Youth unemployment, firm size and reservation wages in South Africa

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Abstract

Youth unemployment in South Africa is high. We investigate whether one of the reasons may be that the wages young people want or need are above those that they could reasonably expect to earn given their characteristics. Unlike previous work on the relationship between reservation wages and unemployment we differentiate between wages in different sizes of firms. Larger firms pay more and thus, even if reservation wages are similar to average predicted wages they may be above wages that young people could expect to earn in smaller firms. We find that this is the case.

JEL classification
J21, J24, J31, J62, J64

Keywords
Youth unemployment, firm size, reservation wages, South Africa

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1. Introduction

South African youth unemployment is much higher than in most developing countries. In 2005, half of those in the labour force cohort aged 15-24 were unemployed. This is significantly higher than the rate in other countries in sub-Saharan Africa – where approximately 21% were unemployed – and other regions such as North African and the Middle East (25%) and Central and South America (16%) (Bhorat and Oosthuizen, 2007). Youth unemployment matters because it impacts on the lifetime employment trajectory of the individual. Levinsohn (2008) for example shows that once someone finds a job in the formal sector, retention in formal employment is likely. Furthermore, given that overall unemployment levels in South Africa are high a reduction in youth unemployment will reduce aggregate unemployment rates.

There are a number of potential reasons why the general rate of unemployment in South Africa is so high. Banerjee, Galiani, Levinsohn, McLaren and Woolard (2007) find that the high level of unemployment is caused by structural changes to the economy, including an increase in the size of the labour force, changes in production technology and a shift from agricultural production to less labour-intensive sectors. Rodrik (2006) and Kingdon and Knight (2007) argue instead that this is caused largely by labour market regulation that has reduced the demand for unskilled labour. Kingdon and Knight (2001), Cichello, Almeleh, Ncube, and Oosthuizen (2006) and Heintz and Posel (2008) suggest that there are barriers to entry that inhibit the unemployed from entering into the type of self-employment that generally 'mops up' a significant proportion of the surplus labour in other developing countries. Casale and Posel (2002) also point to the increased feminisation of the labour force which has lead to both an increase in the level of unemployment among women and "a feminisation of low-paid insecure forms of employment".

Underlying all these arguments is the implicit conclusion that the wages firms pay (or self-employment generates) and the incomes the unemployed want or need are mismatched given the characteristics of the unemployed and the needs of firms. Two papers examine this mismatch explicitly by comparing reservation wages to potential earnings given the characteristics of the unemployed individual. Kingdon and Knight (2001) use two samples from South Africa as a whole and find that the reservation wages of the unemployed are generally higher than what these people could expect to earn in employment. Nattrass and Walker (2005) in a sample of 1499 working class people in Cape Town conclude that there is no evidence that high reservation wages constrain employment. This paper builds on the ideas of these papers but differs in two key aspects. The first is that it focuses only on the youth – those aged 20-34. This is because of the high unemployment rates among this cohort, the potential dynamic effects of a reduction of unemployment among young people and likely naivety of new labour market entrants which may result in a mismatch between desired and available wages. The second is to introduce a firm size dimension. There is a large body of evidence that regardless of country there is an empirically robust and time invariant size-wage gap - firms with more workers generally pay higher wages to workers with identical observable characteristics than firms with fewer employees (Oi and Idson, 1999). This is important since young people may be basing their desired wages on what they could earn in larger firms but jobs in these types of firms may be limited. If this is the case it may prohibit the growth of smaller firms that pay lower wages. This paper finds evidence to support this.

The paper is structured as follows: Section 2 discusses youth unemployment and reservation wages; Section 3 presents the methodology to be used; Section 4 introduces the data; Section 5 presents the estimation results; Section 6 provides supporting evidence for the findings and Section 7 concludes.

2. Youth unemployment and reservation wages

2.1 Youth unemployment

There is substantial work on the magnitude and causes of youth unemployment globally. The level and variation of unemployment among younger people are directly proportional to that of adult unemployment (Blanchflower, 1999, O'Higgins, 2005). In fact Blanchflower (1999) suggests a rule of thumb – the unemployment rate of youth in developed countries is always twice as high as the rate for adults. Youth unemployment is however, unevenly distributed across the youth cohort. Gender, ethnic origin, regional

differences and both skill and education levels all appear to have an effect on the probability of observing employment (O'Higgins, 2005).

Rees (1986) provides several reasons why youth unemployment is greater than the corresponding rate for adults. Firstly, young people are more likely to exhibit seasonal employment patterns as they enter and exit the labour market between periods they would be otherwise engaged in education. Secondly, they are more likely to quit, or get dismissed, from employment because they are less emotionally mature. Thirdly, they are less well equipped to compete with older workers. Fourthly, they are less risk-averse and may be less dependent on wage income since they are less likely to have families to support and may be receiving financial assistance from their own families. These characteristics diminish the employment prospects of these young people particularly in situations when there is a general excess supply of labour, or when low aggregate demand in an economy leads to firm downsizing and reduction in the number of new vacancies. This is particularly relevant in the South African context (Mlatsheni and Rospabé, 2002).

In South Africa, the investigation of youth unemployment has been from the supply side. Mlatsheni and Rospabé (2002) use the 1999 October Household Survey to investigate the factors associated with unemployment among a sample of 15453 young people aged 15 to 30. They extend the age range from the 15 to 24 range traditionally used in the international literature because they argue that labour force entry in South Africa generally occurs at older ages and that the high unemployment rate in South Africa means that it takes young people longer to find their first job. They find that gender, race, location, age, education, the presence of other wage employed or unemployed in the household, being the head of the household, being married, having children, the duration in the labour force and housing ownership status are all associated with the probability of being in wage employment compared to being unemployed.[1] However, they identify several variables that they do not include in their analysis but which could also have an effect on the results, these include parental background variables and neighbourhood effects. Furthermore, they do not include any employer-related variables or the reservation wage of the individuals. These are, however, likely to play an important role in explaining observed employment patterns.

2.2 Reservation wages

Research into the impact of reservation wages on unemployment has been limited since very few surveys conducted in South Africa ask questions about the wages that the unemployed would hope to earn. However, there are two papers that explicitly examine the relationship between reservation wages and unemployment using different data sets. The first is Kingdon and Knight (2001) which uses the SALDRU data set of 1993 and the October Household Survey of 1994 to investigate a number of aspects of unemployment in South Africa, one of which is the relation between reservation wages and unemployment. The paper predicts what the unemployed would earn given their characteristics and then compares this to their stated reservation wages. While their data shows that the reservation wages of the unemployed are generally higher than what these people could reasonably expect to earn in employment, they are unwilling to draw any conclusions based on this evidence because they believe that answers to this question in the survey were unreliable. They do, however, concede that "young people have little experience of the labour market and may therefore have inaccurate expectations, biased upwards either because of natural optimism or because they adopt a bargaining stance".

The second paper to examine reservation wages and unemployment is Nattrass and Walker (2005). This uses data from a sample of working class people in Cape Town and a question specifically designed to avoid the unreliability of the answer to the question of the reservation wage in other surveys (Nattrass and Walker, 2005). The paper also constructs a measure of the reservation wage for the unemployed but unlike Kingdon and Knight (2001) uses a Heckman selection approach to predict what all respondents would earn if employed. These predicted wages are then compared to the stated reservation wages and a dummy variable created that takes a value of one if the reservation wage is higher than the predicted wage and zero otherwise.

[1] They use the broad definition of unemployment

This dummy is used in a probit regression on whether individuals are employed or unemployed. The coefficient estimate for this variable is negative i.e. reservation wages higher than predicted wages are more likely to be associated with employment and they conclude that this shows that there is no evidence that high reservation wages are the cause of unemployment.

Although, Kingdon and Knight (2001) specifically mention young people in their discussion neither paper confines their sample only to young people. It seems likely that older people who have had previous job experience would be better at estimating what they are worth in the labour market. Other factors rather than reservation wages above likely wages may be associated with unemployment among older people with no previous job experience, the chronically unemployed. Both of these explanations will weaken the relationship between reservation wages and employment in a sample with a broad age range. It is for this reason and because of the high unemployment rates among the young, the potential dynamic effects of a reduction of unemployment among young people and likely naivety of new labour market entrants that we focus on only young people instead.

2.3 Firm size and wages

Oi and Idson (1999) argue that the wage that employees are paid is not only a function of their 'exogenous' productivity but also a function of the characteristics of the firm. There is robust evidence of a firm-size wage gap where workers with identical characteristics are paid more in large firms than in smaller firms. Firm size also matters for search. The size distribution of firms is, as the search-matching-bargaining models of Diamond and Maskin (1979), Mortensen (1982) and Pissarides (1979) and the wage-posting equilibrium search models of Albrecht and Axell (1984) and Burdett and Mortensen (1998) suggest, determined endogenously by the wages that firms have to offer in order to match workers with jobs (Eckstein and van den Berg (2007). According to Eckstein and van den Berg (2007) the underlying reason why differences in reservation wages can generate wage dispersion is that "there is a trade-off between profits per worker and the steady state number of workers per firm." In equilibrium "some firms may choose to set a high wage (giving a large workforce but small profits per worker) while others may prefer to set a low wage (giving a small workforce but high profits per worker)." Thus, desired wages that are equivalent or even below wages that could be earned in larger firms may constrain the development of smaller firms that pay less than these desired wages.

3. Methodology

The methodology we follow is similar to both that of Knigdon and Knight (2001) and of Nattrass and Walker (2005). We use two estimation techniques (OLS and a Heckman two-stage procedure) and three ways of predicting wages to ascertain the robustness of the results. This is important since as Nicaise (2001) points out, in addition to accounting for such unobservable characteristics as ability, the Heckman (1979) selection correction also captures the unobservable effects of the supply and the demand for labour. When, as is the case in search theory, firms have to bid up wages to attract workers the OLS earnings equation will overestimate the earnings distribution where all workers are employed. When, on the other hand, there are demand constraints the OLS equation will underestimate the full-employment earnings distribution.

Our empirical approach is as follows.

1) Estimate both OLS and selectivity-corrected earnings equations for all those in the sample who are in wage employment;
2) Use the coefficient estimates from these equations to predict wages. There are three predictions: OLS, conditional and unconditional. Both the conditional and unconditional approached use a Heckman two-stage procedure. With the conditional prediction "wages were adjusted by the inverse mills ratio (lambda), to account for the probability of the person getting the job." (Nattrass and Walker, 2005: 507) The unconditional prediction, in contrast, does not make this adjustment. The equation coefficients associated with the other characteristics used in the conditional and unconditional predictions are identical;

3) Regress the ratios of the logged reservation wage and these predicted wages against a set of observable characteristics in order to identify the characteristics that may be associated with 'unreasonably' high reservation wages.

We choose to estimate predicted wages using all three of the predictors because the OLS estimator does not, as mentioned, consider those unobservable characteristics that determine participation and because, as Breunig and Mercante (2009) find, the conditional estimator may lead to the under-prediction of wages for certain groups. Vella (1988) nevertheless argues that conditional predictors contain more information than the unconditional predictors do and Breunig and Mercante (2009: 6, 31) therefore suggest that "it may be appropriate to use conditional prediction for the unemployed, where there does seem to be useful information about unobservable influences on [the] wage obtained through the correlation between the participation decision and wages." Yet, in doing so, it is necessary to assume that the distributions of unobservable characteristics are constant over time (Breunig and Mercante, 2009).

Furthermore, we choose not to use the reservation wage, predicted wage ratio or dummy, as an explanatory variable since the three-step estimator for predicted wages where the first step is the Heckman correction is consistent only when the prediction is unconditional (Fernandez, Rodriguez-Poo and Sperlich, 2001) and because the reservation wage and employment are determined endogenously.

Our methodology diverges from previous work on South Africa in that it distinguishes two types of wage employment – employment in firms with up to fifty workers and employment in firms with more than fifty workers. As discussed above, wages are a function of firm characteristics, one of which is firm size. Individuals may not be involuntary unemployed if their reservation wages are above the wages they could earn in smaller firms despite their reservation wages being below the average for all firms.

In this paper we use gender, age and work experience in each firm-size grouping, job tenure, education, and province, as explanatory variable for wages. Education is measured as the number of years of high school and ranges from zero to five (where five is passed the senior certificate examinations). Two dummy variables for further education are included – one for those respondents with a degree or diploma and another for those respondents who obtained a certificate of some kind. The province dummy measures the effect of working outside of Gauteng. Reported monthly or weekly wages are divided by the number of hours worked during this period to obtain wages per hour. The estimation only includes those jobs where the respondent worked thirty or more hours per week. It does not distinguish between informal and formal firms.[2] There are, as mentioned, two firm-size groups – large firms with more than fifty employees and small firms with up to fifty employees. The size-groups have been defined in this way in order to ensure that the sample for each contains more than 100 observations and to minimise measurement error[3].

The selection equation into employment, both generally and for each type of firm size, uses: gender; age; education; whether the head of the household when the respondent was fifteen was unemployed; the number of earners in the household excluding the respondent; whether the respondent was in poor or very poor health; and whether the respondent spoke English very well or excellently. Females are divided between those with children and those with none. The selection sample includes the searching unemployed and those respondents who were employed in the other group. Dubin and McFadden (1984) propose using a multinomial selection model, but results using this approach do not differ significantly from the probit

[2] We have run estimates confining the sample only to those employed by formal firms and the results are similar to those presented in this paper.

[3] Of the 440 searching unemployed observations, approximately fourteen percent of the respondents did not provide answers to the questions used or indicated that they wanted to work for less than thirty hours a week. Twenty-one percent of those working for someone else did not provide answers or indicated that they worked for less than thirty hours a week. A probit regression of these against the remaining observations shows that significantly more of the respondents outside Gauteng fall into this group, and that 'attrition' is negatively correlated with school education

selection equation and are not reported here. The selection sample in each case includes the searching unemployed and those employed in the size-type. In other words, the estimation of the large-firm wage for instance controls for selection into large firms when compared to the searching unemployed. The non-searching unemployed have not been included because, even if they are discouraged, they are not likely to influence wage-setting by firms.

4. Data

This paper uses data from the South African Young Persons Survey (SAYPS). The SAYPS was conducted between July and November 2006 in three provinces: Gauteng; KwaZulu-Natal and Limpopo. The survey concentrated on the Greater metropolitan areas of Johannesburg and eThekwini, the town of Polokwane and the adjacent rural area of Dikgale in Limpopo. Selection was done randomly within clusters and these clusters were drawn based on the proportion of young Africans within each cluster. 1,004 African people aged between 20-34 were interviewed and asked about their characteristics and current and previous activities. The data over-represents people aged twenty to twenty-four, who make up approximately half of all the observations and females (60 percent of the observations are female).

Those who were employed were asked to classify the size of their company within bands. The unemployed were asked, "what is the absolute minimum wage per month you would accept for a job?" and "how many hours per week would you be prepared to work for this (minimum) amount?" As with the KMP survey used by Nattrass and Walker (2005) the questions that followed asked, "what do you think would be a reasonable amount to be paid per month given your education, skills, age, area of residence?"

Table 1 presents the number and proportions of observations by activity and gender, province and cohort. 49 percent of the sample are unemployed. This is higher for females than for males. KwaZulu-Natal has the highest relative proportion of unemployed. Wage employment is relatively higher among males and, as expected, in Gauteng. The unemployed and wage employed together make up 79 percent (793 observations) of the total sample.

Table 1. Sample composition in the South African Young Persons Survey

Activity		**Gender**		**Province**			**Cohort**		**Total**
		Female	**Male**	**Gauteng**	**KwaZulu-Natal**	**Limpopo**	**20 - 24**	**25 - 34**	
Unemployed	No.	324	166	252	121	117	238	252	490
	Column %	55.5	39.5	46.8	53.8	48.8	48	49.6	48.8
Wage employment	No.	151	152	202	60	41	118	185	303
	Column %	25.9	36.2	37.5	26.7	17.1	23.8	36.4	30.2
Self employment	No.	27	32	27	14	18	18	41	59
	Column %	4.6	7.6	5	6.2	7.5	3.6	8.1	5.9
School education	No.	28	23	15	8	28	46	5	51
	Column %	4.8	5.5	2.8	3.6	11.7	9.3	1	5.1
Further or higher education	No.	54	47	43	22	36	76	25	101
	Column %	9.2	11.2	8	9.8	15	15.3	4.9	10.1
Total	No.	584	420	539	225	240	496	508	1,004

Table 2 shows the mean and median hourly-wage for the employed in each size-type and the reservation wage of the unemployed[4]. Larger firms pay higher wages than smaller firms to both males and females. Reservation wages for the searching unemployed are generally below actual wages for employed individuals if firm size is not taken into account. However, once employment is broken down by firm size the relationship between actual and reservation wages is less clear-cut. Mean reservation wages for males are similar to mean actual wages for those working in smaller firms. Median reservation wages for both males and females are above median wages in small firms.

Table 2. Actual and reservation wages by gender and firm size.

	Gender	All employed	Large	Small	Searching unemployed
Mean wage in Rand per hour for the employed, reservation wage for the unemployed	Female	16.4	21.1	13.3	11.3
	Male	18.1	22.2	14.7	14.7
	Total	17.2	21.7	14	12.5
Median wage in Rand per hour for the employed, reservation wage for the unemployed	Female	12.2	17.3	9.1	9.4
	Male	12.5	18	9.3	12.5
	Total	12.2	17.8	9.1	10.4
Standard Deviation in Rand per hour of the wage for the employed, reservation wage for the unemployed	Female	13.1	13.8	11.7	6.7
	Male	15.5	14.9	15.3	9.1
	Total	14.4	14.3	13.6	7.8
Number of observations	Female	116	46	70	244
	Male	124	56	68	133
	Total	240	102	138	377

These descriptive statistics suggest that comparing actual wages to reservation wages without taking into account firm size may be misleading. However, up until now we have not controlled for other factors, such as education, which may affect earnings. This is what we do in the next section.

5. Results

We next turn to the results from the econometric estimations. Initially we estimate earnings equations which we then use to predict wages for those who are currently unemployed. We then examine the factors associated with reservation wages above predicted wages.

5.1 Earnings equations

Earnings equations are estimated for three groups: all those employed; those employed in large firms (defined as firms employing more than 50 workers); and those employed in smaller firms (firms with 50 or fewer workers. Each equation is estimated in two different ways. Firstly, using OLS which is similar to Kingdon and Knight (2001). Secondly, with a Heckman two-stage procedure where the first stage is selection into employment, or employment in a certain sized firm. This approach is similar to Nattrass and Walker (2005). The results for all these specification are presented in Table 3.

[4] These figures include only those employed who worked for more than thirty hours a week, and those unemployed who indicated that they wanted to work for more than thirty hours a week

Table 3 Earnings equations.

	Log hourly-wage	**Log hourly-wage**	**Log hourly-wage large firm**	**Log hourly-wage large firm**	**Log hourly-wage small firm**	**Log hourly-wage small firm**
Outcome						
Age	0.227	0.253*	0.125	0.138	0.191	0.221
	(0.144)	(0.150)	(0.218)	(0.214)	(0.183)	(0.184)
Age Squared / 100	-0.372	-0.414	-0.205	-0.224	-0.299	-0.346
	(0.268)	(0.275)	(0.398)	(0.387)	(0.343)	(0.340)
Female	-0.0916	-0.126	-0.154	-0.173	-0.0785	-0.128
	(0.0805)	(0.102)	(0.123)	(0.149)	(0.102)	(0.124)
Outside Gauteng	-0.247***	-0.268***	0.192	0.170	-0.319***	-0.328***
	(0.0928)	(0.0996)	(0.163)	(0.188)	(0.107)	(0.104)
School Education	0.129***	0.140***	0.245***	0.258***	0.0696*	0.0788**
	(0.0366)	(0.0416)	(0.0819)	(0.0989)	(0.0387)	(0.0402)
Degree or Diploma	0.615***	0.630***	0.446**	0.457***	0.664***	0.672***
	(0.129)	(0.130)	(0.170)	(0.170)	(0.187)	(0.182)
Certificate	0.199*	0.195*	-0.0462	-0.0502	0.350***	0.346***
	(0.110)	(0.109)	(0.171)	(0.163)	(0.132)	(0.129)
Large firm experience	0.0381	0.0384	0.0319	0.0316	-0.0320	-0.0273
	(0.0349)	(0.0341)	(0.0402)	(0.0380)	(0.0744)	(0.0719)
Small firm experience	0.00937	0.00937	0.0154	0.0152	0.0256	0.0253
	(0.0297)	(0.0290)	(0.0620)	(0.0586)	(0.0322)	(0.0309)
Tenure	0.0181	0.0172	-0.0118	-0.0125	0.0386	0.0376
	(0.0187)	(0.0183)	(0.0267)	(0.0255)	(0.0254)	(0.0244)
Lambda		0.117		0.0526		0.172
		(0.221)		(0.256)		(0.264)
Constant	-1.355	-1.879	-0.0803	-0.375	-0.865	-1.532
	(1.911)	(2.118)	(2.899)	(3.094)	(2.398)	(2.540)
Observations	240	240	102	102	138	138
Selection						
Age		0.370**		0.493*		0.304
		(0.188)		(0.255)		(0.216)
Age Squared / 100		-0.595*		-0.763		-0.503
		(0.349)		(0.470)		(0.403)
Female without children		-0.122		-0.0340		-0.208
		(0.161)		(0.206)		(0.189)
Female with children		-0.522***		-0.726***		-0.421***
		(0.122)		(0.169)		(0.138)
Outside Gauteng		-0.167		-0.540***		0.0474
		(0.118)		(0.172)		(0.131)
School Education		0.134***		0.316***		0.0755
		(0.0485)		(0.0903)		(0.0519)
Degree or Diploma		0.175		0.304		0.00888
		(0.195)		(0.230)		(0.243)
Certificate		-0.0414		-0.229		0.0691
		(0.149)		(0.201)		(0.168)
Unemployed head at age fifteen		-0.542**		-0.541*		-0.509**
		(0.225)		(0.314)		(0.259)
Number of earners in household		-0.170***		-0.141*		-0.186***
		(0.0574)		(0.0812)		(0.0659)
Poor or very poor health		-0.489**		-0.444*		-0.548**
		(0.198)		(0.268)		(0.233)
Speaks English very well or excellently		0.229**		0.345**		0.146
		(0.114)		(0.151)		(0.131)
Constant		-5.866**		-9.161***		-4.925*
		(2.480)		(3.424)		(2.839)
Observations		617		479		515

Notes: * Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

The South African Young Persons Survey did not ask the exact same questions as the surveys used by Kingdon and Knight (2001), and Nattrass and Walker (2005) and it is therefore not possible to construct identical specifications, nor is it possible to replicate this analysis using their data. The variables that are included in this specification have been selected in order to replicate as closely as possible and build on the work of Kingdon and Knight (2001), Mlatsheni and Rospabe (2002), and Nattrass and Walker (2005).

The first two columns of

Table 3 show the results from the OLS and Heckman estimations for all the employed. Selection into employment is concave in age meaning that people are more likely to be employed as they get older but with a decreasing rate. Those respondents who had unemployed household heads when they were fifteen and those who have poor or very poor health were less likely to be employed. Employment is positively correlated with age, school education and whether the respondent spoke English very well or excellently. Females with children were less likely to be employed in both large and small firms. Those respondents living outside Gauteng and those that did not speak English very well or excellently were less likely to find employment in large firms. School education matters for employment in large firms, but is not significant for employment in smaller firms.

The education variables have significant effects when explaining the observed wage. Higher education is associated with higher wages and this effect is greater in large firms for school education. In smaller firms, tertiary education has a larger marginal effect than in larger firms although individuals who have completed the senior certificate and have some type of tertiary education earn more in total in larger firms than smaller firms since the education effect is larger. The respondents employed in small firms in Limpopo and Kwazulu-Natal earned less than their counterparts in Gauteng. Lamda is not significant in either of the regressions. This does not necessarily imply that selection on unobservables does not matter, the sample and specification may not able to identify the contrasting effects that these have.

5.2 Predicted reservation wages

As with both Kingdon and Knight (2001) and Nattrass and Walker (2005), we use the coefficient estimates from these earnings equations and also the selection equation, to predict what the currently unemployed would earn given their observable characteristics. We then compare these predicted wages to the stated reservation wages. Table 4 shows the percentage of the unemployed who have reservation wages above predicted wages and Table A1 shows the ratio of reservation wages to predicted wages. The first three columns of Table 4 do not differentiate employment by firm size. These results are similar in magnitude to Kingdon and Knight (2001) who use the OLS predictor, but in contrast to Nattrass and Walker (2005) who, using the conditional predictor, find that only 3 percent of the respondents in their sample had reservation wages that were higher than what they could expect to earn. Regardless of the predictor we use, more than half the unemployed have reservation wages above predicted wages. The difference in gender is also stark – more males than females have high reservation wages.

Table 4. Proportion of the unemployed with reservation wages higher than expected wages

	High reservation wage compared to predicted wage in employment			**High reservation wage compared to predicted wage in large firm employment**			**High reservation wage compared to predicted wage in small firm employment**		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
OLS wage predictor	45	62	51	27	33	29	55	73	62
Conditional wage predictor	44	62	51	27	33	29	54	73	61
Unconditional wage predictor	53	68	58	32	38	34	71	81	75

These results change dramatically once we differentiate by firm size. Only about 30 percent of individuals have reservation wages higher than what they could expect to earn in larger firms. Table A1 shows that both mean and median ratios of reservation wages to predicted wages in larger firms are less than 1. The proportion of the unemployed with reservation wages higher than predicted wages increases to between 61 to 75 percent when wages are predicted for working in a smaller firm. Again this is higher for males with approximately three-quarters or more with reservation wages higher than expected wages. Table A1 confirms this with all the mean and median reservation wage:small firm wage ratios above 1.

5.3 Who has unrealistically high reservation wages?

As with both the previous papers, we next examine which types of people are most likely to have unrealistically high reservation wages when compared to what they are predicted to earn. However, in our case we use the predicted wage for working in a small firm. We use two different measures of the relationship between the reservation wage and predicted wage. The first is the ratio of the reservation wage to predicted small-firm wage. The second is a dummy variable that takes a value of one if the reservation wage exceeds the predicted wage. These are estimated using OLS, for the ratio, and a probit, for the dummy variable specification.

The results are presented in Table 5. These suggests that high reservation wages are decreasing with age and small-firm work experience, are less likely amongst females and where the respondent has a degree, diploma or certificate. These findings are similar to those of Kingdon and Knight (2001) and suggest that one reason for misaligned reservation wages is a lack of information. Reservation wages are closer to predicted wages until about 30, after which they increase again. This may suggest that young people learn more about realistic wages as they age. The significance of previous work experience in a smaller firm also suggests that these individuals have better information on what they could realistically earn in these types of firms.

Table 5. Factors associated with high reservation wages.

	OLS predictor ratio	**OLS predictor dummy**	**Conditional predictor ratio**	**Conditional predictor dummy**	**Unconditional predictor ratio**	**Unconditional predictor dummy**
Age	-0.112***	-0.492**	-0.107**	-0.447*	-0.162***	-0.556**
	(0.0416)	(0.238)	(0.0414)	(0.236)	(0.0467)	(0.265)
Age Squared / 100	0.186**	0.828*	0.177**	0.753*	0.267***	0.911*
	(0.0776)	(0.441)	(0.0773)	(0.439)	(0.0871)	(0.487)
Female	-0.0686**	-0.440***	-0.0649**	-0.501***	-0.0379	-0.258
	(0.0268)	(0.153)	(0.0267)	(0.153)	(0.0301)	(0.167)
Outside Gauteng	0.0825***	0.153	0.0878***	0.190	0.121***	0.262
	(0.0266)	(0.151)	(0.0265)	(0.150)	(0.0299)	(0.166)
School Education	-0.0165	-0.0443	-0.0147	-0.0729	-0.0312***	-0.0677
	(0.0104)	(0.0597)	(0.0104)	(0.0598)	(0.0117)	(0.0664)
Degree or Diploma	-0.120**	-0.438	-0.123**	-0.496*	-0.156***	-0.612**
	(0.0516)	(0.296)	(0.0514)	(0.296)	(0.0579)	(0.293)
Certificate	-0.112***	-0.602***	-0.108***	-0.497**	-0.137***	-0.610***
	(0.0359)	(0.198)	(0.0357)	(0.197)	(0.0402)	(0.200)
Unemployed head at age fifteen	0.00649	0.266	-0.0305	0.246	0.00683	-0.0192
	(0.0432)	(0.250)	(0.0430)	(0.249)	(0.0484)	(0.264)
Number of earners in household	0.00233	0.000747	-0.00959	-0.0660	0.00192	0.0221
	(0.0130)	(0.0715)	(0.0130)	(0.0718)	(0.0146)	(0.0767)
Poor or very poor health	-0.0547	-0.292	-0.0900**	-0.426**	-0.0622	-0.250
	(0.0391)	(0.215)	(0.0389)	(0.214)	(0.0439)	(0.225)
Speaks English very well or excellently	0.0135	-0.0926	0.0245	-0.0234	0.0148	-0.0869
	(0.0267)	(0.150)	(0.0265)	(0.149)	(0.0299)	(0.162)
Large firm experience	0.0248	0.163	0.0222	0.157	0.0265	0.0823
	(0.0232)	(0.145)	(0.0230)	(0.144)	(0.0260)	(0.143)
Small firm experience	-0.0300**	-0.219***	-0.0299**	-0.207***	-0.0341**	-0.220***
	(0.0129)	(0.0805)	(0.0129)	(0.0799)	(0.0145)	(0.0795)
Unemployment duration	-0.00354	-0.0434*	-0.00379	-0.0400	-0.00397	-0.0257
	(0.00469)	(0.0258)	(0.00466)	(0.0257)	(0.00526)	(0.0272)
Constant	2.826***	8.147***	2.766***	7.653**	3.728***	9.527***
	(0.546)	(3.142)	(0.544)	(3.117)	(0.613)	(3.535)
Observations	377	377	377	377	377	377

Notes: * Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

6. Reasons for leaving firms

The data presented thus far suggests that many young people want better paying jobs in larger firms and their stated reservation wages are above what they could realistically earn in smaller firms. This may limit the

growth of smaller firms since they will have a smaller pool of people willing to work at the wages they offer. In order to check the robustness of this result we turn to another set of questions from the SAYPS. The survey collected retrospective data on previous activities that individuals had engaged in. People were asked about the reason for leaving an activity for completed employment activities (both wage and self-employment). If, as our results above show, young people want or need wages that are higher than they could earn in smaller firms, we would anticipate that this would be a frequently mention reason for leaving employment in these types of firms. Table 6 presents the reported reasons for leaving employment broken down by the size of firm the person was working for.

Table 6. Reasons for leaving firms by firm size

	Large	**Large**	**Small**	**Small**	**Total**	**Total**
Reason for leaving	No.	%	No.	%	No.	%
Contract ended	16	55	14	27	30	37
Fired/Retrenched	5	17	3	6	8	10
Firm shut down	3	10	8	15	11	14
Low salary / No promotion prospect / Looking for a better job	1	3	16	31	17	21
Poor working conditions	1	3	7	13	8	10
Other	3	10	4	8	7	9
Total	29	100	52	100	81	100

The most frequent reason given for leaving a job in a small firm is that the wage was too low or that opportunities to earn more within the firm through promotion were limited. This is in contrast to larger firm jobs where only one person in the sample gave low pay as a reason for leaving. The most frequent reason given for leaving large firms is the end of a contract. These results confirm the findings in the previous section that young people's desired wages are in many cases above the wages they can realistically earn in a smaller firm.

7. Discussion and conclusion

Youth unemployment in South Africa is much higher than in many comparator countries. Increasing employment among the youth and facilitating earlier entry into jobs can have virtuous dynamic effects. One potential reason why youth unemployment is high is because people may be unwilling or unable to work at the prevailing market rate. This paper investigates this by replicating previous work on reservation wages and employment in South Africa but adds two innovations. The first is to focus only on youth, those aged 20-34, since youth unemployment in South Africa is high and naivety amongst young people as they enter the labour market may cause desired and potential wages to be misaligned. The second innovation is to focus on the impact of firm size on potential earnings and the relationship between earnings in different sized firms and reservation wages.

Our findings are in line with those of Kingdon and Knight (2001) who show that approximately half of the unemployed have a reservation wage higher than the wage they could expect to earn given their observable characteristics. However, once we differentiate by firm size this proportion increases substantially. Between 73-81 percent of males and 55-71 percent of females have desired wages that are higher than they could expect to earn in a firm with 50 or less employees. This suggests that looking only at average predicted wages and comparing those to reservation wages may be misleading. Young people may not be willing to work in smaller companies since wages are lower in these types of firms. This finding is supported by the reasons people give for leaving smaller firm employment – a salary that is too low is a frequent reason among those employed in smaller firms but a very uncommon reason among those employed in large firms.

These findings do not necessarily mean that unemployment among the youth is voluntary. There are a number of potential reasons why reservation wages may be above actual wages. The first is information. Young people may have limited knowledge of the labour market both in terms of what they can reasonably expect to earn and where and how they find jobs. Our results are supportive of this and indicate that

reservation wages decrease with age until about 30 and that those with previous small firm experience have more realistic reservation wages.

The second explanation is that given the higher expected earnings in larger firms, young people are rationally waiting for a job in a large firm. Since entry into a job in a large firm may lead to a different employment trajectory (i.e. future employment in larger firms) than the employment trajectory of those that are employed in smaller firms, the additional lifetime earnings from securing a large firm job compared to those in a smaller firm may far outweigh the costs of waiting.

The third explanation is that there are certain costs to accepting employment, such as transport costs or the loss of intra-household transfers or social grants that our specification does not account for. These costs may make it unfeasible to accept a job at the lower wages paid by smaller firms and thus increase the reservation wage.

Given the limitations in our data, this paper does not attempt to identify which of these is valid. It does, however, find that firm size is an important determinant of the wages paid to these young people and that a significant proportion of the young people, particularly the youngest, have reservation wages that are higher than what they could reasonably expect to earn in small firms. This finding, in turn, has two corollaries: the development and growth of small firms may be impeded by the available supply of labour; and the promotion of smaller firms as a means of reducing youth unemployment may have limited impact if young people do not want to work in these firms.

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Appendix

Table A1. The ratio of the reservation wage to predicted wage

Reservation wage / Predicted Wage	Cohort	Mean			Median		
		Female	Male	Total	Female	Male	Total
OLS - for all employed	20 - 24	1.2	1.5	1.3	1	1.3	1.1
	25 - 34	1	1.2	1	0.8	1	0.9
	Total	1.1	1.4	1.2	0.9	1.2	1
Conditional - for all employed	20 - 24	1.2	1.5	1.3	1	1.2	1.1
	25 - 34	1	1.2	1	0.8	0.9	0.8
	Total	1.1	1.3	1.2	0.9	1.2	1
Unconditional - for all employed	20 - 24	1.4	1.7	1.5	1.2	1.4	1.3
	25 - 34	1.1	1.3	1.2	0.9	1	1
	Total	1.2	1.5	1.3	1.1	1.3	1.1
OLS - large firm employment	20 - 24	0.8	1	0.9	0.6	0.8	0.7
	25 - 34	0.8	0.9	0.8	0.7	0.6	0.7
	Total	0.8	1	0.9	0.7	0.8	0.7
Conditional - large firm employment	20 - 24	0.8	1	0.9	0.6	0.8	0.7
	25 - 34	0.8	0.9	0.8	0.7	0.6	0.6
	Total	0.8	1	0.9	0.6	0.8	0.7
Unconditional - large firm employment	20 - 24	0.9	1.1	1	0.7	0.9	0.8
	25 - 34	0.9	1	0.9	0.7	0.7	0.7
	Total	0.9	1.1	0.9	0.7	0.8	0.8
OLS - small firm employment	20 - 24	1.5	1.8	1.6	1.2	1.5	1.3
	25 - 34	1.2	1.4	1.2	1	1.2	1
	Total	1.3	1.6	1.4	1.1	1.4	1.2
Conditional - small firm employment	20 - 24	1.5	1.7	1.6	1.2	1.5	1.3
	25 - 34	1.2	1.3	1.2	1	1.1	1
	Total	1.3	1.6	1.4	1.1	1.3	1.2
Unconditional - small firm employment	20 - 24	1.9	2.1	2	1.6	1.9	1.7
	25 - 34	1.5	1.6	1.5	1.2	1.3	1.2
	Total	1.6	1.9	1.7	1.4	1.6	1.5