Becoming Youthful? An Evaluation of the South African Employment Tax Incentive (ETI)

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- Government to decide whether to extend or not based on evaluation.

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- Firms may fire workers that are not eligible for the subsidy resulting in a) displacement and b) churn.

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$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 T_t X_t + \beta_4 Z + \beta_5 Z T_t + \beta_6 Z X_t + \beta_7 Z X_t T_T + \epsilon_t$$

(1)

- Where T is the time since the study began, X is a dummy for the intervention start, Z is a dummy for treatment. See Linden 2015.

- Each observation is a month-firm. I use aggregated values for treatment and non-treatment groups.

- No control so compare to all other firms and match on a set of variables using nearest neighbor matching based on pre-intervention variables to construct a comparison group.

- Control for differences from the baseline and differences in the trend for "treated" and "control"

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- 290 414 firms in total and 30 696 claimed the ETI. In the balanced panel, there are 166 579 firms in the panel and 22 733 are on the ETI.
- No new firms. 24 503 new firms in period under study and 2 416 on ETI. On average, new ETI claimant firms are younger and larger than new firms that didn't claim the incentive.
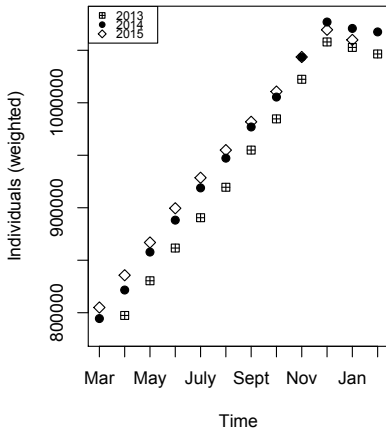
Employment Over Time: All Firms
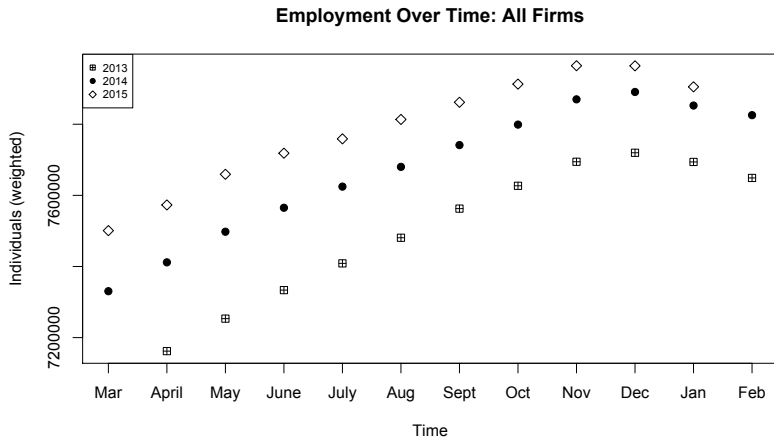
Employment of Individ. 18-29: All Firms
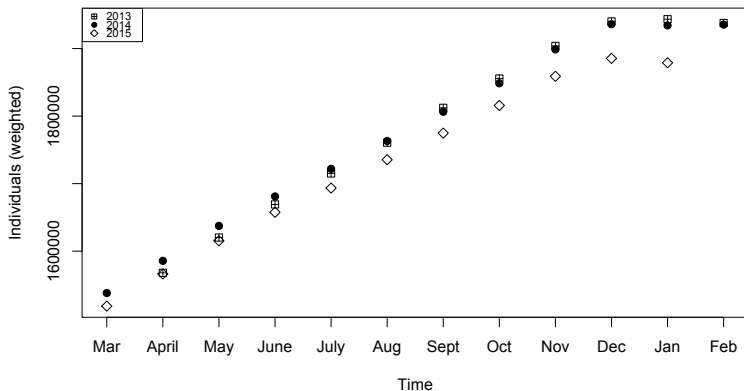
Number of employees 18-29: ETI

Number of employees 18-29: non-ETI
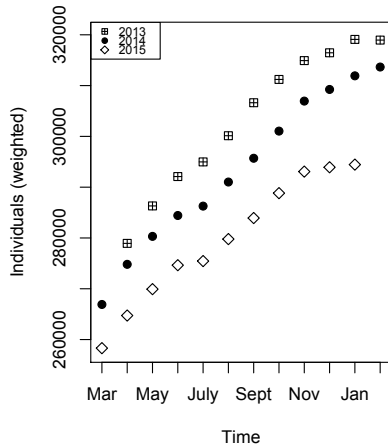
ETI Descriptive Statistics: General

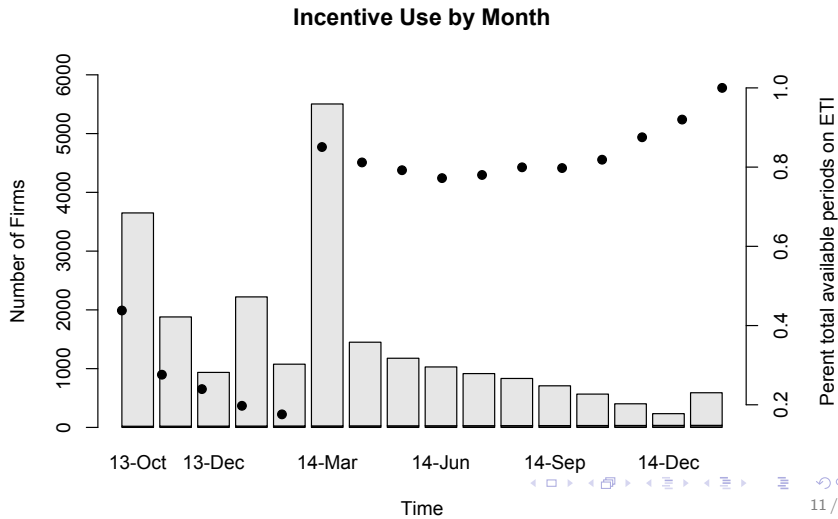|	2014 tax year	2015 tax year
Eligible jobs	323 502	1 320 056
Firms with eligible jobs	43 201	109 324
ETI claims	251 503	779 523
No. of firms claiming ETI	12 306	25 878
Truly eligible claims	107 491	400 987
Claimed for eligible	R121 192 570	R1 339 722 028
Max to claim for eligible	R119 587 584	R1 321 521 574
Difference in claims	R1 604 986	R18 200 454
Difference in duration eligible non-ETI and ETI	11 days***	74 days***

Matched on: Percent young, total number employees, percent income eligible (earning R2000 to R6000 per month), percent in Gauteng and hires as percent total employees.

Nearest neighbour propensity score matching with callipers of 0.25 and replacement.

	Before Jan 2014			After Jan 2014		
	ETI Firms	Non-ETI firms (match)	Non-ETI firms (all)	ETI Firms	Non-ETI firms (match)	Non-ETI firms (all)
No. 18-29	41.37	14.89	5.77	42.62 (0.03)	14.28 (-0.04)	5.45 (-0.06)
Percent 18-29	0.3	0.3	0.18	0.3 (0)	0.29 (-0.03)	0.16 (-0.12)
No. employees	132.8	78.36	31.66	139.97 (0.05)	79.81 (0.02)	32.06 (0.01)
Hires	12.02	5.03	2.07	16.18 (0.26)	7.37 (0.32)	3.34 (0.38)
Hires 18-29	4.94	1.3	0.53	6.51 (0.24)	1.85 (0.3)	0.8 (0.34)
Hires over 30	7.17	3.76	1.55	10.25 (0.3)	5.74 (0.34)	2.64 (0.41)
Separations	4.14	0.62	0.33	4.95 (0.16)	0.71 (0.13)	0.48 (0.31)
Separations 18-29	2.03	0.25	0.12	2.52 (0.19)	0.3 (0.17)	0.18 (0.33)
Separations over 30	2.14	0.37	0.21	2.54 (0.16)	0.42 (0.12)	0.32 (0.34)

Incentive Use by Month

Main Regression Results

|	Dependent variable:		
	Number employees 18-29	Percent employees 18-29	Total employees
Intercept β_0	253,191.8***	0.3***	1,485,162.0***
	(19,897.0)	(0.001)	(26,468.4)
Baseline trend β_1	−2,432.4**	0.000	−731.5
	(936.9)	(0.000)	(1,197.4)
Level change after ETI β_2	45,101.4	0.01***	72,335.5
	(35,499.3)	(0.002)	(48,068.2)
Trend change after ETI β_3	−3,204.0	−0.003***	−4,902.5
	(3,427.9)	(0.000)	(4,640.0)
Treatment β_4	568,975.0***	0.01***	1,287,600.0***
	(17,026.9)	(0.001)	(23,041.6)
Baseline trend for treated β_5	6,209.2***	−0.001***	14,038.8***
	(1,148.6)	(0.000)	(1,502.7)
Level change after ETI for treated β_6	−85,752.1*	−0.003	−123,972.3**
	(45,065.4)	(0.002)	(58,548.0)
Trend change after ETI for treated β_7	2,958.1	0.004***	2,773.1
	(4,553.1)	(0.000)	(5,888.6)

Effect of the ETI on Percent Young Employees
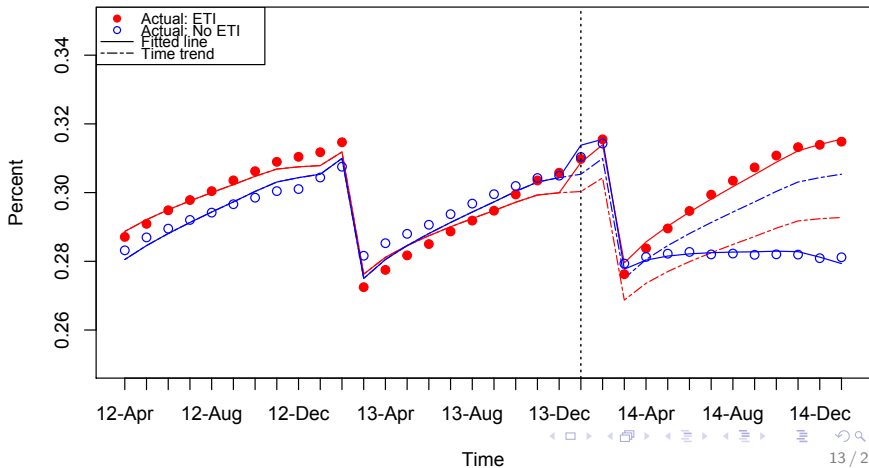
ETI Effects on Employment of Individuals Aged 18 to 29: January 2014 Take Up
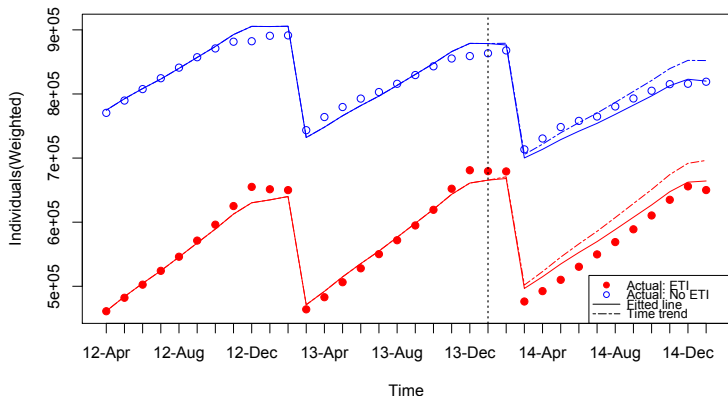
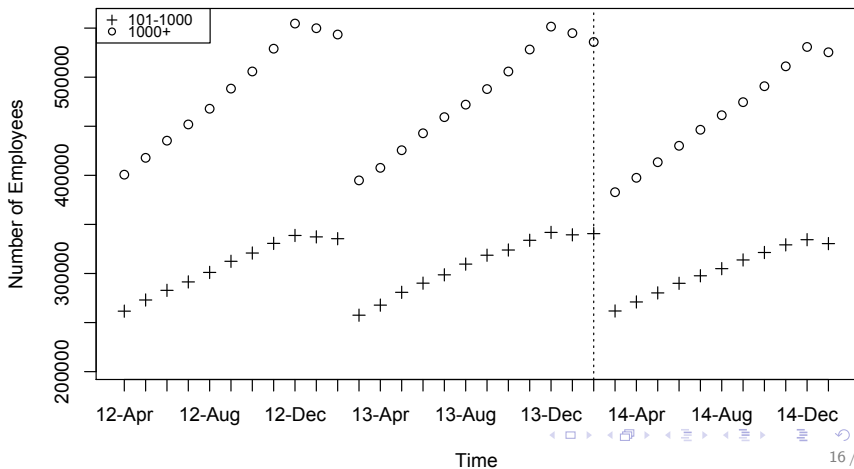N=8 582, number of employees in ETI firms 567 405

Effect of the ETI on Number Employees 18 to 29: March Start
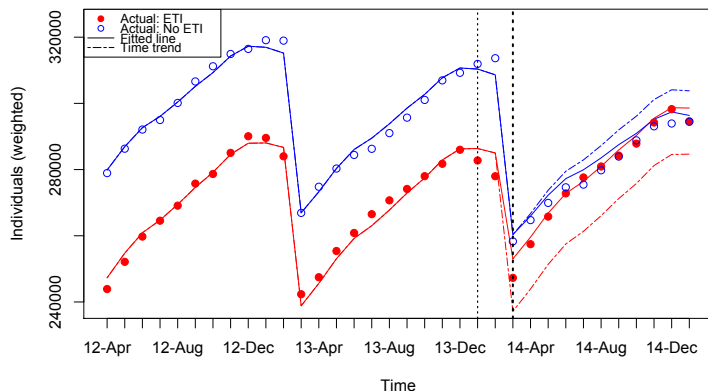
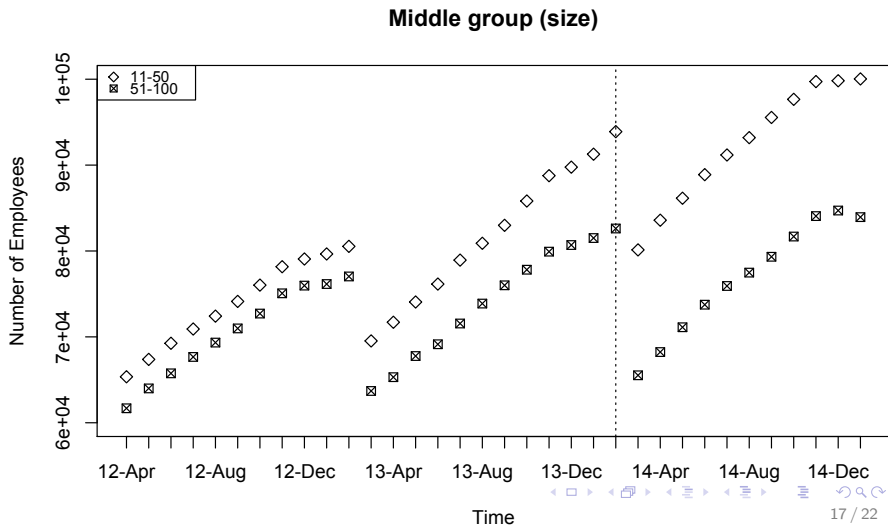N= 5 479, number of employees in ETI firms 83 0284

101-1000 employees: 3 837 firms (17%); 1000+ 389 firms (1.7%)
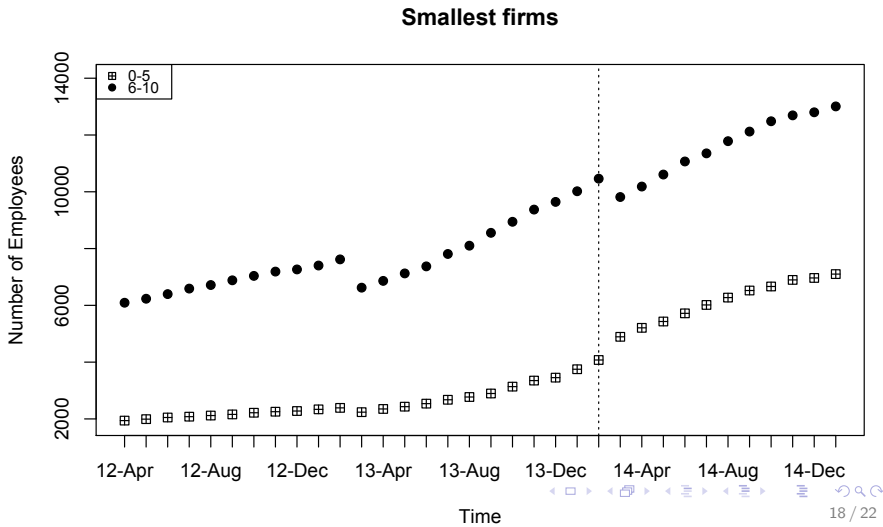
Biggest Firms

Data

11-50 employees: 9 931 firms (44%); 51-100 employees: 3 280 firms (14%)

Middle group (size)

Data

0-5 employees: 2 251 firms (10%); 6-10 employees: 3 045 firms (13%)

Smallest firms

Employees	Effect on ETI firms	Effect on non-ETI firms	No. of ETI firms	No. of firms not on ETI	Employees in ETI group pre-Jan 14	Percent change
0 to 5	3028.22	-566.93	2251.00	7286.00	7918.00	0.38
6 to 10	2373.24	-899.06	3045.00	4859.00	24101.00	0.10
11 to 50	1686.55	-4507.86	9931.00	6572.00	256817.00	0.01
51 to 100	-5317.84	0.00	3280.00	726.00	239006.00	-0.02
101 to 1000	-28033.74	0.00	3837.00	429.00	1003712.00	-0.03
1000+	-53486.85	0.00	389.00	73.00	1487485.00	-0.04

Smaller firms see 2.5% increase employment (7 088 young employees) relative to other firms and own time trend.

Larger firms decrease by 3.1% (or 86 838 young employees) relative to others and own time trend.

Conclusions

Looking at firms in aggregate, no sustained impact on employment of young people.

Positive effects amongst small firms, fewer of them. Problem of adequate controls for larger firms? Does this explain trend in composition (more youthful?)

No evidence of older workers being hired at greater rates in firms that use the incentive relative to other firms.

No evidence of individuals being fired to take advantage of ETI in 2014 tax year.

What will we find with more data? Only 13 periods in this period out of 36 policy periods...

What's going on with new firms?

Why did some firms only take up subsidy later in the year?

How are false claims verified?

What kind of jobs are being subsidised?

Why did some firms not stay on the subsidy?

Other effects, e.g. on ability of young people to find a job in future, etc.

Could this have been designed to achieve twin goals of policy makers (job growth) and researchers (clean identification)?

Table : Estimated Effect at Jan 2015

Periods after "start"	Month started	ETI firms	Non-ETI firms	Total employees ETI firms	Percent change ETI firms	Number of ETI firms
1	Oct 13	0.00	0.00	1390587.00	0.00	3630
2	Nov 13	0.00	0.00	179257.00	0.00	1859
3	Dec 13	0.00	0.00	85282.00	0.00	914
4	Jan 14	0.00	0.00	175071.00	0.00	2198
5	Feb 14	26803.78	0.00	56906.00	0.47	1052
6	March 14	14523.90	-7961.30	849367.00	0.02	5479
7	April 14	200.14	-5310.06	74198.00	0.00	1424
8	May 14	-4938.17	-2090.19	60798.00	-0.08	1150
9	June 14	-6623.99	445.86	47946.00	-0.14	1001
10	July 14	-469.90	8932.53	38003.00	-0.01	887
11	Aug 14	-17737.60	0.00	34996.00	-0.51	803
12	Sept 14	-12459.93	0.00	29579.00	-0.42	677
13	Oct 14	-6930.92	0.00	17481.00	-0.40	535
14	Nov 14	-11939.15	0.00	11898.00	-1.00	369
15	Dec 14	-11189.23	0.00	8061.00	-1.39	200