

Understanding the underlying dynamics of the reservation wage for South African youth

ASMUS ZOCH

Essa Conference 2013

KEYWORDS: YOUTH UNEMPLOYMENT, RESERVATION WAGES, SOUTH AFRICA
JEL: J21, J31, J62, J64

ASMUS ZOCH
DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND, SOUTH AFRICA
E-MAIL: ASMUSZUCH@GMAIL.COM

Understanding the underlying dynamics of the reservation wage for South African youth

ASMUS ZOCH

ABSTRACT

This paper aims to explore the underlying dynamics of the reservation wage for South African youth. The impact of reservation wages on unemployment is highly controversial. While some economists argue that reservation wages may be too high, indicating voluntary unemployment (Lam et al., 2010) others find that reservation wages are not higher than predicted wages (Nattress & Walker, 2005) or have no conclusive findings (Kingdon & Knight, 2001). Our analysis tests different hypotheses potentially explaining these contradictory findings: Firstly, young people have very little information about their true value in the labour market. Secondly, high search and transportation costs increase reservation wages. Thirdly, intra household-transfers and pensions reduce the need for employment. Finally, individuals report “fair wages” rather than true reservation wages. We add to the existing literature by providing a comprehensive analysis of reservation wages in South Africa using three different datasets: NIDS, CAPS and LMES. The CAPS dataset is unique in the South African context due to its longitudinal aspect which enables direct comparisons of reservation wages with accepted wages. Furthermore, CAPS and LMES make use of different methods to capture reservation wages: One shot questions as well as a series of questions taking the form “would you accept a job doing occupation x at monthly wage w?” Using this information, as well as observed accepted wages will enable us to achieve a deeper understanding of the true nature of reservation wages. To test the hypothesis that reservation wages are too high, we follow the method used by Nattress & Walker (2005), comparing predicted wages with the reported reservation wages of unemployed workers. With five waves of panel data CAPS, we can control for individual heterogeneity and observe changes in reservation wages over time.

Keywords: YOUTH UNEMPLOYMENT, RESERVATION WAGES, SOUTH AFRICA
JEL codes: J21, J31, J62, J64

1 Introduction

According to Statistics South Africa in the first half of 2013 narrow unemployment was 25.2% and broad unemployment 38.0% (using the Quarterly Labour Force Survey). Furthermore, of the narrow group 66% were long-term unemployed (more than 1 year) and youth unemployment in South Africa reached about 50%. Even for developing country standards South Africa has outstanding high unemployment rates. What makes South Africa special are the high numbers of discouraged workers. Second, while other developing countries have huge informal sectors where most workers who don't get employed in the formal sector find work, the informal Sector of South Africa is relatively small. The correlates of unemployment like race, age, education and skills have been broadly researched in the South African literature. The causes which could explain why so many South Africans are unemployed are still controversial and yet to be studied conclusively. Most macro economists in South Africa would claim that wage rigidities and high labour market participation have caused the particular striking youth unemployment rates. Yet, why is the informal sector that small?

Micro economists have referred to high search cost due to geographic distance between where unemployed potential workers reside and where businesses are located. A second highly controversial option is that reservation wages are too high. The problem is that the wage mechanism and reservation wages are unobservable and we cannot distinguish between: 1. People that have low reservation wages but minimum wages price them out of the labour market, 2. People that have reservation wages which are too high due to incomplete information, social grants, changing preferences and expectations and 3. People that report a "fair wage" rather than their true reservation wages in labour surveys. While there have been various studies about the effect of reservation wages in South Africa e.g. Levinsohn et al. (2009); Natrass and Walker (2005); or Rankin and Roberts (2010) to our knowledge there has been no paper that explored the determinants of reservation wages, controlling for unobserved characteristics and using long term panel data sets. We add to the existing literature by giving a comprehensive analysis of the reservation wages in South Africa using three different datasets and observing the following questions:

Are reservation wage responses reliable within labour market surveys? What are the determinants of reservation wages? and Do high reservation wages prevent young South Africans accepting low wage offers?

To determine the underlying dynamics of the reservation wage we test the relationship between reservation wages and several variables that are theoretically influential, i.e. individual- and household specific determinants (including proxies for human capital and household wealth), as well as length of unemployment spell (following Brown and Taylor, 2011). To test the hypothesis that reservation wages are too high, we follow the method used by Natrass & Walker (2005), comparing predicted wages with the reported reservation wages of unemployed workers. With five waves of panel data CAPS, we can control for individual heterogeneity and observe changes in reservation wages over time.

2 Theory and Literature review

This section of the paper provides a short review of the literature and the concept of reservation wages. In classic labour market theory, when wage offers are independent realizations from a known wage offer distribution¹, the reservation wage rate can be written as:

$$w^r = b + \frac{\delta}{\rho} \int_{w^r}^{\infty} (w - w^r) \delta F(w) \quad (1)$$

Where the parameter δ is giving the Poisson process, b is the amount of unemployment benefits net of any search costs, ρ is the discount rate, w is the wage offer, and $F(w)$ is the cumulative wage distribution (Addison et al., 2009). In the South African landscape where many unemployed live in structures far away from potential work places, search cost might be an important determinant of the reservation wage. Unemployment benefits are only given to a small proportion of unemployed in South Africa. However, state pensions and other states transfers may cause job seekers in better-resourced households to be less likely to accept low-wage work out of desperation than those living in poorer households (Natrass and Walker, 2005). Finally, the effect

¹ Assuming income-maximizing workers, infinite lives, unemployment benefits and jobs (once accepted), sampling without recall.

unemployment duration is observed. While higher reservation wages should increase the unemployment spell, at the same time, we expect people being unemployed for a long time to adjust (decrease) their reservation wage.

Yet, to explore the determinants of reservation wages one first has to deal with problem that people might not report their true reservation wages. Instead people rather report a minimum wage they regard as fair or we can observe that respondents imagine themselves in a bargaining situation (see Natrass and Walker, 2005). In addition, young employees entering the labour market for the first time might not know their true market value (Rankin and Roberts, 2010).

Overview of research done in South Africa

- General findings on unemployment, job search behaviour, networks and reservation wages:
 - Banerjee et al. (2010); Kingdon and Knight (2001, 2004, 2007)
- Determinants of job search and different job search strategies:
 - Burns et al. (2010) ; Lam et al. (2010); Magruder (2010) ; Rankin et al. (2009); Roberts (2009); Schöer and Leibbrand (2006) ; Wittenberg (2002)
- Determinants of reservation wages:
 - Levinsohn et al. (2009); Mlatsheni and Rospabe (2002); Natrass (2002); Natrass and Walker (2005); Rankin and Roberts (2010); Walker (2003)

3 Data and Analysis

3.1 South African Panel Data

To observe the determinants of reservation wages while controlling for unobservable heterogeneity, household panel data is needed. The three panel studies used in this paper are the National Income Dynamics Survey (NIDS) the Cape Area Panel Study (CAPS) and the Labour Market Employment Study (LMES). However, to answer the question whether or not reservation wage responses are reliable within labour market surveys, we first have a closer look into the way these data sets ask for reservation wages.

For CAPS two different ways have been used to ask for the lowest wage acceptable. One direct shot, where people have been asked the “Lowest monthly wage accept for full-time work” as well as a multiple set of questions about whether or not the respondent would “Accept job: domestic worker- monthly wage R864. YES NO” or “Accept job: production manager - monthly wage R5000. YES NO”. There have been 4 to 6 different job options and various wage steps within the different waves. The interesting results for CAPS was that about 2/3 of respondents would accept a job as described above but have stated a higher reservation wage to the previous (one shot) question (50-55% for white and coloured).

Like for CAPS the LMES also asks for lowest accepted wages on various ways. First: “What is the MINIMUM MONTHLY wage you are prepared to work for 8 hours a day 5 days a week?” and then “If you were offered a permanent full-time job near to where you live which pays R 1500 per MONTH for the first year, would you take it - YES or NO? “. While 2158 out of 2963 respondents answer this question with yes, 1460 out of those 2158 have first given a higher reservation wage. In this study, there is even a further question: “Why would you take such a job if you just said the minimum you would work for is R {{a6_8_near}} a month?”. The answer of nearly everyone “Not working; desperate; or take anything“, but only one respondent told he didn’t understand the question. Therefore, most people seem to understand the question very well but would over report their true reservation wages when only asked with a single question.

Looking at Figure 3.1 (using CAPS) one can see that the difference between the single and the multiple question becomes more prominent when respondents get older. Therefore, when people get older they regard a higher wage as fair and would tell in a survey. Yet, if directly asked whether or not they would accept a specific job they are actually willing to work for much less. Figure 3.2 shows that the same trend is true for the unemployment spell. Therefore, reservation wages appear to be overestimated if asking directly for the lowest accepted wage since people rather report a desired wage than the lowest amount they would work for. This finding is in line with other studies, e.g. Walker (2005) or Roberts (2009).

Figure 3.1: Development of reservation wage and age (CAPS wave 2-5)

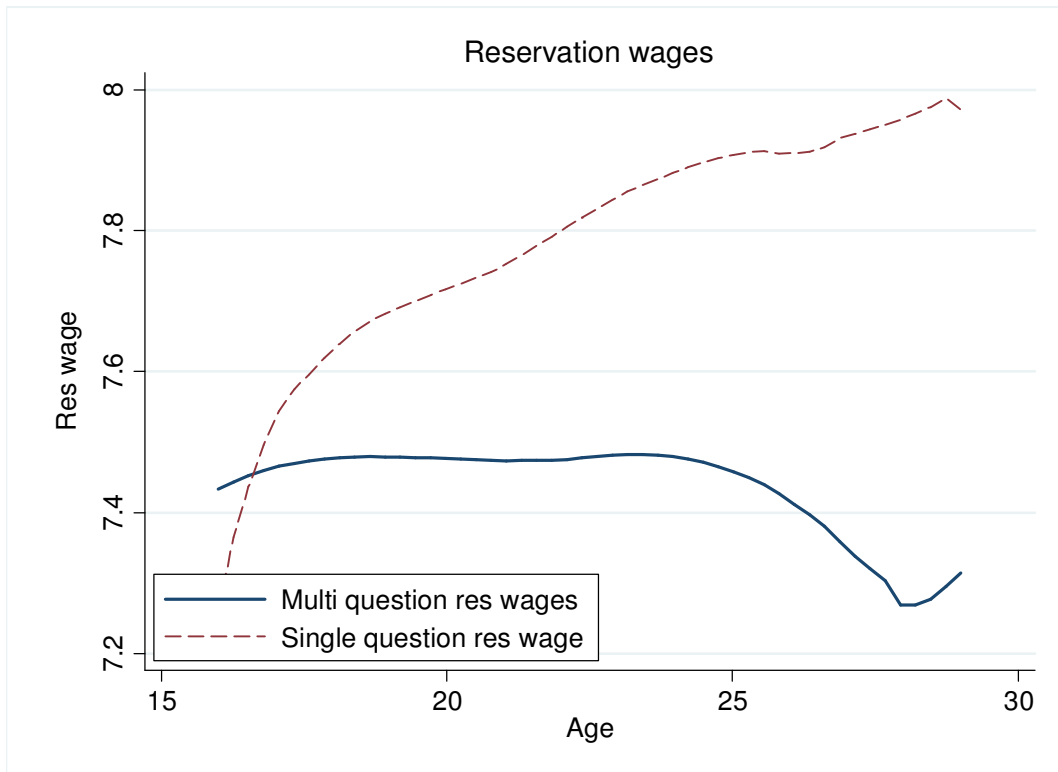


Figure 3.2: Development of reservation wage and unemployment spell (CAPS wave 2-5)

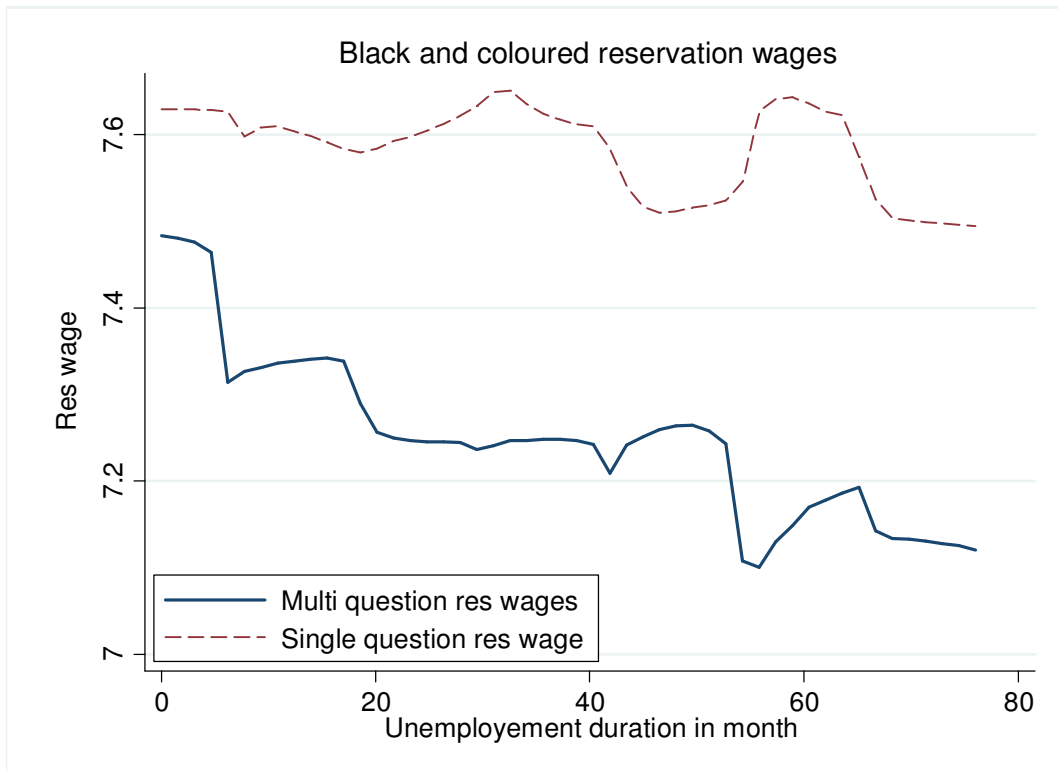
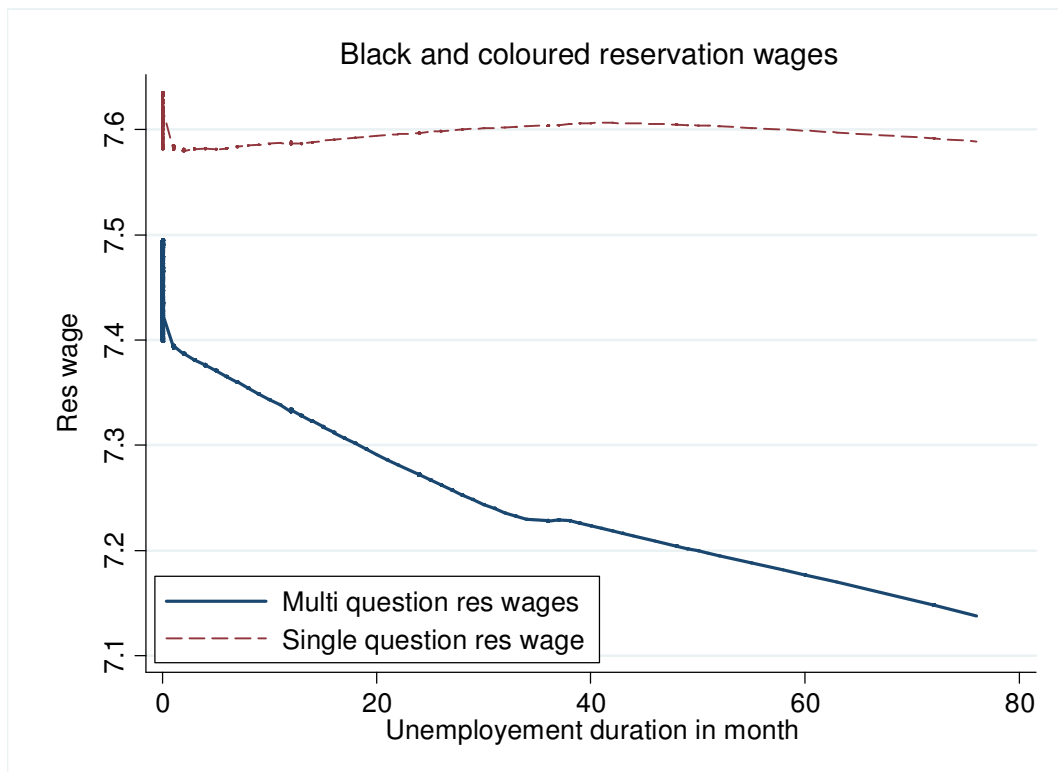


Figure 3.3: Lowess



3.2 Empirical Strategy

This section briefly describes the econometric approach to estimate the determinants of reservation wages and to get closer to the question whether or not high reservation wages prevent young South African workers to accept wage offers.

First: We run a classic panel model to estimate the determinants of reservation wages using NIDS:

$$\text{Log (monthly reservation wage)} = \beta_1 X_t + \beta_2 \log (\text{unemployment spell})_t + \varepsilon_t \quad (2)$$

X_1 is a vector of variables that potentially influence the reservation wage. β_1 captures the influence of the explanatory variables on the reservation wage. β_2 measures the elasticity of unemployment duration with respect to the reservation wage and ε is a random error term. In line with the existing literature we include the following independent variables: gender and race, years of education and education square, work experience, age and age square, household income and assets, household size, parents' education and labour market status.

Second: A system of two simultaneous equations, estimated by instrumental variables, is used to deal with the problem of endogeneity due to simultaneity (following an approach of Jones, 1988):

$$\log(\text{unemployment spell}) = \alpha_1 X_{1it} + \alpha_2 \log(\text{monthly reservation wage})_{it} + \varepsilon_{1it} \quad (3)$$

$$\log(\text{monthly reservation wage}) = \beta_1 X_{2it} + \beta_2 \log(\text{unemployment spell})_{it} + \varepsilon_{2it} \quad (4)$$

X_1 and X_2 are vectors of the same variables described before that potentially influence unemployment spell and reservation wage. β_1 and α_1 capture the influence of the explanatory variables on the reservation wage and unemployment duration. β_2 and α_2 measure the elasticity of unemployment duration with respect to the reservation wage and the elasticity of the reservation wage with respect to unemployment duration, and the ε 's are random error terms. (see Brown and Taylor, 2009). (Literacy and numeracy test for CAPS).

Third: To test the hypothesis that reservation wages are too high relative to offered wages, we first predicted reservation wages ($\widehat{w}_{it}^{Unempl}$) using the wage information for employed person in the data set:

$$w_{it}^{Empl} = \gamma_1 H_{it}^{Empl} + \varepsilon_{it} \quad (5)$$

$$\widehat{w}_{it}^{Unempl} = \widehat{w}_{it} = \gamma_2 H_{it}^{Unempl} \quad (6)$$

In a second step we use the predicted wages for unemployed ($\widehat{w}_{it}^{Unempl}$) to run a probit model on unemployment.

In Figure 3.4 and Figure 3.5 the difference between reservation and predicted wages are shown. If the graph lies above (below) zero it means that the respondent has a reservation wage greater (smaller) than their predicted market wage. As the graphs show the single reservation wage question is always above the zero line, meaning that people have too high reservation wages. However, looking at the answer of the multiple questions, respondents actually seem to have a quit accurate idea of their market wages. The influence of age appears to be quadratic while people with higher education seem

to rather overestimate their market wages. However, these students might have unobserved abilities making it very hard to estimate their true market value.

Figure 3.4 Difference between reservation wage and predicted wages for age (CAPS 1-5)

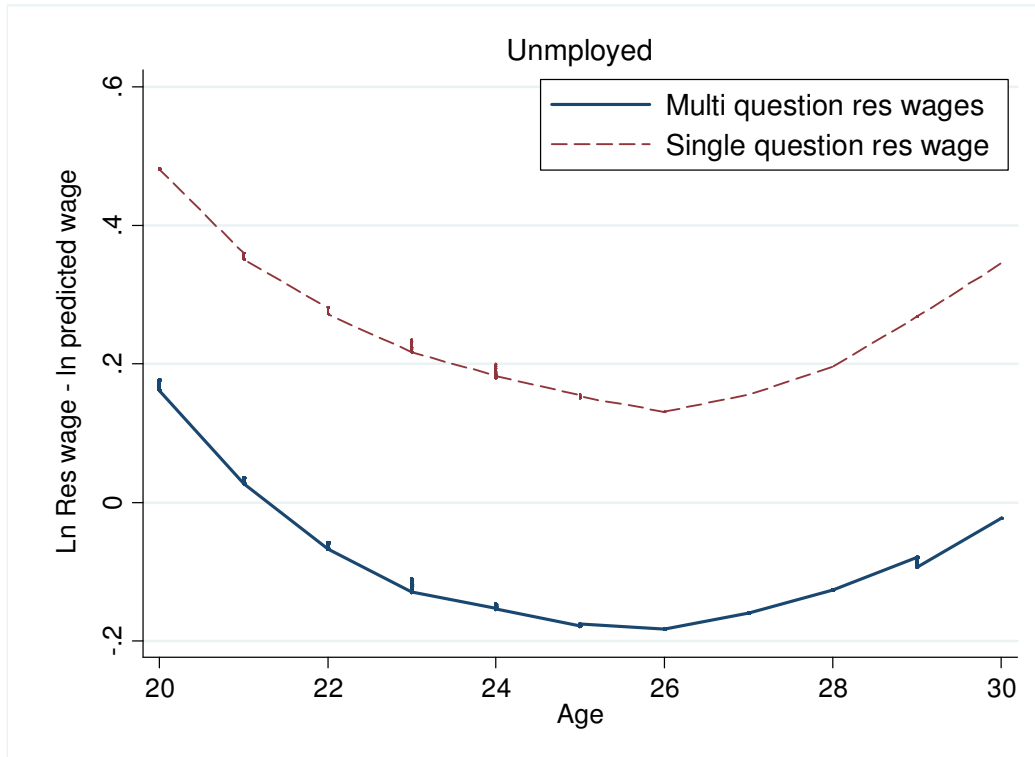
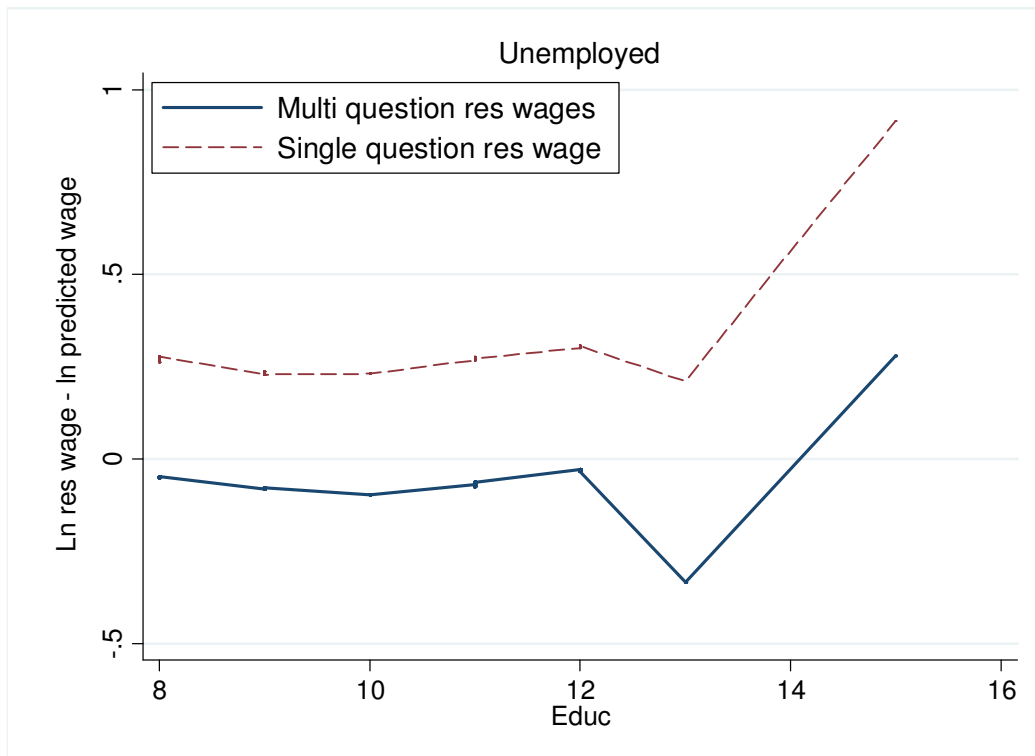


Figure 3.5 Difference between reservation wage and predicted wages for education (CAPS 1-5)



4 Results

4.1 Determinants of reservation wages

In Table 4.1 the results of a classic regression on log reservation wages are shown (using NIDS 2008). While specifications 1-3 use the whole sample, the last column gives the estimates for only the unemployed sample. The coefficients of most covariates are significant and have the expected signs. Coloured, Indian and White have higher reservation wages than Black respondents. The same holds true for married and male respondents. Education has a quadratic form, meaning that people with less education have lower reservation wages. The relationship turns significant positive only for more than 6 years of education. The same quadratic pattern can be found for the influence of age on the lowest accepted wage.

As expected family assets as a proxy for family support increases the reservation wage significantly for all specifications even for the unemployed sample. Including transport costs into specification 2-4 shows a significant positive correlation with reservation wages. If people with low skills live too far off from their work places this could lead to a situation where they don't find jobs that pay their lowest wage acceptable. Father education as a proxy for aspiration and family background is significant on a 10% level correlated with reservation wages. While NIDS is representative for the whole country, the reservation wage information in the data set might be underestimated since NIDS only included one single question asking for the lowest amount acceptable for fulltime work. On the other hand, if everyone is underreporting their true reservation wages on a constant level we should still be able to obtain the right signs for the coefficients of our correlates.

Table 4.1: Determinants of reservation wages in South Africa (NIDS 2008)

VARIABLES	All Ln(res wage)	All Ln(res wage)	All Ln(res wage)	Unemployed Ln(res wage)
Coloured	0.214*** (0.070)	0.241*** (0.089)	0.312** (0.145)	0.301*** (0.107)
Indian	0.203 (0.140)	0.172 (0.127)	0.130 (0.138)	0.521*** (0.192)
White	0.477*** (0.125)	0.256 (0.157)	0.112 (0.194)	0.038 (0.118)
Age	-0.028*** (0.007)	-0.033*** (0.006)	-0.030*** (0.008)	-0.035** (0.016)
Age ²	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)
Married	0.118*** (0.042)	0.122*** (0.043)	0.113** (0.054)	-0.010 (0.074)
Male	0.227*** (0.030)	0.207*** (0.029)	0.182*** (0.037)	0.261*** (0.068)
Education	-0.036*** (0.013)	-0.023* (0.013)	-0.030** (0.014)	-0.004 (0.031)
Education ²	0.006*** (0.001)	0.005*** (0.001)	0.006*** (0.001)	0.003 (0.002)
Asset index	0.140*** (0.030)	0.137*** (0.030)	0.106*** (0.037)	0.102** (0.050)
Employed	0.056 (0.035)			
Ln(travel cost)		0.075*** (0.029)	0.084*** (0.031)	0.070* (0.039)
Father education			0.010* (0.005)	
Unemployment duration				0.003 (0.007)
Constant	7.868*** (0.147)	7.411*** (0.212)	7.243*** (0.257)	7.557*** (0.383)
Observations	5,906	6,233	4,180	991
R-squared	0.196	0.176	0.188	0.151

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

4.2 Unemployment spell

In Table 4.2 the results of a classic panel model and the 2SLS system are presented. The reservation wage information are only taken from the multiple questions from CAPS² and only respondents that have left school are included. In comparison to the single reservation wage question the correlation of reservation wages on unemployment spell is negative but not significant. The instruments for unemployment spell, the asset index and the household size, seem to be good instruments since the Under-

² For basic statistics of CAPS see Appendix Table 7.1.

identification test (LM Statistic), the Weak identification test (Wald F Statistic) and the Hansen J statistic refuse the H_0 hypothesis for weak instruments.

Table 4.2: Simultaneous equation system of unemployment spell and reservation wages (CAPS)

VARIABLES	(1)	(2)	(3)
	OLS	IV	IV
	Unemployment spell	1 st stage Ln (res wage)	2 nd stage Unemployment spell
Unemployment duration in month		0.000 (0.001)	
Ln (res wage) - multi question	-0.006 (1.168)		-2.312 (7.304)
Age	6.013*** (1.866)	-0.016 (0.030)	5.615*** (1.946)
Age2	-0.084* (0.044)	0.000 (0.001)	-0.075* (0.045)
Years of education	-2.135 (1.669)	-0.050** (0.023)	-2.021 (1.716)
Years of education2	-0.015 (0.087)	0.004*** (0.001)	-0.017 (0.095)
Percent for numeracy score	0.019 (0.021)	0.001*** (0.000)	0.028 (0.022)
Male	-2.162*** (0.827)	0.030** (0.015)	-2.164** (0.870)
Looking for work in last 30 days	2.017*** (0.708)	-0.019 (0.016)	2.050*** (0.772)
Real work experience in month	-0.349*** (0.035)	0.003*** (0.001)	-0.338*** (0.041)
Coloured	4.250*** (1.263)	0.104*** (0.027)	4.634** (2.042)
White	1.139 (3.381)	0.072 (0.068)	0.169 (3.922)
Household size		-0.004* (0.002)	
Asset index		0.077*** (0.009)	
Constant	-53.375** (24.215)	7.457*** (0.351)	-34.407 (57.412)
Observations	2,089	2,031	2,031
R-squared	0.234	0.228	0.231
Under-identification test (LM Statistic)		47.753	
Weak identification test (Wald F Statistic)		24.977	
5% maximal IV relative bias		13.91	
Hansen J statistic		121.448	

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Confirming the results we have found for NIDS in the last section, the influence of education is significant and quadratic. The turning point for education is even above 12 years of schooling. The reason might be that we have included the numeracy test results from CAPS as a control variable for ability and school quality. For male respondents we find significant higher reservation wages but also a significant shorter unemployment spell. Those unemployed that are actively looking for work seem to be longer unemployed. Yet, the interpretation could be that unemployed workers might start more actively looking for work when older and longer unemployed. As expected people with more working experience are more likely to find a job and have higher reservation wages at the same time. Puzzling is that coloured youth seem to have higher reservation wages but at the same time are on average longer unemployed. One explanation might be that coloured students are dropping out of school at an earlier age than black students.

4.3 Unemployment

As described in section 3.2 to observe the influence of reservation wages we have predicted the hypothetical wages for unemployed in the sample. In Table 4.4 the results for a fixed effect regression on the likelihoods of employment are given³. In comparison to the OLS model as shown in Table 4.3 in the Appendix the coefficient for the reservation wage turns negative. Therefore, in the classic panel model the correlation of reservation wages with the likelihood of employment seems to be positive, indicating that people with higher reservation wages have a greater likelihood to get employed. However, this is most likely due to unobserved characteristics only observable for employees and employers. As soon as we control for these unobserved characteristics (table 4.4) the coefficients turn negative. This implies that high wage expectations indeed make it less likely to get employed in the next period. To further explore this finding one has to look closer into wage offer and accepting mechanism in South Africa. However, this result could be one explanation for high unemployment rates of South African youth.

³ We choose to use FE and OLS regression since a probit model gives us the same coefficients but is less intuitive to interpret.

Table 4.3: Standard panel regression on the likelihood of getting into employment (CAPS)

VARIABLES	(1) Single question Get into employment	(2) Multi question Get into employment	(3) Difference Get into employment	(4) Dummy Get into employment
Lag (Ln single res wage)	0.0146 (0.0125)			
Lag (Ln multi res wage)		8.05e-07 (5.20e-06)		
Lag (Difference reservation wage and predicted wage)			0.0153 (0.0123)	
Lag (Reservation wage > Predicted wage [dummy])				0.0458** (0.0231)
Primary education	0.0317 (0.0339)	0.0340 (0.0338)	0.0333 (0.0337)	0.0316 (0.0338)
Matric	0.198*** (0.0382)	0.204*** (0.0377)	0.203*** (0.0374)	0.204*** (0.0375)
Tertiary education	0.275*** (0.0614)	0.280*** (0.0612)	0.280*** (0.0609)	0.277*** (0.0613)
Lag (Work experience)	0.00291** (0.00121)	0.00290** (0.00121)	0.00304** (0.00123)	0.00311** (0.00122)
Lag (Unemployment duration)	-0.00435*** (0.000980)	-0.00437*** (0.000980)	-0.00436*** (0.000979)	-0.00440*** (0.000978)
Lag (In school)	0.0749*** (0.0191)	0.0772*** (0.0192)	0.0738*** (0.0192)	0.0755*** (0.0190)
Constant	-0.566 (0.459)	-0.489 (0.453)	-0.578 (0.459)	-0.572 (0.453)
Observations	3,648	3,648	3,648	3,648
R-squared	0.131	0.131	0.131	0.132

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1;

Not listed control variables: race, age, age², gender, year dummies, location dummies

Table 4.4: Fixed effects regression on likelihood of employment (CAPS)

VARIABLES	(1) Single question Get into employment	(2) Multi question Get into employment	(3) Difference Get into employment	(4) Dummy Get into employment
Lag (Ln single res wage)	-0.0249 (0.0181)			
Lag (Ln multi res wage)		-0.0604** (0.0260)		
Lag (Difference reservation wage and predicted wage)			-0.0581** (0.0258)	
Lag (Reservation wage > Predicted wage [dummy])				-0.00516 (0.0333)
Primary education	0.233*** (0.0442)	0.247*** (0.0506)	0.248*** (0.0469)	0.237*** (0.0477)
Matric	0.138 (0.228)	0.144 (0.231)	0.159 (0.232)	0.149 (0.227)
Tertiary education	0.134 (0.229)	0.141 (0.231)	0.150 (0.232)	0.138 (0.228)
Lag (Work experience)	-0.0141*** (0.00299)	-0.0140*** (0.00298)	-0.0145*** (0.00299)	-0.0142*** (0.00303)
Lag (Unemployment duration)	-0.00519*** (0.00142)	-0.00508*** (0.00143)	-0.00504*** (0.00143)	-0.00526*** (0.00143)
Lag (In school)	-0.204*** (0.0310)	-0.200*** (0.0307)	-0.195*** (0.0309)	-0.204*** (0.0311)
Constant	3.828*** (1.042)	4.110*** (1.031)	3.835*** (1.017)	3.635*** (1.028)
Observations	3,656	3,656	3,656	3,656
R-squared	0.197	0.200	0.199	0.196
Number of person ID	2,335	2,335	2,335	2,335

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1;

Not listed control variables: race, age, age², gender, year dummies, location dummies

5 Conclusion

This paper's aim was to observe whether or not reservation wage responses are reliable and if yes what the determinants of reservation wages are. Using three different data sets we first conclude that there are different ways to capture reservation wages and people do not report their true reservation wage if asked directly. However, using multiple questions people seem to tell their true minimum wage they would work for. The determinants of reservation wages we find most important are age, education, race, travel costs, experience and an asset index. The significant positive correlation between travel costs and the asset index (representing family support) confirm classic labour market theory. Using a simultaneous equation system we also find that the unemployment spell is negative however not significantly correlated with reservation wages. Therefore, people seem to adjust their reservation wage over time. Finally, we try to answer the question whether or not high reservation wages prevent young South Africans accepting low wage offers? Predicting market wages for unemployed workers and using this information in a probit model on unemployment, we find that young workers with high wage expectations indeed are less likely to be employed the next period. This result could partially explain the exceptional high youth unemployment rates in South African.

6 Literature

- Addison, J. T., Centeno, M., & Portugal, P. (2009). Do reservation wages really decline? Some international evidence on the determinants of reservation wages. *Journal of labor research*, 30(1), 1-8.
- Banerjee, A., Galiani, S., Levinsohn, J., McLaren, Z., & Woolard, I. (2008). Why has unemployment risen in the new South Africa? 1. *Economics of Transition*, 16(4), 715-740.
- Brown, S., & Taylor, K. (2011). Reservation wages, market wages and unemployment: Analysis of individual level panel data. *Economic Modelling*, 28(3), 1317-1327.
- Burns, J., Godlonton, S., & Keswell, M. (2010). Social networks, employment and worker discouragement: Evidence from South Africa. *Labour Economics*, 17(2), 336-344.
- Kingdon, G., & Knight, J. (2001). What have we learnt about unemployment from microdatasets in South Africa?. *Social Dynamics*, 27(1), 79-95.
- Kingdon, G. G., & Knight, J. (2004). Unemployment in South Africa: The nature of the beast. *World Development*, 32(3), 391-408.
- Kingdon, G., & Knight, J. (2007). Unemployment in South Africa, 1995–2003: causes, problems and policies. *Journal of African Economies*, 16(5), 813-848.
- Klasen, S., & Woolard, I. (2009). Surviving unemployment without state support: unemployment and household formation in South Africa. *Journal of African economies*, 18(1), 1-51.
- Lam, D., Leibbrandt, M. & Mlatsheni, C. (2009). Education and youth unemployment in South Africa. *Labour markets and economic development*, p. 90.
- Lam, D., Leibbrandt, M., & Mlatsheni, C. (2010, April). Human capital, job search, and unemployment among young people in South Africa. In *meeting of Population Association of America, Dallas, TX*.

- Levinsohn, J., McCrary, J., & Pugatch, T. (2009). The Role of Reservation Wages in Youth Unemployment in Cape Town, South Africa: A Structural Approach. *University of Michigan*.
- Magruder, J. R. (2010). Intergenerational networks, unemployment, and persistent inequality in South Africa. *American Economic Journal: Applied Economics*, 62-85.
- Mlatsheni, C., & Rospabé, S. (2002). Why is Youth Unemployment So High and Unequally Spread in South Africa?.
- Nattrass, N. (2002). Unemployment, employment and labour force participation in Khayelitsha/Mitchell's Plain. *CSSR Working Paper, 133*.
- Nattrass, N., & Walker, R. (2005). Unemployment and reservation wages in working-class Cape Town. *South African Journal of Economics*, 73(3), 498-509.
- Rankin, N. A., & Roberts, G. (2011). Youth unemployment, firm size and reservation wages in South Africa. *South African Journal of Economics*, 79(2), 128-145.
- Rankin, N., Roberts, G., & Schöer, V. (2009). Firm Characteristics and Job Matching in South Africa.
- Roberts, G. (2009). Job sorting and search frictions in the labour market for young black South Africans.
- Schöer, V., & Leibbrandt, M. (2006). Determinants of job search strategies: Evidence from the Khayelitsha/Mitchell's Plain survey. *South African Journal of Economics*, 74(4), 702-724.
- Walker, R. (2003). *Reservation Wages: Measurement and Determinants: Evidence from the Khayelitsha/Mitchell's Plain (KMP) Survey* (Doctoral dissertation, University of Cape Town).
- Wittenberg, M. (2002). JOB SEARCH IN SOUTH AFRICA: A NONPARAMETRIC ANALYSIS*. *South African Journal of Economics*, 70(8), 1163-1196.

7 Appendix

Table 7.1: Statistics CAPS only those out of school

		Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Mean age	African	19.8	20.9	22.1	22.7	24.7
	Coloured	19.3	20.2	21.1	21.7	24.4
	White	19.3	20.6	21.3	21.9	24.3
12 years of education (in %)	African	22.39	27.33	33.62	33.51	37.44
	Coloured	31.02	37.56	38.2	37.87	39.68
	White	62.83	83.78	82.96	80.17	86.21
Literacy score	African	-0.43	-0.43	-0.42	-0.42	-0.43
	Coloured	-0.04	0.03	0.00	-0.01	0.02
	White	1.25	1.27	1.29	1.23	1.28
Median full-time wage (In Rand 2008 prices)	African	1335.0254	1650.196	1728.6384	1755.9347	1920.7827
	Coloured	1759.3481	2052.6829	2233.019	2762.7063	3264.1843
	White	3337.5635	2960.3589	3372.8428	3652.6963	5129.666
Median full-time reservation wage (multi question)	African		1119.4	1605.2	1511.7	1678.7
	Coloured		1673.2	1789.6	2050.9	2345.4
	White		2586.9	3704.2	3517.1	4663.1
Median full-time reservation wage (multi question /unemployed)	African	1068.0203	1119.3694	1075.2302	1092.4615	1400.5918
	Coloured	1335.0254	1113.8823	1605.1642	1795.9028	1688.704
	White	2145.1792	1477.6313	2234.2651	2167.3921	3264.1843
Permanently out of school / university (in %)	African	0.40	0.51	0.62	0.72	0.97
	Coloured	0.46	0.65	0.78	0.88	0.98
	White	0.32	0.27	0.40	0.50	0.76
Number of observation	African	866	921	933	1,147	1,281
	Coloured	926	1,090	1,294	1,388	1,396
	White	192	111	135	124	117
Mean unemployment spell (in month)	African	0.2	4.3	4.6	4.5	6.0
	Coloured	0.2	2.2	2.5	3.2	4.8
	White	0.1	0.5	0.1	0.1	0.2
Mean work experience (in month)	African	1.5	4.0	7.3	9.9	20.1
	Coloured	6.5	16.9	20.6	23.4	38.8
	White	7.0	23.0	20.6	23.6	42.6

Table 7.2: Regression on the likelihood of getting into employment

CAPS Wave 1-5 VARIABLES	Single question Get into employment	Multi question Get into employment	Difference Get into employment	Predict dummy Get into employment
Ln(single reservation wage_1)	0.0138 (0.0150)			
Ln (multiple reservation wage_1)		0.0155 (0.0213)		
Difference reservation and predicted wage			0.0152 (0.0166)	
Reservation wage > Predicted wage (dummy)				0.0384 (0.0268)
Age	0.0310 (0.0472)	0.0315 (0.0470)	0.0125 (0.0515)	0.00948 (0.0505)
Age2	-0.000610 (0.00105)	-0.000589 (0.00105)	-0.000193 (0.00114)	-0.000115 (0.00112)
Education	-0.0560 (0.0386)	-0.0372 (0.0363)	-0.0635 (0.0400)	-0.0640 (0.0399)
Education2	0.00537** (0.00215)	0.00437** (0.00205)	0.00587*** (0.00222)	0.00591*** (0.00221)
Male	0.103*** (0.0190)	0.100*** (0.0195)	0.101*** (0.0207)	0.102*** (0.0208)
Working experiance_1	0.00487*** (0.00118)	0.00385*** (0.00121)	0.00446*** (0.00125)	0.00452*** (0.00125)
Coloured	0.0824*** (0.0269)	0.0980*** (0.0275)	0.103*** (0.0288)	0.102*** (0.0286)
White	0.176* (0.0965)	0.176* (0.103)	0.223* (0.118)	0.222* (0.118)
Constant	-0.215 (0.580)	-0.313 (0.585)	0.109 (0.608)	0.114 (0.591)
Observations	2,835	2,648	2,416	2,416
R-squared	0.090	0.085	0.087	0.088

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1