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Female Wages and Occupational Advance under Black Economic Empowerment in South Africa

Abstract

Using South African Census Data from the IPUMS international database, this study examines the effect of the Black Economic Empowerment (BEE) policy on the South African gender wage disparity. The policy launched by the ANC party in 2003 aims to not only address the racial disparities created by Apartheid, but to create employment equity for women and encourage their advance into managerial positions. This study uses an OLS regression to study the annual income of females before and after BEE was implemented. The results show the wage gap between men and women to have decreased by 1.39%. Furthermore, when looking at occupational advance, the results show women to be 3.37 percentage points more likely to be in managerial positions after the policy.

I. Introduction

Following World War II, countries all across Africa slowly gained independence, leaving newly formed governments with the task of addressing the vast racial inequalities that were created by the European colonies. In South Africa, 1994 marked the end of a fifty-year-old racial segregation policy called *Apartheid*. At the end of Apartheid, the control of businesses and land ownership typically rested in the hands of the white minority. For instance, despite being four times as large, the black population was allocated 13% of the land compared to the 87% belonging to the white population in the 1970s (Leonard, 1984). However, the same income inequality has also been observed between males and females and it is recorded that two out of three discouraged work seekers in South Africa are women (Nding'u, 2010). When the new ruling party, the ANC, first implemented the empowerment policies, pressure was put on them to also include the advancement of women. The most prolific policy to date that has been able to address these multiple disenfranchised groups is the Black Economic Empowerment (BEE) Act. This policy that was implemented in 2003 appeals directly to businesses to develop viable empowerment models based on a 100 point system that is highlighted in Table I.

The government has established the '7 BEE Elements' which are a set of criteria for companies to address in regards to minorities. The criteria include; ownership; management control; employment equity; skills development; preferential procurement; enterprise development; and socio-economic development. The companies are then graded to give a total out of 100 and are consequently given a level grading with *Level 1* being the highest achievement and companies earning less than 30 points not being credited at all. In order to create the incentive, the South African government has been know to contract companies with the highest scores, consequently giving them a competitive edge. Government charters have determined target employment levels for women and specify that companies must have a percentage of women in management. For instance, the financial services charter targets that 4% of executive managers in a company should be women (International Finance Cooperation, 2011). Consequently, by hiring women and promoting them to higher positions companies have the potential of earning additional points on their scorecard. This paper examines whether BEE has in fact facilitated women's progress in the work place using both an OLS regression and a linear probability model.

In order to assess the income of women before and after the policy, I perform an OLS regression with the natural log of annual income as the dependent variable. The results suggest that females earned, on average, 43.9% less than males before the policy and this wage gap decreases by 1.39% post 2003. The second methodology looked at occupational advance of women using a linear probability model. The results suggest that, when compared to men, before BEE women had been approximately 1% point less likely to be in managerial positions but they are 2.4 percentage points more likely to be managers post policy.

II. Black Economic Empowerment

Apartheid, which comes from the Afrikaans word for apartness, was a political slogan of the leading National Party in the 1940s and later became an institutionalized practice in the 1950s after a number of laws were introduced. Primarily, the Group Areas Act (1950) assigned races to different residential and business sections in urban areas. Later, the Land Acts of 1954 and 1955 restricted nonwhite residences to specific areas. These laws officially restricted nonwhites from desirable land, particular job categories and high-level education. The resulting disparity between Whites and Blacks is represented in Table II.

However, led by President F.W de Klerk, 1990 saw the National Party reform and legalize formally banned black congress and release imprisoned black leaders. Now, with apartheid laws officially dismantled, new laws have been introduced to try and reverse the ramifications of the early National Party legislations. Black Economic Empowerment (BEE) was first implemented to increase the share of workers in disenfranchised groups that manage, own and control enterprises (Mpahlwa, 2004). However, this first focus attracted a lot criticism as observers felt the policy was being used to only benefit an elite few (Speckman, A, 2011). Consequently additional goals have been established that aim to improve lower income individuals as well as the long-standing gender disparity. However, much of the BEE media attention has been focused on the equity sales to black empowerment groups and black investors (Sartorius and Botha, 2008). The emphasis on equity transfers is represented in the literature as most studies have looked directly at these transactions. Sartorius and Botha (2008) conducted a detailed survey of 62 companies listed on the Johannesburg Stock Exchange (JSE). The authors wanted to measure the participation of firms in BEE transactions, understand the motivation for participating firms, and trace the source of funding for the transactions. They found the majority of companies transferred less than the required 25% of equity to BEE partners. They also found that funding for the equity transfers came from third party sources or the respondent firms themselves. As for motivations, the authors found participating firms supported the social objectives behind BEE and only considered the profit potential second.

Using data from Business Map Black Economic Empowerment Database, Jackson et al (2005) looked at how the price of a firm's equity changed after they announced their BEE transaction. These authors hypothesized a BEE announcement could have two opposing effects. They first hypothesized that the announcement of black economic empowerment deals would result in positive media attention, awarding them a competitive advantage that would then lead to a positive reevaluation of the firm's market value of equity. The authors also argue that participating in BEE deals gives firms the benefit of key social and economic contacts of the black empowerment groups and access to opportunities provided by the public sector.

On the other hand, the authors were aware of the possibility of firms being negatively reevaluated after a BEE announcement. Investors could have anticipated that white managers will be replaced with less qualified minority managers, resulting in mismanagement of firms.

They find results are in favor of their first hypothesis, suggesting that, on average, announcing firms experienced a 2% increase in market value of equity amongst announcing firms. Furthermore, this increase in equity value increased proportionally to the equity transferred. Whilst the paper by Jackson et al shows favorable results for some BEE critiques, it stirs up another query; that BEE has only been beneficial for the highly educated, politically connected few. Consequently, instead of just focusing on those directly involved in BEE equity transactions, this present study assesses the effect of the policy on the labor market, paying particular attention to women.

III. U.S Affirmative Action as a Model

BEE has often been compared to the U.S Affirmative Action policy as it equally addresses racial and gender inequalities that pervade the country. In America's not too distant past, Affirmative Action was a hotly debated subject and a number of papers were written that addressed policy effects on the labor market. Affirmative Action, like BEE, was a combination of legislation and court rulings that tried to erase the differences between women and men, minorities and non-minorities. Since 1961, there have been a number of key executive orders, regulations and court decisions that encapsulated the program. First, the executive order, 10925, required government contractors not to discriminate against employees or job applicants. In 1964, Title VII of the Civil Rights Act established the Equal Employment Opportunity Commission (EEOC) to monitor compliance. Many economists have focused their studies by comparing the wages of non government and government contracted companies that were directly subject to governmental penalties and monitored by the EEOC. In 1967, the executive order was extended to include women and many economists studied the gender wage gaps thereafter.

James Smith and Finis Welch (1984) created summary statistics observing minority employment over a 15-year period. Using data from the Current Population Survey (from 1967 to 1981), the authors first looked at the wages of minorities relative to the economically dominant group and found a narrowing wage disparity between black and white men as the wage of black men was 75% of the white men in 1981, compared to the 60% in the late 60s. They also found that amongst whites, there has been, quite remarkably, no change in relative male and female wages. The contrast between the black women and white women is most significant. In 1967, the average black woman earned 74% of the wage of a similarly employed white woman and yet the authors found complete racial wage parity at the time of the study in 1984.

Next, the authors studied to see if EEOC monitoring significantly altered the location of minority employment in the labor market, anticipating that minority representation and occupational level should expand more for government contracted firms that were required to report to the EEOC. They found that all four demographics showed larger percentages of managers and professionals after the order, however, minorities showed a more rapid improvement. The proportion of blacks that self reported as managers or professionals expanded threefold between 1966 and 1980. Furthermore, in 1966, 1 out of 5 black male managers in the dataset were employed by monitored firms. However, by 1980 nearly half of the black managers in the data set were employed by monitored firms. For black females it was 1 in 5 managers that were employed by monitored firms and this ratio increased to 2:3 by 1980. One suggestion the authors provided was these results could also be from the reclassification of jobs as the proportion of white males in managerial positions also increased, suggesting in general the monitored section became more managerial than professional over the time period.

Jonathan Leonard (1984) focused his research on whether Affirmative Action was able to move minorities up the job ladder. Leonard constructs an occupational index for each demographic group and compared its growth across contractor and non-contractor establishments. Leonard's index weighted the proportion of members of a given demographic group in an occupation. In his equations for occupational growth he controls for employment growth by demographic group. He posited that if affirmative action has led to black or females being employed in higher paying jobs, then this index should increase faster at contractor firms. Leonard found that black male's occupational index increased by 2% between 1974 to 1980 for non-contractor firms, and an additional 1% for reviewed establishments. Like Leonard my interest was to assess the notion of occupational upgrade, however, I use a linear probability model to test the likelihood females were found in managerial positions before and after the policy were implemented.

Leonard continued his studies in 1996, this time extending his work to look at wage disparities in the 1980s, estimating wage equations by industry and city by sampling 41 industries and 113 cities. Leonard here asked how the pay of women, blacks, Hispanics, Asians and Native Americans was related to non Hispanic whites with similar productive characteristics. He found that between 1980 and 1990, the wage gap for women declined by 7.6 percentage points but that wage gaps deteriorated by 2.5 percentage points for blacks and by 4.1 percentage points for Native Americans. He also found that changes in wages varied greatly across cities and that reductions in the wage gap for one group was not always matched by similar reductions in another group, disproving the claim that some cities reduced discrimination across the board. As for the industry level analysis, Leonard found relative wages of women, blacks and Native Americans moved in tandem with their respective employee share across the industry. Similarly, I will extend my work to address gender wage disparities in South Africa using an OLS model.

III. Data and Specification

I use South African individual level census data from the year 1996, 2001 and 2007 retrieved from the IPUMS international website and published by the Minnesota Population Centre (2010). The data included 1.5 million observations of the employed working age respondents (ages 18-65), with variables for technical, geographical, constructed family interpersonal relationships, demographic, nativity, birthplace, ethnicity, language, education, work and income variables. Because income was given at the nominal level, the South African CPI was used (Statistics South Africa, 2011) to convert these values to real values. Summary statistics for each year are included in Appendix Table III and Table IV includes the distribution of employees in by occupation.

In order to analyze the effect of BEE on women, I estimate a pooled wage equation with $\ln(\text{income})$ as the dependent variable.

$$\ln(\text{income})_{it} = \beta_0 + \beta_1 \text{nonwhite}_{it} + \beta_2 2001 + \beta_3 2007 + \beta_4 \text{nonwhite} * 2007 + \beta_5 \text{yrsedu}_{it} + \beta_6 \text{exper}_{it} + \beta_7 \text{female}_{it} + \beta_8 \text{female} * 2007 + \beta_9 \text{femalech}_{it} + \beta_{10} \text{spouse}_{it} + \beta_{11} \text{mother}_{it} + \beta_{12} \text{nchildren}_{it} + \text{uit}$$

I also use proxies for productivity including the number of years an individual was educated (*yrsedu*) and their years of experience (*exper*). I then extended the model by including a number of variables that explain a female's ability to work by including a dummy variable if she

is married (*spouse*) or has a child under the age of five (*childu5*), also including an interaction term; $\text{female} * \text{chu5}$ in the equation. I also include a dummy variable to consider if the respondent's mother lives at home (*mother*), which is perhaps influential on the ability of a woman to have a career and still raise her children. Lastly, for one regression, I specified the model including provincial dummy variables. South Africa is divided into the nine different provinces that are included in Table IV. Each province has its own government and unique economy that could influence the results of the study and so, I control for the provinces using Limpopo as the reference group.

Next, I addressed the issue of occupational advance using a linear probability model. To carry out this analysis, I created a dummy variable, *managers that* took a value of one for legislators, seniors, managers and professionals. The remaining occupations that were labeled *nonmanagers* are listed in Table V.

I subsequently regressed the manager variable on the same independent variables as before.

$$\text{manager}_i = \beta_0 + \beta_1 \text{nonwhite}_i + \beta_2 2001 + \beta_3 2007 + \beta_4 \text{nonwhite} * 2007 + \beta_5 \text{yr} \\ \text{seduit} + \beta_6 \text{experit} + \beta_7 \text{female}_i + \beta_8 \text{female} * 2007 + \beta_9 \text{femalechu5}_i + \beta_{10} \text{spo} \\ \text{use}_i + \beta_{11} \text{mother}_i + \beta_{12} \text{nchildren}_i + \text{uit}$$

IV Results

The results for the OLS regression are shown in Appendix Table VI, columns I, II and III. Column III of Tables 5 and contains the key results. All coefficients were found to be statistically significant at the 1% significance level. The reference group for this regression was white men. Results show the variables to have the expected positive coefficient. The coefficients on the non-white and nonwhite2007 variable were large, therefore, I convert the estimates as follows:

$$e^{\beta_i - 1} = \beta_i$$

Therefore, nonwhites earned, on average, 62.7% less than whites before the policy. After the policy nonwhites earned, on average, 74.6% than whites, showing an increasing wage disparity. Years of education and years of experience are all positively correlated to the annual income. Results also show that females earned, on average, 43.9% less than men before the policy and this wage gap decreased by 1.39%. There were a few counterintuitive results: the coefficient on female with children under the age of five had a positive coefficient with women with children under the age of five earning 4.01% more than those without. However, reading van der Westhuizen et al's survey on the South African labor force (2007), we learn women ages 23-34 had the biggest share in the total labor force growth. This is the age group where women are most likely to have young children and could explain how these two trends are related. It was also counterintuitive that having a mother present in the house decreased the average income. I found the positive coefficient on the rural variable to also be counterintuitive. The effects of urban vs. rural in South Africa on wages has two dichotomous effects. On one hand, rural areas, without central business locations and an abundance of employment opportunities should depress wages for rural observations. However, the proliferation of townships around urban areas must also be considered as they usually house some of the lowest socio economic groups, which

would explain rural areas having, on average, higher salaries of 38.7%.

When evaluating occupational upgrade (Table VII, column III), we see a reverse in the rural coefficient; living in the rural areas decreases the probability of being a manager by 1.28 percentage points. This result is supported by the fact that rural areas are less likely to have job establishments that would have legislators, managers and professionals even though their income could be comparable, the job type and occupations is likely to be different. Results for nonwhites tell a similar tale as the income regression; nonwhites were less likely to be in managerial positions by 12 percentage points and about 17.5 percentage points less likely after policy change. Females again experienced an improvement as they were less likely to be managers than white males by 0.92 percentage points but 2.4 percentage points more likely to be managers after the policy. Results also show that Limpopo employees are more likely to be managers than any other province.

V. Conclusion

The results indicate that, thus far, BEE has had a positive, statistically significant impact on the wages of female employees and there is also female occupational upgrading as the likelihood that women are managers increased after the policy. Other suspected determinants of women's ability to work had opposite effects than expected with females with children under the age of five having an increased annual income than those without.

The results for nonwhites are not positive and in fact an increased income inequality is experienced between whites and nonwhites. These results were the most surprising and may support the outcry that the effects of BEE are not being experienced in the labor market and only by the elite. The province level data showed wages to be higher in Gauteng, North West and the Western Cape than the control group, Limpopo. However, the linear probability model showed Limpopo had the highest probability of having employees in managerial positions.

By taking a closer look at the labor market, these results add to the literature on Black Economic Empowerment. The results show the policy to be effective thus far for women showing them to be more likely to be managers than men after the policy. However, the effects have not extended to the wage disparity, although the wage gap has decreased, it still shows women to earn considerably less than men. For nonwhites, there seems to be a growing income inequality which is of a concern. This information might help governments reevaluate their scorecards to target areas that have seen the least improvement. Lastly, this study was limited by the sample as only employed people were included and I couldn't analyze the trends in labor force participation in relation to BEE. As a result, further insights can be gained from incorporating the 2011 South African Census data once it is published at the end of this year.

Appendix**Table I. The 7 BEE Elements and Score card (BEESA Consulting, 2011)**

Criteria	Point Value
Ownership	20
Management Control	10
Employment Equity	15
Skills Development	15
Preferential Procurement	20
Enterprise Development	15
Socio- Economic Development	5
	100

Score	Level	Recognized
100	1	135%
85-100	2	125%
75-85	3	110%
65-75	4	100%
55-65	5	80%
45-55	6	60%
40-45	7	50%
30-40	8	10%
<30	NC	0%

Table II. South African Racial Disparity 1970s (Leonard, 1980)

	Black	White
Population	19 million	4.5 million
Land Allocation	13 percent	87percent
Share of National Income	< 20 percent	75 percent
Ratio of average earnings	1	14
Min taxable income	360 Rands	750 Rands
Doctor/population	1/44,000	1/400
Infant Mortality Rate	20 percent (urban) 40 percent (rural)	2.7 percent
Annual Expenditure on education per pupil	\$45	\$696
Teacher/ Pupil Ratio	1/60	1/22

Table III. Summary Statistics

year	Average age	Female	Male	Race	Mean income (Rands)	Years educated
1996	36.8	282,575 (40%)	420,776(60%)	White	R739506	11.8
				Black African	R201307	7.10
				Coloured	R379037	8.10
				Asian	R401297	10.4
2001	37.5	296,903(43%)	398,579(57%)	White	R103666	12.0
				Black African	R19490	7.78
				Coloured	R25839	8.68
				Asian	R52929	10.9
2007	38.0	83,595(43%)	111,685(57%)	White	R1462736	12.6
				Black African	R551008	8.53
				Coloured	R947925	11.7
				Asian	R1217988	8.73

Table IV. Summary Statistics: Province and Occupation Variables

<u>Observation by Province</u>		
Western Cape	252,251	
Eastern Cape	134,746	8.44%
Northern Cape	41,248	2.58%
Free State	113,126	7.08%
Kwazulu – Natal	253,008	15.8%
North West	131,411	8.23%
Gauteng	464,947	29.1%
Mpumalanga	105, 728	6.62%
Limpopo	100,648	6.30%
<u>Observation by Occupation</u>		
Legislators, senior officials and managers	81,975	5.27%
Professionals	139, 363	8.96%
Technicians	123,722	7.96 %
Clerks	148,587	9.56%
Service Workers and shop and market sales	159,224	10.24%
Skilled Agriculture and fishery worker	55,902	3.60%
Crafts and Related trade workers	212,159	13.65%
Plant machine operators	140,495	9.04%
Elementary Occupation	436,454	28.07%
Armed Forces	2,990	0.19%
Unknown	53,817	3.46%

Table V. Occupation Categories

Managers	Non-managers
Legislators, Seniors and Managers	Technicians and Associates
Professionals	Clerks
	Service Workers and shop market sale
	Skilled agricultural and fishery workers
	Crafts related trade workers
	Plant and machine operators
	Elementary occupations
	Armed forces

Table VI. OLS Regression

Variables	I	II	III
Intercept	8.78(1409)***	8.73(1409)***	8.75(1192)
Nonwhite	-1.00 (-323.76)***	-0.987(-314.9)***	-0.987(-312)***
d2001	-0.137(-61.68)***	-0.125(60.9)***	-0.141(-64.2)***
d2007	0.970(107)***	0.977((108)***	0.986(109)***
nonWhite2007	-0.378(-41.31)***	-0.374(-40.8)***	-0.383(-41.9)***
Yrsedu	0.142(431)***	0.139 (419)***	0.138(415)***
Exper	0.0191(186)***	0.0171(152)***	0.0174(155)***
Female	-0.465(195.2)***	-0.441(-182)***	-0.439(-182)***
female2007	0.0246(3.79)***	0.0183(2.80)***	0.0139(2.15)***
femalechu5	0.102(24.84)***	0.0385(9.03)***	0.0401(9.41)***
Rural	0.387 (155.8)***	0.3822 (153.53)	0.340 (125)***
Mother		0.0436(13.12)***	0.0401(12.08)***
Spouse		0.126(51.07)***	0.123(50.20)***
Nchildren		0.0192(23.98)***	0.0210(26.13)***
Eastc			-0.138(-24.9)***
Northc			-0.120(-15.7)***
Westc			0.102(20.0)***
Fstate			-0.344(-59.8)***
Kwazulu			0.0436(8.75)***
Mpumalanga			-0.0240(- 4.16)***
Northw			0.0393(7.17)***
Gauteng			0.106(21.65)***
R ²	0.3282	0.3303	0.3366
Reference group: White men			
*** 1% significance			
Level (t stats)			

Table VI. Linear Probability Model

Variable	I	II	III
Intercept	-0.0855(-57.9)***	-0.0831(-54.3)***	-0.0470(-25.8)***
Nonwhite	-0.123(-160)***	-0.120(-155.7)***	-0.120(-46.9)***
d2001	-0.0252(46.0)***	-0.0249(-45.3)***	-0.0258(25.6)***
d2007	0.0560 (-25.0)***	0.0574 (25.7)***	0.0573 (-24.3)***
nonWhite2007	-0.0548 (-24.2)***	-0.0548 (-24.1)***	-0.0552 (-24.3)***
Yrsedu	0.0315(387)***	0.0311(378)***	0.0309(374)***
Exper	0.00345(135)***	0.00305(109)***	0.00302(109)***
Female	-0.00878(-20.0)***	-0.00878(-14.7)***	-0.00928(-15.5)***
female2007	0.0336(21.3)***	0.0336(21.0)***	0.0337(21.0)***
femalechu5	0.0185(25.7)***	0.0185(17.6)***	0.0189(18.2)***
Rural	-0.0167(-25.9)***	-0.0167(-27.1)***	-0.0128(-15.6)***
Mother		-0.0130(-15.9)***	-0.0130(-15.9)***
Spouse		0.0141(23.2)***	0.0152(25.0)***
Nchildren		0.00224(11.3)***	0.00169(8.48)***
Eastc			-0.0319(-23.3)***
Northe			-0.0484(-25.3)***
Westc			-0.0532(-38.2)***
Fstate			-0.0345(-37.2)***
Kwazulu			-0.0305(-27.9)***
Mpumalanga			-0.0372(-21.3)***
Northw			-0.0410(-27.4)***
Gauteng			-0.0469(-33.8)***
R ²	0.1659	0.1668	0.1678
Reference group: White men			
*** 1% significance Level (t stats)			

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