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Estimating the Effects of South Africa's Youth Employment Tax Incentive – An Update

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Estimating the Effects of South Africa's Youth Employment Tax Incentive – An Update

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Abstract

Our previous study of the effects of South Africa's Employment Tax Incentive (ETI) (Ranchhod and Finn, 2014) found that the ETI did not have a statistically significant impact on youth employment probabilities in the first six months of 2014. In this update we extend the period of analysis from six months to all twelve months of 2014 and find that this does not alter our qualitative findings. These are that the ETI has not resulted in a statistically significant change in the probability of young people finding jobs, despite its cost of R2 billion over the first year of its existence. Furthermore, there is no evidence to suggest that the introduction of the ETI resulted in an increase in the level of churning for youth in the labour market.

JEL codes: H25, H32, J38

Keywords: Youth, unemployment, South Africa, wage subsidy, employment tax incentive.

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1. Introduction

More than one full year has passed since the introduction of South Africa's youth employment tax incentive (ETI) on the 1st of January 2014. The only publically available appraisal of the ETI's coverage during its first year of existence (at the time of writing) is in President Jacob Zuma's State of the Nation address from February 2015 (Zuma, 2015).[3] In this speech President Zuma notes that "R2 billion has been claimed to date by some 29 000 employers, who have claimed for at least 270 000 young people." This statement is more cautious than many of the headlines in the media that misinterpreted the numbers and claimed that 270 000 new jobs had been created as a result of the ETI (for example Marrian, 2015, The Times, 2015). Even government's own news agency misrepresented the data from SARS by claiming that "[e]mployment tax incentives leads to 270 000 new jobs" (sic) (South African Government News Agency, 2015).

Our previous study on the short-run impact of the ETI (Ranchhod and Finn, 2014) used Quarterly Labour Force Survey (QLFS) data from the first six months of 2014 in order to investigate whether the implementation of the programme had made a statistically significant difference to the probability of young people being employed. We did not find any evidence to suggest that the ETI had any "substantial, positive and statistically significant effect on aggregate youth employment probabilities" (Ranchhod and Finn, 2014).

An obvious criticism of our previous study is the fact that the impact of the ETI on youth employment probabilities may only have become evident over a time period that is longer than six months. In this update we make use of QLFS data from the 12 quarters before the introduction of the ETI and the four quarters of 2014 in order to answer the following question: "Did the ETI have an impact on youth employment rates during its first year of existence?" In line with our previous study, we find no evidence to suggest that the ETI increased the probability of youth employment, and no evidence to suggest that the programme resulted in increased churning in the labour market for youth. This finding has important policy implications, given that 270 000 jobs were subsidised at an average cost of approximately R7 400 each over the course of the year.

This update proceeds as follows. Section 2 presents the datasets used in the analysis, as well as descriptive statistics. Section 3 uses difference-in-differences regression analysis to investigate the impacts of the ETI. This includes investigating whether there was a change in employment probabilities, and whether there was a change in the rate of churning in the labour market. Section 4 concludes.

[3] In this speech, President Zuma quotes figures that were released to the public by Treasury spokesman Jabulani Sikhakhane in January 2015 (see Marrian, 2015).

2. Data and sample used in analysis

In this update, we make use of 16 waves of data from the QLFS, produced by Statistics South Africa (StatsSA). This includes three years of data from before the introduction of the ETI and one year of data coinciding with the first year of its implementation. We treat each wave of QLFS data as a cross section. Table 1 presents the aggregate size of the dataset that we use (762 390 respondents), along with the relevant sample sizes for different age categories.

Our sample is restricted to adults between the ages of 18 and 64. We have 281 678 youth in the sample (aged between 18 and 29), 90 961 "almost youth", 227 217 "prime aged" adults and 162 534 "older" respondents.

Table 1: Sample sizes by wave and age group

Wave	All Youth (18-29)	Non-Youth				Total
		Almost Youth (30-34)	Prime Aged (35-49)	Older (50-64)	All non-Youth	
1	17 101	5 227	13 888	9 496	28 611	45 712
2	17 020	5 112	13 714	9 613	28 439	45 459
3	17 707	5 342	14 226	9 705	29 273	46 980
4	17 903	5 482	14 262	9 886	29 630	47 533
5	17 486	5 558	14 343	9 961	29 862	47 348
6	17 451	5 635	14 329	10 064	30 028	47 479
7	17 631	5 750	14 511	10 297	30 558	48 189
8	17 619	5 757	14 486	10 241	30 484	48 103
9	17 412	5 776	14 345	10 256	30 377	47 789
10	17 829	5 973	14 608	10 436	31 017	48 846
11	18 099	5 944	14 429	10 439	30 812	48 911
12	18 172	6 012	14 495	10 491	30 998	49 170
13	18 088	5 913	14 370	10 437	30 720	48 808
14	17 423	5 808	13 795	10 257	29 860	47 283
15	17 492	5 924	13 777	10 514	30 215	47 707
16	17 245	5 748	13 639	10 441	29 828	47 073
All Waves	281 678	90 961	227 217	162 534	480 712	762 390

3. Methods and results

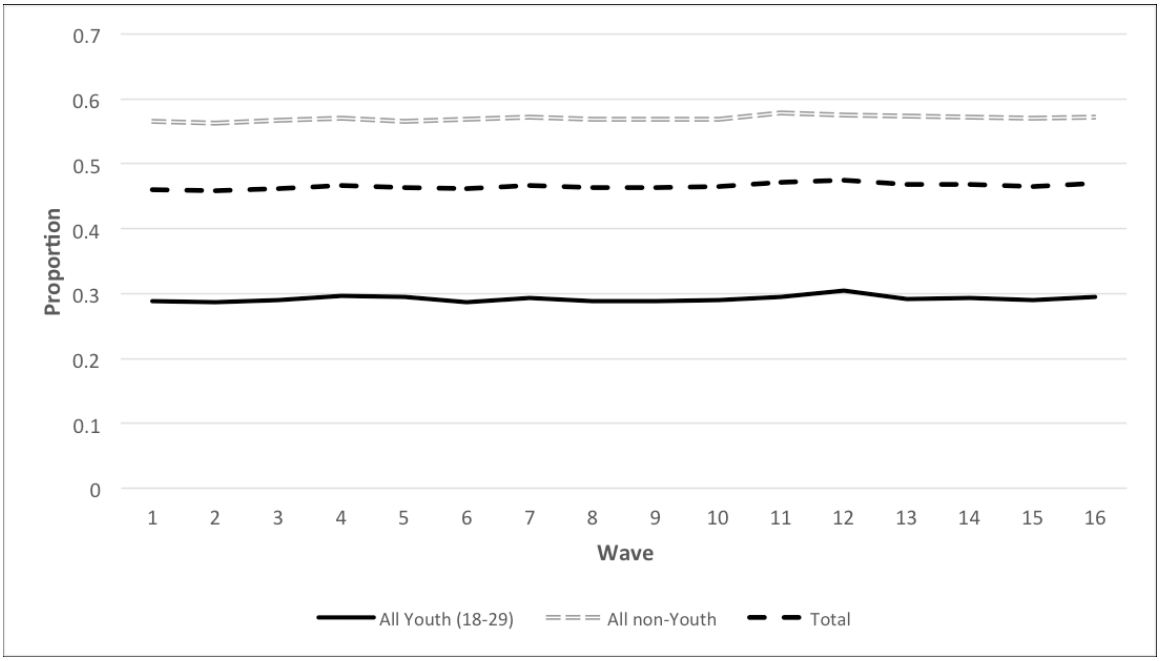
As in our previous study, our key set of results comes from the estimation of a difference-in-differences model. The Ranchhod and Finn (2014) study estimates two separate coefficients of interest – the interaction terms of a post-policy dummy variable with a youth dummy variable in period one (the first quarter of 2014) and the same for period two (the second quarter of 2014). In the interests of interpretational brevity we have changed the specification in this update so that we now have one, rather than four, coefficients of interest. A model of the following form is fitted:

$$y = \beta_0 + \beta_1 trend + \beta_2 (trend * post) + \beta_3 youth + \alpha_1 (youth * trend * post) + \boldsymbol{\lambda X} + \varepsilon$$

In this specification the dependent variable is a dummy variable that is equal to one if the respondent is employed, and zero if not. The estimation sample is all working age adults aged 18 to 64, inclusive, in the datasets. The "treated" group is given by the "*youth*" variable, and the "treatment period" is given by the "*post*" variable. The "*trend*" variable reflects trends in the untreated group in the three years preceding the start of the ETI. The "*trend*" and "*post*" interaction term allows for a trend break in the post implementation period amongst the untreated group. The "*youth*" variable captures mean differences in the employment rates of youth compared to non-youth in three years prior to the start of the ETI. The vector $\boldsymbol{X}$ includes controls for race, gender, education level, geotype, province and quarter. Our primary coefficient of interest is α_1. This coefficient on the interaction term between the "*youth*" dummy variable, the "*trend*" variable and the post implementation dummy variable answers the following question: Is there an additional trend break amongst youth in the post implementation period, relative to what we would have expected based on any possible trend breaks that occurred amongst the counterfactual group in the post implementation period? In the absence of any additional confounding factors, this coefficient represents the average treatment effect of the ETI in its first year of existence.

As in our previous study on the ETI, we are interested in whether there is a change in the trend line of the employment probabilities of youth compared to non-youth in the period following the start of the programme. This is investigated graphically in Figure 1, below. The aggregate labour absorption rate, shown by the thick dashed line, displays a very small upward trend over the 16 waves of data. The same narrative holds for the trend line of labour absorption rates for non-youth, given by the top line in the figure. The trend line for youth is at a much lower level than the corresponding line for non-youth, and is shown to reach a peak in wave 12 – three months before the start of the ETI. Thereafter it decreases slightly, and is relatively stable at just under 30% for all four quarters of 2014.

Figure 1 Mean labour force participation rates by age category



Notes: All observations are weighted using the sampling weights. The sample includes any respondent of a particular group, including those who are not economically active.

The results of our difference-in-differences estimation over the 16 waves can be found in Table 2.[4] Our preferred specification is shown in column (1), in which the counterfactual group comprises all non-youth. The coefficient of interest as well as its standard error appear in bold in the table.

Looking across the output for all four difference-in-differences regressions, we see that the coefficient on the "*Trend*" variable is tiny, and is never statistically significantly different from zero. This implies that employment probabilities for the counterfactual group were flat in the three years prior to the introduction of the ETI. The "*Trend*" and "*Post*" interaction term is not statistically significantly different from zero in the first and third column. This implies that there was no trend break in the post implementation period for non-youth (as a single group) and prime aged adults respectively. The coefficient of this interaction term for the almost youth category is negative and significant at the 10% level, indicating that there was a slight downward trend in employment probabilities for those in the 30-34 age category during 2014. The opposite interpretation holds for older workers (aged 50 to 64) in 2014, as the coefficient is positive and statistically significant at the 10% level.

[4] This table presents four different counterfactual groups: non-youth, almost youth, prime ages adults and older adults. A full set of results differentiating by skill level, urban and rural areas, and formal versus informal employment are available from the authors. The qualitative results of these slightly modified specifications are the same as they were in the previous study.

As in the previous study, the coefficient on the "*Youth"* variable is positive and statistically significant at the 1% level for all of the specifications presented. This coefficient should be interpreted in conjunction with the age and age squared coefficients, because of the direct mapping of these variables to the youth variable. Once this is taken into account the results accord with the higher labour absorption rates for non-youth that were presented earlier.

The coefficient that we are most interested in is the one that corresponds to the "*Youth_trend_post*" variable in each of the four columns of output. The coefficient in the first column, our preferred specification, is an incredibly small -0.000294. This indicates that youth in 2014 were between 0.38 and 0.47 percentage points less likely to be employed that non-youth, conditional on all of the other covariates in the estimating equation.[5] This point estimate is not statistically significantly different from zero, and the confidence interval of (-0.0009011, 0.000314) represents a precisely estimated zero effect.

Regressions two and three, in which the counterfactual groups are almost youth and prime aged adults respectively, both return coefficients and associated standard errors that are very small in magnitude. The absolute value of the effect in these two columns does not exceed seven hundredths of one percentage point, and neither coefficient is statistically significant at any of the conventional levels. There is one coefficient of interest that is statistically significant, and that is in the fourth column in which the counterfactual group is older workers. The coefficient on the "*Youth_trend_post*" variable of -0.00116 suggests that youth were between 1.51 and 1.86 percentage points less likely to be employed in 2014 compared to older workers, conditional on all the other covariates in the estimating equation.

These results, taken together, leave us reasonably confident that the introduction of the ETI did not have a substantial positive effect on aggregate youth employment probabilities during its first year of existence.[6] The reasons for why this might be the case are discussed extensively in our previous study, to which the interested reader is referred.

[5] This interval comes from multiplying the coefficient by 13, 14, 15 or 16, depending on which quarter of 2014 is of interest. Note that this is a slightly modified specification from the one that appeared in our previous study in which we interacted the youth variable with an indicator for the first and second quarters of 2014 separately. The results of estimating the model this way (not reported here, but available from the authors) are consistent with the results of both this and the previous study.

[6] This finding holds consistently for all the robustness tests that were part of the original paper as well. This output is omitted from this update in the interests of brevity, but is available from the authors.

Table 2: Difference-in-differences regressions on youth employment probability

	(1)	(2)	(3)	(4)
Dependent variable	Employed	Employed	Employed	Employed
Comparison group	Non-youth	Almost youth	Prime aged	Older
VARIABLES				
Trend	0.000520	0.000192	0.000413	0.000505
	(0.000411)	(0.000525)	(0.000451)	(0.000481)
Trend_post	-0.000170	-0.000964*	-0.000116	0.000711*
	(0.000277)	(0.000493)	(0.000362)	(0.000427)
Youth	0.0543***	0.0259***	0.0975***	0.0902***
	(0.00487)	(0.00724)	(0.00689)	(0.0125)
Youth_trend_post	**-0.000294**	**0.000702**	**-0.000281**	**-0.00116*** **
	(0.000310)	**(0.000482)**	**(0.000373)**	**(0.000434)**
Age	0.0872***	0.115***	0.0969***	0.0960***
	(0.000748)	(0.00429)	(0.00123)	(0.000880)
Age squared	-0.00102***	-0.00152***	-0.00115***	-0.00112***
	(8.68e-06)	(9.01e-05)	(1.84e-05)	(1.09e-05)
Constant	-1.385***	-1.701***	-1.567***	-1.550***
	(0.0172)	(0.0475)	(0.0227)	(0.0235)
Observations	762,390	372,639	508,895	444,212
R-squared	0.216	0.223	0.245	0.208

Notes:
1. Standard errors are shown in parentheses and are clustered at the PSU level.
2. Asterisks denote statistical significance as follows: *** p<0.01, ** p<0.05, * p<0.1.
3. Suppressed coefficients on race dummies, male, tertiary education, urban dummy, province dummies and quarter dummies.
4. Regressions incorporate survey weights.

One final issue to consider is whether the introduction of the ETI resulted in increased churning for youth in the labour market. Table 3 addresses this by estimating regressions to test for whether job inflow and outflow rates changed for the youth in 2014 compared to the three years prior to the introduction of the ETI. Even if the results of the employment probability regressions suggest no positive and significant effect on aggregate employment probabilities, there might have been a change in the rate at which the youth are finding employment. If a positive change in the rate of finding jobs is balanced by an increase in the

rate of losing jobs, then the ETI could be impacting youth employment through increased churning, even if the aggregate youth labour absorption rate remains constant.

In columns (1) and (2) we regress whether a youth was employed in the last three months and the last six months respectively on a set of covariates including a trend dummy, a trend and post ETI introduction interaction term, and quarter dummies. Columns (3) and (4) estimate analogous equations, except for dependent variables indicating recent job losses. The coefficient of the "*Trend_post*" variable is of particular interest as it is effectively a test for whether there was a trend break in the job finding or job loss rate amongst youth in 2014.

Both the coefficients and corresponding standard errors on the "*Trend_post*" variable, in all four regression models, are very small in magnitude, and none of the coefficients are statistically significantly different from zero at any of the conventional levels. Again, in line with our previous study, we find no evidence to suggest that the introduction of the ETI has had an effect on the rate at which the youth find jobs and lose jobs. This implies that, given the best data that is available to us, the hypothesis of increased youth churning in the labour market has no empirical support.

Table 3: Regressions to test for changes in outflows or inflows into employment amongst youth

Dependent variable	(1) Recentjob_3	(2) Recentjob_6	(3) Recentloss_3	(4) Recentloss_6
VARIABLES				
Trend	0.00131*** (0.000460)	0.00233*** (0.000793)	0.000551** (0.000224)	0.000768** (0.000324)
Trend_post	**0.000122** **(0.000323)**	**0.000312** **(0.000522)**	**5.97e-06** **(0.000150)**	**-3.38e-06** **(0.000214)**
Second quarter	-0.0272*** (0.00378)	0.0179*** (0.00508)	-0.00670*** (0.00150)	-0.00217 (0.00188)
Third quarter	-0.0230*** (0.00400)	-0.00853 (0.00572)	-0.00622*** (0.00153)	-0.00727*** (0.00200)
Fourth quarter	-0.0303*** (0.00404)	-0.0166*** (0.00518)	-0.00838*** (0.00158)	-0.0104*** (0.00198)
Constant	0.0829*** (0.00386)	0.165*** (0.00618)	0.0388*** (0.00193)	0.0630*** (0.00264)
Observations	76,311	76,311	205,367	205,367
R-squared	0.002	0.002	0.000	0.000

4. Conclusion

During the first year of its existence, South Africa's Youth Employment Tax Incentive subsidised 270 000 young workers, at an average cost of approximately R7 400 per worker per year. Subsidies for the salaries of these 270 000 young workers were claimed by 29 000 firms across the country. We use 16 waves of nationally representative QLFS data and update our previous findings to investigate whether the programme had any discernible impact on youth employment probabilities at the aggregate level during 2014.

The qualitative nature of our findings when using a full year of data is no different to our previous study which used only six months of data. These findings are that the ETI did not have any substantial, positive and statistically significant impact on youth employment probabilities. There was also no statistically significant effect in the extent of labour market churning amongst youth. Possible reasons for our precisely estimated zero effect are outlined in our previous study, which also discusses the implications of our findings from a policy perspective. Given how stubbornly high youth employment is in South Africa, and given how expensive the ETI programme was in 2014, we look forward to SARS publishing more comprehensive data that will allow researchers to explore the issue further.

References

Marrian, N. (2015). “Tax incentive ‘put 270 000 in jobs’”. Retreived June 29 2015 from Business Day: http://www.bdlive.co.za/business/2015/01/15/tax-incentive-put-270000-in-jobs

Ranchhod, V. & Finn, A. (2014). “Estimating the Short-run Effects of South Africa’s Employment Tax Incentive on Youth Employment Probabilties Using a Difference-in-differences Approach”. Southern Africa Labour and Development Research Unit Working Paper Number 134. Cape Town: SALDRU, University of Cape Town.

South African Government News Agency. (2015). “Employment tax incentive leads to 270 000 new jobs”. Retrieved July 30 from South African Government News Agency: http://sanews.gov.za/south-africa/employment-tax-incentives-leads-270-000-new-jobs

The Times. (2015). “Figures show that unions wrong on youth jobs incentive”. Retreived July 30 from Times Live: http://www.timeslive.co.za/thetimes/2015/01/ 19/figures-show-that-unions-wrong-on-youth-jobs-incentive

Zuma, J. (2015). “State of the Nation Address, February 2015”. Pretoria: The Presidency.

southern africa labour and development research unit

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