differential with White participants, by 2002 this had increased by 6.7 per cent. Following the logic of Altonji and Blank (1999) this is interpreted as an increase in racial employment discrimination over time¹². The equivalent change over time for the White-Asian unexplained differential is 4.6 per cent.

A decline in the explained share of White-Coloured and White-Asian employment likelihood is also observed in the same period. In 1995, 74.3 per cent of the observed White-Coloured employment likelihood gap was explained, with this shrinking to 45.3 per cent by 2002. The equivalent White-Asian estimate has decreased from 86.1 per cent to 65.5 per cent in the same period. When the explained component is decomposed further the relative position of African and Asian participants declines in the period. Asian labour force participants having seen a relative worsening in the explained probability of being employed from being 5.8 per cent less likely to be employed than an equivalent White participant in 1995, increasing to a gap of 10.5 per cent in 2002. Coloured participants have observed an improvement in the White-Coloured explained probability gap, from 13.6 per cent to 9.5 per cent between 1995 and 2002. Accordingly if there were zero racial employment hiring discrimination in 2002 Coloured labour force participants would be the second most likely racial group (behind Whites) to be employed in South Africa.

¹¹ This proportion of the observed racial employment likelihood gap are higher than those of Kingdon and Knight (2001) for reasons of the variables used in the employment model. Since we have used both OHSs and LFSs, certain variables could not be used since they were not contained in both data sets, or the relevant question had changed.

¹² Altonji and Blank (1999) argue that decomposing *wage* changes over time between groups should be based on the assumption that any change in the residual or unexplained wage term is attributed to wage discrimination. This assumption has been challenged by Juhn et al (1991) who argue that some of the change in the residual wage term could be due to changes in the returns to these characteristics and/or changes in the racial distribution of the unexplained characteristics within the group of workers. Allanson and Atkins (2001) implement the Juhn et al (1991) idea to allow the decomposition of racial wage differentials

The fact that the observed racial likelihood employment gap between Whites and Blacks has increased between 1995 and 2002 and that the explained relative employment likelihood gap has been relatively stable for Africans, has improved for Coloureds and declined for Asians necessarily means that the unexplained component, representing an upper limit on employer discrimination and/or employer nepotism, is responsible for the majority of the racial employment likelihood increase¹³.

Employer nepotism in favour of White participants increased from a 1995 level of 9.0 per cent to 14.9 per cent in 2002. Employment hiring discrimination against Africans remained around the 2-3 per cent level throughout the period. The unexplained disadvantage to Coloured and Asian labour force participants does not portray a consistent pattern, and interpretation of these estimates is not attempted for this reason. The 6 per cent increase in the unexplained White advantage indicates that despite affirmative action labour market legislation, White labour force participants still have a large and increasing advantage in employment likelihood.

The unexplained term has been interpreted so far as an upper limit on racial employment discrimination. This is due to omitted variable bias being present in the estimated employment model due to missing or inconsistent data on variables such as ability, attitude, pre-labour market discrimination (e.g. schooling quality), parent's occupations and social networks. Case and Deaton (1998) find that schooling quality in apartheid South Africa was much poorer for Africans than for Whites, stemming from the Bantu Education Act that encouraged only minimal learning/schooling in line with occupational colour-barring policies of the time¹⁴. Job expectations too would have been lowered in the apartheid period amongst African workers, which could well have impacted on human capital investment of children. These factors could well act as a signal to employers of schooling quality that take a racial line due to the legacy of apartheid. A form of statistical discrimination and/or employer discrimination may emerge from this signal that places all African labour force participants in a low-quality schooling category, that may reduce employment likelihood.

over time using a non-discriminatory approach. The same has yet to be done for the decomposition of racial employment likelihood differentials over time, and is the subject of future work.

¹³ These findings are not consistent with those of Rospabe (2002) since we include females in our sample as well as Coloured and Asian labour force participants. When the analysis was repeated using only White and African male participants in 1999, the decomposition results of Rospabe are confirmed.

¹⁴ Higher pupil-teacher ratios are associated with lower test scores and lower likelihood of being enrolled in education, and with the pupil-teacher ratio being twice as high in Black schools than White schools, the implication is for continued racial qualitative differences in schooling. The Case and Deaton study was based on data sources from the 1994 period, and of significant importance would be to understand whether the racial qualitative gaps are still apparent, 10 years after the first democratic elections. However, Allanson and Atkins (2002) argue that the school quality term used in this analysis does not control for school quality on the current labour force, since there is no information on where workers attended school in the past.

VII CONCLUSION

The aim of this paper was to estimate whether the probability of employment gap between White and African, Coloured and Asian labour force participants had changed between 1995 and 2002. For each of the four years the expected racial employment likelihood hierarchy emerged, with Whites more likely to be employed, followed by Asians, Coloureds and Africans. The initial findings confirmed official statistics and independent studies in that unemployment rates (both official/narrow and broad) increased in the period. Using a probit employment function comprising of consistent variables for the five years of data used and through decomposing the observed employment likelihood figures into explained and unexplained terms, it was found that the upper limit estimate of White-African employment discrimination had increased absolutely from 12.0 per cent to 17.4 per cent between 1995 and 2002. The equivalent estimates for White-Coloured and White-Asian employment discrimination increased from 4.7 to 9.5 per cent and from 0.9 per cent to 5.5 per cent respectively. Whilst for all racial groups the observed likelihood of being employed declined in the period, the probability gap between White and non-White groups increased, signalling a worsening employment likelihood of African, Coloured and Asian economically active individuals relative to Whites. When the observed racial employment probability gaps were decomposed further, it was found that Whites were benefiting more from both unexplained advantages in 2002 than 1995, increasing from 9.0 per cent to 14.9 per cent, and from explained employment likelihood characteristics, increasing from 15.8 per cent to 18.0 per cent relative to the average (pooled) economically active individual.

In a period of affirmative action labour market policies this result indicates that little has changed regarding the employment likelihood for the non-White economically active and in particular the Africans. It seems then that reverse discrimination employment hiring policies have been ineffective in curbing the labour market inequalities of the past. The finding that approximately 37 per cent of the observed White-African employment probability gap could not be explained in 1995 is far higher than previous findings by Rospabe (2002) and Kingdon and Knight (2001) and can be explained by differences in employment model used. In particular since the current study uses both OHSs and LFSs to test whether employment discrimination has increased over time, a number of variables had to be dropped from the probit model to ensure consistency in the interpretation of the model for each year. The paper focuses on changes in employment likelihood, and finds that the position of Africans, Coloureds and Asians has declined when compared to White labour force participants, with this due mostly to White advantages.

This advantage is due to a number of factors. From the analysis, it is clear that greater education and experience, as well as better household composition are important supply-side factors. On the demand side of the labour market, nepotistic hiring employment practises still appear to exist. There are also omitted

variables that are not controlled for in this paper that include racial qualitative differences in education/schooling (a form of pre-labour market discrimination), differences in labour market information, access to labour market information, social network differences (with labour force participants tending to same-race network) and differences in labour market expectations. The issue of household/family financial constraints in sending children to school is of particular importance in a country still characterised by a two-tier (largely racial) secondary education system. Another important issue in the current South Africa is the qualitative differences between higher education institutions. Historically disadvantaged universities (HDUs) struggle with out-of-date technologies whilst attempting to compete with historically advantaged universities (HAUs). The recent merger agreements of some HAUs and HDUs may help address this problem but this may simply create a new two-tier higher education system. If included all of these factors would be expected to influence employment likelihood and reduce the size of the unexplained component.

Whilst there is a general view in South Africa that racial employment gaps are being reduced through affirmative action employment practices, this may only be occurring in large-sized firms. Such firms have more transparent employment practices due to the sheer size of workers employed and have more to lose if found in violation of labour law. The Commission for Employment Equity (2003, pp45) find that a number of large firms (generally employing more than 150 workers) “made progress in the implementation of the Employment Equity Act”, but that “affirmative action measures....are superficial...and generic. This creates the impression that no real affirmative action will take place”. Given these problems in affirmative action employment practises amongst large firms, and with over 70 per cent of employed males in 2002 working for small or medium sized firms, the findings from this study are not altogether unexpected. Greater monitoring of hiring processes is required if affirmative action policies are to have an impact. A credible increase in monitoring is highly unlikely to be realised though, with the Department of Labour incurring massive operational costs in observing employment hiring practices amongst medium and small sized companies. A way around this problem is to give economic incentives to such firms to adopt affirmative action hiring practices, through credible threats of action in the form of heavy fines. If these fines are not deemed credible then an alternative approach would be to increase the benefits (utility) of firms who hire Black workers instead of White workers, through tax incentives.

It is clear from this study that affirmative action employment policies are currently not working. Whilst this study does not distinguish between formal and informal sector employment, it is the case that the majority of informal sector workers and informal sector businesses are non-White and in this it can be assumed there is little (if any) racial discrimination in employment hiring practices. Without addressing the racial supply-side differences in South Africa (e.g. schooling quality and quantity), and demand-side differences based on

racial and statistical discriminatory attitudes, any long-term, market-correcting solution to the labour market inequalities caused by apartheid will not be forthcoming. This has serious implications for the economic empowerment of non-White individuals and particularly Africans in a labour market where demand has shifted from lower-skilled labour towards an increasingly high-skilled labour force with little indication of effective re-training programmes.

Further investigation into the effectiveness of affirmative action policies needs to isolate those members of the labour force who have been employed since the Employment Equity Act (1999) was implemented. This would best be achieved by using a panel data source, which presently does not exist at a national level in South Africa. A second best alternative would entail the assumption that workers employed after 1999 had to have survived the rigours of affirmative action policies to fill the job. The effectiveness of this legislation in tackling the inefficiencies of the past could then be tested.

Table 3: Decompositions of Employment Probabilities by Racial Group, 1995-2002

Observed/Predicted Probabilities	October 1995					October 1999					September 2000				
	All	African	Colour	Asian	White	All	African	Colour	Asian	White	All	African	Colour	Asian	White
P_i	70.29	62.19	76.25	87.87	94.62	63.46	56.67	76.71	81.58	93.18	62.87	58.27	73.04	80.36	91.15
\hat{P}_i	69.81	65.21	71.97	79.80	85.61	63.55	59.74	71.90	72.68	79.33	63.03	60.14	70.56	71.58	79.64
Decompositions		White-African	White-Colour	White-Asian			White-African	White-Colour	White-Asian			White-African	White-Colour	White-Asian	
$P_w - P_b$		32.430	18.37	6.75			36.510	16.47	11.60			32.860	18.11	10.79	
$\hat{P}_w - \hat{P}_b$		20.400	13.64	5.81			19.590	7.43	6.65			19.500	9.08	8.06	
$(P_w - P_b) - (\hat{P}_w - \hat{P}_b)$		12.03	4.73	0.94			16.92	9.04	4.95			13.36	9.03	2.73	
$P_w - \hat{P}_w$		9.010	9.010	9.01			13.850	13.850	13.85			11.510	11.510	11.51	
$\hat{P}_b - P_b$		-3.02	4.28	8.07			-3.07	4.81	8.90			-1.85	2.48	8.78	
$\hat{P}_w - \hat{P}_p$		15.80	15.80	15.80			15.78	15.78	15.78			16.61	16.61	16.61	
$\hat{P}_p - \hat{P}_b$		-4.60	2.16	9.99			-3.81	8.35	9.13			-2.89	7.53	8.55	

Observed/Predicted Probabilities	September 2001					September 2002				
	All	African	Colour	Asian	White	All	African	Colour	Asian	White
P_i	57.99	52.10	68.64	77.07	90.55	58.57	52.03	70.33	75.25	91.29
\hat{P}_i	58.28	54.83	65.49	66.12	76.84	58.43	54.56	66.92	65.90	76.41
Decompositions		White-African	White-Colour	White-Asian			White-African	White-Colour	White-Asian	
$P_w - P_b$		38.480	21.96	13.44			39.250	20.95	16.04	
$\hat{P}_w - \hat{P}_b$		22.010	11.35	10.72			21.850	9.49	10.51	
$(P_w - P_b) - (\hat{P}_w - \hat{P}_b)$		16.47	10.61	2.72			17.40	11.46	5.53	
$P_w - \hat{P}_w$		13.740	13.740	13.74			14.880	14.880	14.88	
$\hat{P}_b - P_b$		-2.73	3.13	11.02			-2.52	3.42	9.35	
$\hat{P}_w - \hat{P}_p$		18.56	18.56	18.56			17.98	17.98	17.98	
$\hat{P}_p - \hat{P}_b$		-3.45	7.21	7.84			-3.87	8.49	7.47	

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