Statistics/Data analysis

```
      name:  <unnamed>
       log:  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\data
> sets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\non_
> seasonal_firm_level_entry_exit_analysis.smcl
  log type:  smcl
 opened on:  29 Jan 2024, 14:48:39

1 .         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
> asets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal"
Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
> ies\Analysis using Marlies code and Michael's samples\Non Seasonal

2 .         cap drop if taxrefno==""

3 .
4 . // Merge in the CIT indicators from MK sample
5 .
6 .         merge 1:1 taxrefno taxyear using "Z:\Workbenches\epadmin\michael_kilumelume\
> 2024 projects\minimum wage\datasets for Marlies\Full_CIT_sample_cleaned.dta", gen(me
> rge_CIT)
(variable taxyear was int, now float to accommodate using data's values)

    Result                           # of obs.
    -----------------------------------------
    not matched                        42,048
        from master                    34,012  (merge_CIT==1)
        from using                      8,036  (merge_CIT==2)

    matched                            10,876  (merge_CIT==3)
    -----------------------------------------

7 .
8 .         gegen fid=group(taxrefno)

9 .         xtset fid taxyear
       panel variable:  fid (unbalanced)
        time variable:  taxyear, 2011 to 2017, but with gaps
                delta:  1 unit

10.
11.         egen years_alive=count(taxyear), by(fid)

12.         egen firm_year_entry=min(taxyear), by(fid)

13.         egen firm_year_exit=max(taxyear), by(fid)

14.
15.         gen non_survivor=0

16.         replace non_survivor=1 if firm_year_exit==2014 | firm_year_exit==2015 | firm
> _year_exit==2016
(8,594 real changes made)

17.
18.         gen survivor=0

19.         replace survivor=1 if years_alive==7
(24,409 real changes made)
```

```
20.         replace survivor=1 if firm_year_entry==2012 & years_alive==6
  (3,534 real changes made)

21.
22.         tab years_alive merge_CIT
```

years_alive	merge_CIT: master on	using onl	matched (	Total
1	**1,251**	**747**	**169**	**2,167**
2	**1,894**	**1,045**	**321**	**3,260**
3	**2,478**	**1,141**	**641**	**4,260**
4	**3,359**	**1,003**	**622**	**4,984**
5	**3,640**	**1,046**	**884**	**5,570**
6	**5,538**	**1,268**	**1,468**	**8,274**
7	**15,852**	**1,786**	**6,771**	**24,409**
Total	**34,012**	**8,036**	**10,876**	**52,924**

```
23.
24.         tsfill, full // we need to do this so that we can move up exit figures by a
  > year

25.
26.         label variable entry_agri "Number of entrants into agri by firm"

27.         label variable exit_agri "Number of exits out of agri by firm"

28.
29. // Merge in rainfall data and clean province info
30.
31.         merge m:1 taxyear mode_prov using "Z:\Workbenches\widerinequality\marlies_pi
  > ek\updated_employment_paper\out_files\2022\_20220204\Rainfall_data_merge_ready.dta"
```

Result	# of obs.	
not matched	**45,373**	
from master	**45,265**	(_merge==1)
from using	**108**	(_merge==2)
matched	**41,836**	(_merge==3)

```
32.
33.
34.         gen mode_prov_num=1 if mode_prov=="Eastern Cape"
  (83,120 missing values generated)

35.         replace mode_prov_num=2 if mode_prov=="Free State"
  (4,637 real changes made)

36.         replace mode_prov_num=3 if mode_prov=="Gauteng"
  (3,368 real changes made)

37.         replace mode_prov_num=4 if mode_prov=="KwaZulu-Natal"
  (6,876 real changes made)

38.         replace mode_prov_num=5 if mode_prov=="Limpopo"
  (2,346 real changes made)
```

```
39.         replace mode_prov_num=6 if mode_prov=="Mpumalanga"
  (3,920 real changes made)

40.         replace mode_prov_num=7 if mode_prov=="North West"
  (1,976 real changes made)

41.         replace mode_prov_num=8 if mode_prov=="Northern Cape"
  (2,503 real changes made)

42.         replace mode_prov_num=9 if mode_prov=="Western Cape"
  (12,229 real changes made)

43.
44.         tab mode_prov_num
```

mode_prov_num	Freq.	Percent	Cum.
1	**4,089**	**9.75**	**9.75**
2	**4,637**	**11.06**	**20.80**
3	**3,368**	**8.03**	**28.83**
4	**6,876**	**16.39**	**45.23**
5	**2,346**	**5.59**	**50.82**
6	**3,920**	**9.35**	**60.17**
7	**1,976**	**4.71**	**64.88**
8	**2,503**	**5.97**	**70.84**
9	**12,229**	**29.16**	**100.00**
Total	**41,944**	**100.00**	

```
45.         label define prov 1 "Eastern Cape" 2 "Free State" 3 "Gauteng" 4 "KwaZulu-Nat
  > al" 5 "Limpopo" 6 "Mpumalanga" 7 "North West" 8 "Northern Cape" 9 "Western Cape"

46.         label values mode_prov_num prov

47.         tab mode_prov_num
```

mode_prov_num	Freq.	Percent	Cum.
Eastern Cape	**4,089**	**9.75**	**9.75**
Free State	**4,637**	**11.06**	**20.80**
Gauteng	**3,368**	**8.03**	**28.83**
KwaZulu-Natal	**6,876**	**16.39**	**45.23**
Limpopo	**2,346**	**5.59**	**50.82**
Mpumalanga	**3,920**	**9.35**	**60.17**
North West	**1,976**	**4.71**	**64.88**
Northern Cape	**2,503**	**5.97**	**70.84**
Western Cape	**12,229**	**29.16**	**100.00**
Total	**41,944**	**100.00**	

```
48.
49.
50. ********************************************************************************
51. *                               Fraction affected, wage gaps & treatment indicators
  >                                                                              *
52. ********************************************************************************
53.
54.         summ frac if agri==1, de // p25 at 63%, median is at 85%
```

(mean) frac_annual

Percentiles		Smallest		
1%	**.5833333**	**.5013698**		
5%	**.7620192**	**.5027322**		
10%	**.8356165**	**.5027322**	Obs	**44,888**
25%	**.9221184**	**.5027322**	Sum of wgt.	**44,888**

```
  50%      .9754042                      Mean           .9435059
                        Largest         Std. dev.      .0835685
  75%             1              1
  90%             1              1       Variance       .0069837
  95%             1              1       Skewness      -2.305219
  99%             1              1       Kurtosis       8.946866

55.         label variable frac "Employee's fraction of year worked, averaged by firm &
  > year"

56.
57.         drop if agri==0 // these firms are non-agri
  (0 observations deleted)

58.
59.         gen l_leg_min_w_2014=l_leg_r_min_wage if taxyear==2014
  (80,698 missing values generated)

60.         gegen l_leg_min_w_2014_a=max(l_leg_min_w_2014)

61.         drop l_leg_min_w_2014

62.
63.
64. * Treatment indicator (proportion of workers affected in 2013)
65.         gegen prop_affected_all=max(prop_affected), by(fid)
  warning: gegen is NOT parsing the expression 'prop_affected' by group.
  To parse this expression by group, call gegen using the -by:- prefix.

66.         label variable prop_affected_all "Proportion of workers in 2013 that earned
  > below the 2014 min wage"

67.
68.
69. ********************************************************************************
70. *                                                                  Entry & exit stats
  >                                                                 *
71. ********************************************************************************
72.         table taxyear, cont(sum entry_agri sum exit_agri2)
```

The year of assessment.	sum(entry_~l)	sum(exit_a~l)
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	0	0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	0	0
2011	0	38063
2012	50392	40302
2013	50069	42728
2014	38808	36123
2015	41704	38381
2016	41906	44802
2017	43717	0
2018	0	0
2019	0	0

```
73.
74.         replace entry_agri=. if taxyear==2011 // first year of panel, thus all enter
  > ed 2011
  (5,547 real changes made, 5,547 to missing)

75.         table taxyear, cont(sum entry_agri sum exit_agri2)
```

The year of assessment.	sum(entry_~l)	sum(exit_a~l)
2001	**0**	**0**
2002	**0**	**0**
2003	**0**	**0**
2004	**0**	**0**
2005	**0**	**0**
2006	**0**	**0**
2007	**0**	**0**
2008	**0**	**0**
2009	**0**	**0**
2010	**0**	**0**
2011	**0**	**38063**
2012	**50392**	**40302**
2013	**50069**	**42728**
2014	**38808**	**36123**
2015	**41704**	**38381**
2016	**41906**	**44802**
2017	**43717**	**0**
2018	**0**	**0**
2019	**0**	**0**

```
76.
77. * exit_agri2 was defined in the year the person was last seen in agri but actually,
  > this should
78. * be 1 in the year after their last year; thus we want to move exit_agri2 one year l
  > ater
79.     sort fid taxyear

80.         gen exit_agri_new=.
  (87,209 missing values generated)

81.         replace exit_agri_new= L.exit_agri2 if fid==L.fid
  (37,799 real changes made)

82.
83.         table taxyear, cont(sum entry_agri sum exit_agri_new)
```

The year of assessment.	sum(entry_~l)	sum(exit_a~w)
2001	**0**	**0**
2002	**0**	**0**
2003	**0**	**0**
2004	**0**	**0**
2005	**0**	**0**
2006	**0**	**0**
2007	**0**	**0**
2008	**0**	**0**
2009	**0**	**0**
2010	**0**	**0**
2011	**0**	**0**
2012	**50392**	**38063**
2013	**50069**	**40302**
2014	**38808**	**42728**
2015	**41704**	**36123**
2016	**41906**	**38381**

2017	43717	44802
2018	0	0
2019	0	0

```
84.
85.         gen post=0 if taxyear<2014
  (49,790 missing values generated)

86.         replace post=1 if taxyear>2013
  (49,790 real changes made)

87.
88. ********************************************************************************
89. *                                                                        Stats on zer
  > os                                                            *
90. ********************************************************************************
91. tab taxyear
```

The year of assessment.	Freq.	Percent	Cum.
2001	9	0.01	0.01
2002	9	0.01	0.02
2003	9	0.01	0.03
2004	9	0.01	0.04
2005	9	0.01	0.05
2006	9	0.01	0.06
2007	9	0.01	0.07
2008	9	0.01	0.08
2009	9	0.01	0.09
2010	9	0.01	0.10
2011	12,443	14.27	14.37
2012	12,443	14.27	28.64
2013	12,443	14.27	42.91
2014	12,443	14.27	57.18
2015	12,443	14.27	71.44
2016	12,443	14.27	85.71
2017	12,443	14.27	99.98
2018	9	0.01	99.99
2019	9	0.01	100.00
Total	87,209	100.00	

```
92. tab taxyear if mean_firm_wage!=.
```

The year of assessment.	Freq.	Percent	Cum.
2011	5,547	12.36	12.36
2012	5,919	13.19	25.54
2013	6,189	13.79	39.33
2014	6,511	14.50	53.84
2015	6,717	14.96	68.80
2016	6,916	15.41	84.21
2017	7,089	15.79	100.00
Total	44,888	100.00	

```
93. tab taxyear if entry_agri==0 // 20% in 2012, 26% in 2017
```

The year of assessment.	Freq.	Percent	Cum.
2012	**1,896**	**13.04**	**13.04**
2013	**2,081**	**14.31**	**27.34**
2014	**2,429**	**16.70**	**44.05**
2015	**2,555**	**17.57**	**61.61**
2016	**2,787**	**19.16**	**80.78**
2017	**2,796**	**19.22**	**100.00**
Total	**14,544**	**100.00**	

```
94.
95. tab taxyear if exit_agri_new==0 // 21% in 2012, 23% in 2017
```

The year of assessment.	Freq.	Percent	Cum.
2012	**1,727**	**13.64**	**13.64**
2013	**1,882**	**14.87**	**28.51**
2014	**1,983**	**15.67**	**44.18**
2015	**2,234**	**17.65**	**61.83**
2016	**2,380**	**18.80**	**80.64**
2017	**2,451**	**19.36**	**100.00**
Total	**12,657**	**100.00**	

```
96.
97.
98. ********************************************************************************
99. *                                                                    Regression analysis
  >                                                                                 *
100 ********************************************************************************
101 * Negative ninomial
102         * using proportion affected (prop_affected_all) as the treatment variable
103         * using offset variable (firm size: either in 2013 or dynamically)
104
105 /*
  > Run for CIT and non-CIT samples:
  > - survivors (present in all years 2011-2017)
  > - unbalanced (present for less than 7 years)
  > */
106
107
108 **# Reg analysis: CIT Survivors
109
110 ********************************************************************************
111 *               Total employment - using LAGGED dynamic firm size as an offset varia
  > ble *
112 ********************************************************************************
113         cap mkdir "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum w
  > age\datasets for Marlies\Analysis using Marlies code and Michael's samples\Non Seaso
  > nal\CIT Survivors"

114         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
  > asets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT
  >  Survivors"
  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
  > ies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT Survivors
```

```
115         preserve

116         keep if merge_CIT==3 & survivor==1 // CIT survivors
  (79,655 observations deleted)

117
118 * nbreg unweighted
119
120         estimates clear

121         nbreg count_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -46429.04
  Iteration 1:   log pseudolikelihood = -45417.365
  Iteration 2:   log pseudolikelihood = -45415.496
  Iteration 3:   log pseudolikelihood = -45415.496

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -22345.603
  Iteration 1:   log pseudolikelihood = -21893.633
  Iteration 2:   log pseudolikelihood = -21477.735
  Iteration 3:   log pseudolikelihood = -21437.392
  Iteration 4:   log pseudolikelihood = -21437.371
  Iteration 5:   log pseudolikelihood = -21437.371

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -21267.642
  Iteration 1:   log pseudolikelihood = -21006.051
  Iteration 2:   log pseudolikelihood = -20981.443
  Iteration 3:   log pseudolikelihood =  -20981.33
  Iteration 4:   log pseudolikelihood =  -20981.33

  Negative binomial regression                    Number of obs     =      5,048
                                                  Wald chi2(25)     =      90.82
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood =  -20981.33               Pseudo R2         =     0.0213

                                       (Std. Err. adjusted for 1,369 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
  _______
               |               Robust
    count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  -------------+----------------------------------------------------------------
  _______
  prop_affected_all |   .4461783   .2613413     1.71   0.088    -.0660412    .
  > 9583979
                    |
             taxyear |
                2012 |  -.1606922   .1353092    -1.19   0.235    -.4258934    .
  > 1045089
                2014 |   1.116549   .4419366     2.53   0.012     .2503696    1
  > .982729
                2015 |   .2056842   .1394896     1.47   0.140    -.0677104    .
  > 4790789
                2016 |   .1802906   .1465601     1.23   0.219    -.1069621    .
  > 4675432
                2017 |   .3038107   .2077487     1.46   0.144    -.1033694    .
  > 7109907
                    |
  taxyear#c.prop_affected_all |
                2012 |   .0041526    .318188     0.01   0.990    -.6194844    .
  > 6277895
                2014 |  -1.676398   .5832772    -2.87   0.004      -2.8196   -.
  > 5331958
```

2015	-.5524129	.2852179	-1.94	0.053	-1.11143	.
> 0066038						
2016	-.5199587	.2975661	-1.75	0.081	-1.103178	.
> 0632601						
2017	-.646248	.3000548	-2.15	0.031	-1.234345	-.
> 0581515						
gender_fill	-.3471435	.0916302	-3.79	0.000	-.5267355	-.
> 1675516						
age_q1	.9535255	.2109285	4.52	0.000	.5401131	1
> .366938						
age_q2	.6235088	.2209476	2.82	0.005	.1904595	1
> .056558						
age_q3	.3134197	.1523832	2.06	0.040	.014754	.
> 6120853						
age_q4	.2125779	.0769861	2.76	0.006	.0616879	.
> 3634678						
age_q5	0	(omitted)				
mode_prov_num						
Free State	-.2951668	.2111595	-1.40	0.162	-.7090318	.
> 1186982						
Gauteng	-.3175896	.2115035	-1.50	0.133	-.7321287	.
> 0969496						
KwaZulu-Natal	-.3531171	.2128334	-1.66	0.097	-.7702629	.
> 0640286						
Limpopo	-.3133815	.2131124	-1.47	0.141	-.7310742	.
> 1043111						
Mpumalanga	-.3172815	.2105006	-1.51	0.132	-.729855	
> .095292						
North West	-.0019166	.261725	-0.01	0.994	-.5148882	
> .511055						
Northern Cape	-.2478183	.2684783	-0.92	0.356	-.774026	.
> 2783895						
Western Cape	-.2296392	.2058229	-1.12	0.265	-.6330447	.
> 1737664						
rainfall	-.0000667	.0003273	-0.20	0.839	-.0007083	.
> 0005749						
_cons	.2611205	.3014125	0.87	0.386	-.3296372	.
> 8518782						
ln(L.firm_size_year_non_~1)	1	(exposure)				
/lnalpha	-1.115748	.2150118			-1.537163	-.
> 6943321						
alpha	.3276703	.070453			.2149902	.
> 4994079						

```
122         estimates store reg8
123         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	758	.7065886	.2976516	0	1

```
124         estout reg* using nb_empl_uw_CIT_Survivor.xls, replace  cells(b(star fmt(3))
  >  se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels v
  > arlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (output written to nb_empl_uw_CIT_Survivor.xls)

125
126
127         * coef plot - full model with LAGGED dynamic offset variable
128         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

129
130         graph export "nb_empl_uw_CIT_Survivor.png", replace as(png)
  file nb_empl_uw_CIT_Survivor.png saved as PNG format

131         graph save "nb_empl_uw_CIT_Survivor.gph", replace
  (file nb_empl_uw_CIT_Survivor.gph saved)

132
133 * nbreg weighted
134
135         nbreg count_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_size
  > _year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -17140607
  Iteration 1:   log pseudolikelihood =  -13335210
  Iteration 2:   log pseudolikelihood =  -13315193
  Iteration 3:   log pseudolikelihood =  -13315187
  Iteration 4:   log pseudolikelihood =  -13315187

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -2389757.9
  Iteration 1:   log pseudolikelihood = -2344285.4
  Iteration 2:   log pseudolikelihood =   -2331540
  Iteration 3:   log pseudolikelihood = -2331479.4
  Iteration 4:   log pseudolikelihood = -2331479.3

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -2331479.3
  Iteration 1:   log pseudolikelihood = -2285743.3
  Iteration 2:   log pseudolikelihood = -2241382.1
  Iteration 3:   log pseudolikelihood = -2240999.6
  Iteration 4:   log pseudolikelihood = -2240998.5
  Iteration 5:   log pseudolikelihood = -2240998.5

  Negative binomial regression                    Number of obs     =      5,048
                                                  Wald chi2(25)     =     104.87
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -2240998.5               Pseudo R2         =     0.0388
```

(Std. Err. adjusted for **1,369** clusters in ta
> xrefno)

count_agri	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	In
prop_affected_all	**1.491505**	**.5206889**	**2.86**	**0.004**	**.4709733**	**2**
> .512036						
taxyear						
2012	**.0869031**	**.3083484**	**0.28**	**0.778**	**-.5174488**	**.**
> 6912549						
2014	**2.896705**	**.5540309**	**5.23**	**0.000**	**1.810825**	**3**
> .982586						
2015	**.8293811**	**.3311647**	**2.50**	**0.012**	**.1803102**	**1**
> .478452						
2016	**.464665**	**.2628398**	**1.77**	**0.077**	**-.0504915**	**.**
> 9798215						
2017	**1.579974**	**.7147141**	**2.21**	**0.027**	**.1791604**	**2**
> .980788						
taxyear#c.prop_affected_all						
2012	**-.5904825**	**.6609801**	**-0.89**	**0.372**	**-1.88598**	**.**
> 7050146						
2014	**-4.324785**	**.8128777**	**-5.32**	**0.000**	**-5.917996**	**-2**
> .731574						
2015	**-1.76772**	**.563105**	**-3.14**	**0.002**	**-2.871385**	**-.**
> 6640543						
2016	**-1.432459**	**.6055577**	**-2.37**	**0.018**	**-2.61933**	**-.**
> 2455875						
2017	**-2.554704**	**.8127691**	**-3.14**	**0.002**	**-4.147703**	**-.**
> 9617061						
gender_fill	**-.3324553**	**.2312928**	**-1.44**	**0.151**	**-.7857809**	**.**
> 1208702						
age_q1	**.7995301**	**.8062483**	**0.99**	**0.321**	**-.7806876**	**2**
> .379748						
age_q2	**-.1134209**	**.833826**	**-0.14**	**0.892**	**-1.74769**	**1**
> .520848						
age_q3	**.4708483**	**.7051229**	**0.67**	**0.504**	**-.9111673**	**1**
> .852864						
age_q4	**.0588376**	**.4483688**	**0.13**	**0.896**	**-.819949**	**.**
> 9376243						
age_q5	**0**	(omitted)				
mode_prov_num						
Free State	**-1.13253**	**.5363108**	**-2.11**	**0.035**	**-2.18368**	**-.**
> 0813801						
Gauteng	**-1.061595**	**.5011556**	**-2.12**	**0.034**	**-2.043842**	**-.**
> 0793478						
KwaZulu-Natal	**-.9604214**	**.474636**	**-2.02**	**0.043**	**-1.890691**	**-.**
> 0301519						
Limpopo	**-1.069503**	**.5016884**	**-2.13**	**0.033**	**-2.052794**	**-.**
> 0862119						
Mpumalanga	**-1.070773**	**.4843608**	**-2.21**	**0.027**	**-2.020103**	**-.**
> 1214437						
North West	**-.9705706**	**.6249664**	**-1.55**	**0.120**	**-2.195482**	**.**
> 2543409						
Northern Cape	**-.8984782**	**.7122609**	**-1.26**	**0.207**	**-2.294484**	**.**
> 4975276						
Western Cape	**-.7185351**	**.4849098**	**-1.48**	**0.138**	**-1.668941**	**.**
> 2318707						
rainfall	**-.0006071**	**.0009221**	**-0.66**	**0.510**	**-.0024145**	**.**
> 0012002						
_cons	**.9784369**	**.8954192**	**1.09**	**0.275**	**-.7765525**	**2**
> .733426						
ln(L.firm_size_year_non_~l)	**1**	(exposure)				

```
------------------------------------------------------------------------------
      /lnalpha |  -.4922411   .2179192                      -.9193548   -.
> 0651274
-------------------------------------------------------------------------------
      alpha |    .611255   .1332042                      .3987762    .
> 9369481
------------------------------------------------------------------------------

136         estimates store reg8

137 summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        758    .7065886    .2976516          0          1

138         estout reg* using nb_empl_w_CIT_Survivor.xls, replace  cells(b(star fmt(3))
> se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels va
> rlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(output written to nb_empl_w_CIT_Survivor.xls)

139
140
141 * coef plot - full model with LAGGED dynamic offset variable
142         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
> nt)*/ ///
>         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
> ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
> olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
> icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

143
144         graph export "nb_empl_w_CIT_Survivor.png", replace as(png)
  file nb_empl_w_CIT_Survivor.png saved as PNG format

145         graph save "nb_empl_w_CIT_Survivor.gph", replace
  (file nb_empl_w_CIT_Survivor.gph saved)

146
147 ********************************************************************************
148 *                                                                      Entry
>                                                                     *
149 ********************************************************************************
150 *nbreg unweighted
151         estimates clear

152         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
> .mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -29686.125
  Iteration 1:   log pseudolikelihood = -29323.967
  Iteration 2:   log pseudolikelihood =  -29323.76
  Iteration 3:   log pseudolikelihood =  -29323.76

  Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -14917.184
Iteration 1:   log pseudolikelihood = -14914.794
Iteration 2:   log pseudolikelihood = -14914.792

Fitting full model:

Iteration 0:   log pseudolikelihood = -14690.421
Iteration 1:   log pseudolikelihood = -14571.725
Iteration 2:   log pseudolikelihood = -14535.646
Iteration 3:   log pseudolikelihood = -14535.623
Iteration 4:   log pseudolikelihood = -14535.623

Negative binomial regression                    Number of obs     =      6,468
                                                Wald chi2(25)     =     600.20
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -14535.623               Pseudo R2         =     0.0254

                                              (Std. Err. adjusted for 1,576 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
        prop_affected_all |   .4285211    .146812     2.92   0.004     .1407748    .
> 7162675
                          |
                  taxyear |
                     2012 |   .2750079   .1674718     1.64   0.101    -.0532309    .
> 6032466
                     2014 |  -.0619715   .1642023    -0.38   0.706    -.3838022    .
> 2598591
                     2015 |  -.1355672   .1462388    -0.93   0.354     -.42219    .
> 1510557
                     2016 |   .1603868   .1535094     1.04   0.296     -.140486    .
> 4612597
                     2017 |   .0007224   .1504919     0.00   0.996    -.2942363    .
> 2956811
                          |
taxyear#c.prop_affected_all |
                     2012 |   .0428133   .2120641     0.20   0.840    -.3728246    .
> 4584513
                     2014 |  -.3363629   .2039036    -1.65   0.099    -.7360067    .
> 0632809
                     2015 |  -.1893688   .1869349    -1.01   0.311    -.5557545    .
> 1770169
                     2016 |  -.5858285   .1954404    -3.00   0.003    -.9688847   -.
> 2027723
                     2017 |  -.3894486   .1943075    -2.00   0.045    -.7702842   -
> .008613
                          |
                gender_fill |  -.0537887   .0869572    -0.62   0.536    -.2242217    .
> 1166442
                     age_q1 |   2.769384   .1991189    13.91   0.000     2.379119
> 3.15965
                     age_q2 |   1.455451   .1763414     8.25   0.000     1.109828    1
> .801073
                     age_q3 |    1.08899     .17728     6.14   0.000     .7415272    1
> .436452
                     age_q4 |   .6112577   .1711086     3.57   0.000      .275891    .
> 9466243
                     age_q5 |          0  (omitted)
                          |
             mode_prov_num |
               Free State |  -.158956   .0887105    -1.79   0.073    -.3328255    .
> 0149135
                  Gauteng |  -.1039749    .089609    -1.16   0.246    -.2796053    .
> 0716555
            KwaZulu-Natal |  -.1927148   .0854672    -2.25   0.024    -.3602275   -.
> 0252021
```

```
                    Limpopo |  -.0822557   .1043275    -0.79   0.430    -.2867339    .
> 1222224
                  Mpumalanga |  -.1382668   .0875106    -1.58   0.114    -.3097845    .
> 0332508
                  North West |   .1310841   .1026078     1.28   0.201    -.0700235    .
> 3321916
              Northern Cape |  -.0033025   .1132592    -0.03   0.977    -.2252864    .
> 2186815
               Western Cape |  -.3431492   .0796678    -4.31   0.000    -.4992952   -.
> 1870033
                            |
                  rainfall |    .000039     .00015     0.26   0.795     -.000255    .
> 0003329
                     _cons |  -2.728546   .2050247   -13.31   0.000    -3.130387   -2
> .326705
ln(firm_size_year_non_se~l) |          1  (exposure)
----------------------------+-----------------------------------------------------
  _______
                  /lnalpha |  -.1852491    .037693                     -.2591261   -.
> 1113722
----------------------------+-----------------------------------------------------
  _______
                     alpha |   .8308973    .031319                      .7717257    .
> 8946057
----------------------------+-----------------------------------------------------
  _______
```

```
153                 estimates store reg6

154         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	1,075	.7025391	.3096231	0	1

```
155         estout reg* using "nb_entr_uw_CIT_Survivor.xls", replace  cells(b(star fmt(3
  > )) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels
  >  varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (output written to nb_entr_uw_CIT_Survivor.xls)

156
157 * coef plot - full model with dynamic offset variable
158         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

159
160         graph export "nb_entr_uw_CIT_Survivor.png", replace
  file nb_entr_uw_CIT_Survivor.png saved as PNG format
```

```
161         graph save "nb_entr_uw_CIT_Survivor.gph", replace
  (file nb_entr_uw_CIT_Survivor.gph saved)

162
163
164 *nbreg weighted
165         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear  gender_fill  age_q*
  > i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(firm_size_y
  > ear)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -11827457
  Iteration 1:   log pseudolikelihood =   -6439156
  Iteration 2:   log pseudolikelihood = -6353160.4
  Iteration 3:   log pseudolikelihood = -6352935.9
  Iteration 4:   log pseudolikelihood = -6352935.9

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -1787817.1
  Iteration 1:   log pseudolikelihood = -1777820.5
  Iteration 2:   log pseudolikelihood = -1777376.4
  Iteration 3:   log pseudolikelihood = -1777375.9
  Iteration 4:   log pseudolikelihood = -1777375.9

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -1756922.4
  Iteration 1:   log pseudolikelihood = -1729769.4
  Iteration 2:   log pseudolikelihood = -1728970.1
  Iteration 3:   log pseudolikelihood = -1728968.5
  Iteration 4:   log pseudolikelihood = -1728968.5

  Negative binomial regression                    Number of obs     =      6,468
                                                  Wald chi2(25)     =     334.47
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -1728968.5               Pseudo R2         =     0.0272

                                        (Std. Err. adjusted for 1,576 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
    _______
                 |               Robust
    entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  -------------------------------------------------------------------------------
    _______
          prop_affected_all |   .3929384   .2767957     1.42   0.156    -.1495713    .
  > 9354481
                            |
                   taxyear |
                      2012 |   .0107591   .1829628     0.06   0.953    -.3478414    .
  > 3693596
                      2014 |  -.0815736   .2499458    -0.33   0.744    -.5714584    .
  > 4083111
                      2015 |   .1046256   .1619018     0.65   0.518     -.212696    .
  > 4219473
                      2016 |   .3276489   .2231402     1.47   0.142    -.1096978    .
  > 7649955
                      2017 |   .0763593   .3645059     0.21   0.834    -.6380592    .
  > 7907779
                            |
  taxyear#c.prop_affected_all |
                      2012 |   .2268171   .2284248     0.99   0.321    -.2208872    .
  > 6745214
                      2014 |  -.2783733   .3164607    -0.88   0.379    -.8986248    .
  > 3418783
                      2015 |  -.3710868   .2107922    -1.76   0.078    -.7842319    .
  > 0420584
                      2016 |   -.640389   .3116552    -2.05   0.040    -1.251222   -.
```

2017	-.4824375	.4506842	-1.07	0.284	-1.365762	.
gender_fill	-.4663175	.2215043	-2.11	0.035	-.900458	-
age_q1	5.506611	.6145251	8.96	0.000	4.302164	6
age_q2	.5351934	.5031451	1.06	0.287	-.4509528	
age_q3	.4362124	.4897254	0.89	0.373	-.5236317	1
age_q4	-.1103766	.4753037	-0.23	0.816	-1.041955	.
age_q5	0	(omitted)				
mode_prov_num Free State	-.1621114	.1456839	-1.11	0.266	-.4476465	.
Gauteng	.0004693	.1479361	0.00	0.997	-.28948	.
KwaZulu-Natal	-.1701165	.1220371	-1.39	0.163	-.4093048	.
Limpopo	.135502	.1518616	0.89	0.372	-.1621412	.
Mpumalanga	-.2979782	.121908	-2.44	0.015	-.5369136	-.
North West	-.1536249	.198917	-0.77	0.440	-.543495	.
Northern Cape	.0253754	.1699581	0.15	0.881	-.3077364	.
Western Cape	-.5212453	.1592749	-3.27	0.001	-.8334184	-.
rainfall	.0003351	.0002367	1.42	0.157	-.0001288	.
_cons	-2.47478	.4160474	-5.95	0.000	-3.290218	-1
ln(firm_size_year_non_se~l)	1	(exposure)				
/lnalpha	-.5440093	.0808426			-.7024579	-.
alpha	.5804165	.0469224			.4953662	.

```
166                estimates store reg6

167         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	1,075	.7025391	.3096231	0	1

```
168         estout reg* using "nb_entr_w_CIT_Survivor.xls", replace  cells(b(star fmt(3)
  > ) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels
  > varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (output written to nb_entr_w_CIT_Survivor.xls)
```

```
169
170 * coef plot - full model with dynamic offset variable
171         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

172
173         graph export "nb_entr_w_CIT_Survivor.png", replace
  file nb_entr_w_CIT_Survivor.png saved as PNG format

174         graph save "nb_entr_w_CIT_Survivor.gph", replace
  (file nb_entr_w_CIT_Survivor.gph saved)

175
176
177
178 ********************************************************************************
179 *                                                                          Exit
  >                                                                        *
180 ********************************************************************************
181
182 *nbreg unweighted
183         estimates clear

184         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear gender_fill age_q*
  >  i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -18743.07
  Iteration 1:   log pseudolikelihood =  -18623.86
  Iteration 2:   log pseudolikelihood = -18623.558
  Iteration 3:   log pseudolikelihood = -18623.558

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -11392.572
  Iteration 1:   log pseudolikelihood = -11157.654
  Iteration 2:   log pseudolikelihood = -11134.179
  Iteration 3:   log pseudolikelihood = -11134.037
  Iteration 4:   log pseudolikelihood = -11134.037

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -11132.324
  Iteration 1:   log pseudolikelihood = -11010.271
  Iteration 2:   log pseudolikelihood = -10999.929
  Iteration 3:   log pseudolikelihood = -10999.894
  Iteration 4:   log pseudolikelihood = -10999.894

  Negative binomial regression                    Number of obs     =      5,048
                                                  Wald chi2(25)     =     164.99
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -10999.894               Pseudo R2         =     0.0120
```

(Std. Err. adjusted for **1,369** clusters in ta
> xrefno)

exit_agri_new	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. In
> terval]					
prop_affected_all	.3205841	.1316822	2.43	0.015	.0624917 .
> 5786765					
taxyear					
2012	.4038459	.155097	2.60	0.009	.0998613 .
> 7078305					
2014	-.1266933	.1162509	-1.09	0.276	-.3545409 .
> 1011543					
2015	-.11433	.1212788	-0.94	0.346	-.3520321 .
> 1233721					
2016	-.0537175	.1416594	-0.38	0.705	-.3313649 .
> 2239299					
2017	-.0091298	.1233597	-0.07	0.941	-.2509104 .
> 2326509					
taxyear#c.prop_affected_all					
2012	-.3808033	.2071513	-1.84	0.066	-.7868123 .
> 0252058					
2014	.190963	.1601274	1.19	0.233	-.1228809 .
> 5048069					
2015	-.0683213	.1692528	-0.40	0.686	-.4000506
> .263408					
2016	-.0833039	.1848975	-0.45	0.652	-.4456964 .
> 2790886					
2017	-.1397165	.1721265	-0.81	0.417	-.4770783 .
> 1976452					
gender_fill	-.04178	.0846873	-0.49	0.622	-.207764
> .124204					
age_q1	1.58685	.2222015	7.14	0.000	1.151343 2
> .022357					
age_q2	.6414126	.1895729	3.38	0.001	.2698565 1
> .012969					
age_q3	.5898973	.215936	2.73	0.006	.1666706 1
> .013124					
age_q4	.1897657	.2163862	0.88	0.380	-.2343434 .
> 6138749					
age_q5	0	(omitted)			
mode_prov_num					
Free State	-.0472354	.0953452	-0.50	0.620	-.2341086 .
> 1396377					
Gauteng	.0389396	.0866382	0.45	0.653	-.1308682 .
> 2087474					
KwaZulu-Natal	.0525868	.0781006	0.67	0.501	-.1004876 .
> 2056612					
Limpopo	.0542676	.1001582	0.54	0.588	-.1420388
> .250574					
Mpumalanga	.0036365	.0835114	0.04	0.965	-.1600427 .
> 1673158					
North West	.0527042	.1090673	0.48	0.629	-.1610637 .
> 2664721					
Northern Cape	.0131207	.1103761	0.12	0.905	-.2032125 .
> 2294538					
Western Cape	-.1253645	.0806022	-1.56	0.120	-.2833419 .
> 0326129					
rainfall	-.0002238	.0001319	-1.70	0.090	-.0004823 .
> 0000347					
_cons	-2.417187	.1908041	-12.67	0.000	-2.791156 -2
> .043218					
ln(L.firm_size_year_non_~l)	1	(exposure)			

```
------------------------------------------------------------------------------
             /lnalpha |  -.8200518    .051218                      -.9204373   -.
> 7196663
-------------+----------------------------------------------------------------
             alpha |   .4404089   .0225569                       .3983448    .
> 4869147
------------------------------------------------------------------------------

185             estimates store reg6

186         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        758    .7065886    .2976516          0          1

187         estout reg* using "nb_exit_uw_CIT_Survivor.xls", replace  cells(b(star fmt(3
> )) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels
>  varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_exit_uw_CIT_Survivor.xls not found)
(output written to nb_exit_uw_CIT_Survivor.xls)

188
189 * coef plot - full model with dynamic offset variable
190         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) ///
>         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
> ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
> ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
> abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
>  noticks)

191
192         graph export "nb_exit_uw_CIT_Survivor.png", replace
(file nb_exit_uw_CIT_Survivor.png not found)
file nb_exit_uw_CIT_Survivor.png saved as PNG format

193         graph save "nb_exit_uw_CIT_Survivor.gph", replace
(file nb_exit_uw_CIT_Survivor.gph not found)
(file nb_exit_uw_CIT_Survivor.gph saved)

194
195
196 *nbreg weighted
197         estimates clear

198         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear  gender_fill age_q
> * i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_si
> ze_year)
note: age_q5 omitted because of collinearity.

Fitting Poisson model:

Iteration 0:   log pseudolikelihood = -3857895.2
Iteration 1:   log pseudolikelihood = -3499768.5
Iteration 2:   log pseudolikelihood =   -3497845
Iteration 3:   log pseudolikelihood = -3497844.6
Iteration 4:   log pseudolikelihood = -3497844.6

Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -1422285.6
Iteration 1:   log pseudolikelihood = -1377396.2
Iteration 2:   log pseudolikelihood = -1368332.7
Iteration 3:   log pseudolikelihood = -1368313.3
Iteration 4:   log pseudolikelihood = -1368313.3

Fitting full model:

Iteration 0:   log pseudolikelihood = -1368313.3
Iteration 1:   log pseudolikelihood = -1353574.4
Iteration 2:   log pseudolikelihood = -1338732.4
Iteration 3:   log pseudolikelihood = -1338582.6
Iteration 4:   log pseudolikelihood = -1338582.5

Negative binomial regression                    Number of obs     =      5,048
                                                Wald chi2(25)     =     225.76
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -1338582.5               Pseudo R2         =     0.0217

                                    (Std. Err. adjusted for 1,369 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
exit_agri_new|      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
prop_affected_all|   .0606358   .3474378     0.17   0.861    -.6203298    .
> 7416014
             |
             taxyear
        2012 |  -.1239672    .213544    -0.58   0.562    -.5425058    .
> 2945714
        2014 |  -.3279485    .158325    -2.07   0.038    -.6382598   -.
> 0176373
        2015 |  -.2421928   .1518197    -1.60   0.111    -.5397539    .
> 0553683
        2016 |  -.3733488   .1696206    -2.20   0.028    -.7057991   -.
> 0408984
        2017 |   .0074598   .1772514     0.04   0.966    -.3399466    .
> 3548663
             |
taxyear#c.prop_affected_all
        2012 |   .1786983    .266131     0.67   0.502    -.3429089    .
> 7003055
        2014 |   .4428187   .1935401     2.29   0.022     .0634871    .
> 8221503
        2015 |   .0208819   .1784505     0.12   0.907    -.3288746    .
> 3706383
        2016 |   .1540709    .192314     0.80   0.423    -.2228576    .
> 5309994
        2017 |  -.3012443   .2422183    -1.24   0.214    -.7759835    .
> 1734948
             |
  gender_fill|  -.4803853   .1825998    -2.63   0.009    -.8382743   -.
> 1224962
        age_q1|   2.545047   .5605583     4.54   0.000     1.446373    3
> .643721
        age_q2|   .9364827   .4381328     2.14   0.033     .0777583    1
> .795207
        age_q3|   .7641717   .4545529     1.68   0.093    -.1267356    1
> .655079
        age_q4|   .1891401   .3898053     0.49   0.628    -.5748643    .
> 9531444
        age_q5|          0  (omitted)
             |
 mode_prov_num
  Free State |   .0420967   .1593573     0.26   0.792    -.2702379    .
> 3544313
     Gauteng |  -.0904199   .1545805    -0.58   0.559    -.3933921    .
> 2125524
```

```
              KwaZulu-Natal |   .0600834   .1023421     0.59   0.557    -.1405035    .
> 2606703
                    Limpopo |   .1069147     .13549     0.79   0.430    -.1586408    .
> 3724703
                  Mpumalanga |   .0196636   .1094365     0.18   0.857    -.1948281    .
> 2341552
                  North West |  -.4329323   .1717538    -2.52   0.012    -.7695635   -.
> 0963011
              Northern Cape |  -.1251475   .1640961    -0.76   0.446    -.4467699    .
> 1964749
               Western Cape |  -.3012836   .1377885    -2.19   0.029    -.5713441   -
> .031223
                            |
                   rainfall |  -.0002543   .0001935    -1.31   0.189    -.0006336    .
> 0001251
                      _cons |  -2.007003    .463985    -4.33   0.000    -2.916397   -1
> .097609
ln(L.firm_size_year_non_~l) |          1  (exposure)
-----------------------------+-------------------------------------------------------
              /lnalpha |  -1.203631   .0992124                     -1.398084   -1
> .009178
-----------------------------+-------------------------------------------------------
                 alpha |   .3001025   .0297739                      .24707    .
> 3645183
------------------------------------------------------------------------------
```

```
199                 estimates store reg6

200         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        758    .7065886    .2976516          0          1

201         estout reg* using "nb_exit_w_CIT_Survivor.xls", replace  cells(b(star fmt(3)
  > ) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevels
  > varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_exit_w_CIT_Survivor.xls not found)
  (output written to nb_exit_w_CIT_Survivor.xls)

202
203 * coef plot - full model with dynamic offset variable
204         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)
```

```
205
206         graph export "nb_exit_w_CIT_Survivor.png", replace
  (file nb_exit_w_CIT_Survivor.png not found)
  file nb_exit_w_CIT_Survivor.png saved as PNG format

207         graph save "nb_exit_w_CIT_Survivor.gph", replace
  (file nb_exit_w_CIT_Survivor.gph not found)
  (file nb_exit_w_CIT_Survivor.gph saved)

208
209         restore

210
211 **# Reg analysis: Non CIT Survivors
212
213 ********************************************************************************
214 *                                                      Total employment
  >                                                                    *
215 ********************************************************************************
216         cap mkdir "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum w
  > age\datasets for Marlies\Analysis using Marlies code and Michael's samples\Non Seaso
  > nal\Non CIT Survivors"

217         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
  > asets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\Non
  >  CIT Survivors"
  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
  > ies\Analysis using Marlies code and Michael's samples\Non Seasonal\Non CIT Survivors

218
219         preserve

220         keep if merge_CIT==1 & survivor==1
  (69,104 observations deleted)

221
222 * nbreg unweighted
223
224         estimates clear

225         nbreg count_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -80868.247
  Iteration 1:   log pseudolikelihood = -80606.416
  Iteration 2:   log pseudolikelihood = -80605.757
  Iteration 3:   log pseudolikelihood = -80605.757

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -52708.304
  Iteration 1:   log pseudolikelihood = -51021.547
  Iteration 2:   log pseudolikelihood = -49918.814
  Iteration 3:   log pseudolikelihood = -49772.353
  Iteration 4:   log pseudolikelihood = -49772.009
  Iteration 5:   log pseudolikelihood = -49772.009

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -49288.094
  Iteration 1:   log pseudolikelihood = -49077.939
  Iteration 2:   log pseudolikelihood = -49073.151
  Iteration 3:   log pseudolikelihood =  -49073.15

  Negative binomial regression                    Number of obs     =     13,265
                                                  Wald chi2(25)     =     197.64
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood =  -49073.15               Pseudo R2         =     0.0140
```

(Std. Err. adjusted for **2,709** clusters in ta
> xrefno)

| count_agri | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| prop_affected_all | .0563759 | .0791875 | 0.71 | 0.477 | -.0988287 | .
> 2115805 |
| taxyear | | | | | | |
| 2012 | .0016585 | .0806998 | 0.02 | 0.984 | -.1565103 | .
> 1598272 |
| 2014 | .4597801 | .2521728 | 1.82 | 0.068 | -.0344696 | .
> 9540297 |
| 2015 | .4860737 | .2886039 | 1.68 | 0.092 | -.0795795 | 1
> .051727 |
| 2016 | .1264496 | .0975277 | 1.30 | 0.195 | -.0647012 | .
> 3176005 |
| 2017 | -.0123277 | .0793788 | -0.16 | 0.877 | -.1679072 | .
> 1432518 |
| taxyear#c.prop_affected_all | | | | | | |
| 2012 | .0038664 | .1042884 | 0.04 | 0.970 | -.2005351 | .
> 2082679 |
| 2014 | -.6557518 | .2977019 | -2.20 | 0.028 | -1.239237 | -.
> 0722667 |
| 2015 | -.7020663 | .3433752 | -2.04 | 0.041 | -1.375069 | -.
> 0290632 |
| 2016 | -.3048647 | .1091698 | -2.79 | 0.005 | -.5188336 | -.
> 0908957 |
| 2017 | .1115504 | .146892 | 0.76 | 0.448 | -.1763526 | .
> 3994535 |
| gender_fill | -.3089698 | .0969606 | -3.19 | 0.001 | -.4990092 | -.
> 1189305 |
| age_q1 | 1.101149 | .1421186 | 7.75 | 0.000 | .8226018 | 1
> .379697 |
| age_q2 | .6929253 | .0959411 | 7.22 | 0.000 | .5048842 | .
> 8809664 |
| age_q3 | .334593 | .0687223 | 4.87 | 0.000 | .1998998 | .
> 4692863 |
| age_q4 | .1467579 | .0558456 | 2.63 | 0.009 | .0373025 | .
> 2562133 |
| age_q5 | 0 | (omitted) | | | | |
| mode_prov_num | | | | | | |
| Free State | .0390958 | .0849514 | 0.46 | 0.645 | -.127406 | .
> 2055975 |
| Gauteng | -.1287438 | .0596365 | -2.16 | 0.031 | -.2456293 | -.
> 0118584 |
| KwaZulu-Natal | .0019773 | .0645292 | 0.03 | 0.976 | -.1244978 | .
> 1284523 |
| Limpopo | .0885316 | .0897535 | 0.99 | 0.324 | -.0873821 | .
> 2644452 |
| Mpumalanga | .0227543 | .0689246 | 0.33 | 0.741 | -.1123355 | .
> 1578441 |
| North West | -.0852395 | .0601647 | -1.42 | 0.157 | -.2031601 | .
> 0326811 |
| Northern Cape | -.1216957 | .0987707 | -1.23 | 0.218 | -.3152828 | .
> 0718914 |
| Western Cape | -.1225567 | .0574925 | -2.13 | 0.033 | -.23524 | -.
> 0098734 |
| rainfall | -.0002575 | .000171 | -1.51 | 0.132 | -.0005925 | .
> 0000776 |
| _cons | .2667676 | .1817602 | 1.47 | 0.142 | -.0894758 |
> .623011 |
| ln(L.firm_size_year_non_~l) | 1 | (exposure) | | | | |

```
------------------------------------------------------------------------------
             /lnalpha |  -1.285734   .1612927                     -1.601862   -.
> 9696061
-------------------------+----------------------------------------------------
             alpha |   .2764476    .044589                       .201521    .
> 3792324
------------------------------------------------------------------------------
```

```
226         estimates store reg8

227         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**2,287**	**.7148255**	**.321928**	**0**	**1**

```
228         estout reg* using nb_empl_uw_non_NON_CIT_Survivor.xls, replace  cells(b(star
  >  fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobase
  > levels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_empl_uw_non_NON_CIT_Survivor.xls not found)
  (output written to nb_empl_uw_non_NON_CIT_Survivor.xls)

229
230
231         * coef plot - full model with LAGGED dynamic offset variable
232         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

233
234         graph export "nb_empl_uw_NON_CIT_Survivor.png", replace as(png)
  (file nb_empl_uw_NON_CIT_Survivor.png not found)
  file nb_empl_uw_NON_CIT_Survivor.png saved as PNG format

235         graph save "nb_empl_uw_NON_CIT_Survivor.gph", replace
  (file nb_empl_uw_NON_CIT_Survivor.gph not found)
  (file nb_empl_uw_NON_CIT_Survivor.gph saved)

236
237 * nbreg weighted
238
239         estimates clear

240         nbreg count_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_size_
  > year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -1.526e+08
  Iteration 1:   log pseudolikelihood = -1.404e+08
  Iteration 2:   log pseudolikelihood =  -16700766
  Iteration 3:   log pseudolikelihood =  -12940562
  Iteration 4:   log pseudolikelihood =  -12820178
  Iteration 5:   log pseudolikelihood =  -12819774
  Iteration 6:   log pseudolikelihood =  -12819774
```

```
Fitting constant-only model:

Iteration 0:   log pseudolikelihood = -3066743.5
Iteration 1:   log pseudolikelihood =   -2917960
Iteration 2:   log pseudolikelihood = -2895665.4
Iteration 3:   log pseudolikelihood = -2895651.5
Iteration 4:   log pseudolikelihood = -2895651.5

Fitting full model:

Iteration 0:   log pseudolikelihood = -2866575.3
Iteration 1:   log pseudolikelihood = -2838152.1
Iteration 2:   log pseudolikelihood = -2757651.6
Iteration 3:   log pseudolikelihood = -2756459.2
Iteration 4:   log pseudolikelihood = -2756456.7
Iteration 5:   log pseudolikelihood = -2756456.7

Negative binomial regression                    Number of obs     =     13,265
                                                Wald chi2(25)     =     127.44
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -2756456.7               Pseudo R2         =     0.0481

                                    (Std. Err. adjusted for 2,709 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
  count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
prop_affected_all |   .0143827   .2992778     0.05   0.962     -.572191    .
> 6009564
             |
             taxyear |
        2012 |  -.1145887   .2539741    -0.45   0.652    -.6123688    .
> 3831915
        2014 |   1.670445   .6198512     2.69   0.007     .4555589    2
> .885331
        2015 |   2.190254   .6355958     3.45   0.001     .9445091    3
> .435999
        2016 |   .3721399   .3702828     1.01   0.315    -.3536011    1
> .097881
        2017 |   -.427982   .3093892    -1.38   0.167    -1.034374    .
> 1784096
             |
taxyear#c.prop_affected_all |
        2012 |   .0530481   .3383862     0.16   0.875    -.6101766    .
> 7162728
        2014 |  -2.073046   .7372195    -2.81   0.005     -3.51797   -.
> 6281222
        2015 |  -2.751001   .7242168    -3.80   0.000     -4.17044   -1
> .331563
        2016 |  -.7535078   .4368507    -1.72   0.085     -1.60972    .
> 1027039
        2017 |    1.83753   .8110732     2.27   0.023     .2478558    3
> .427204
             |
  gender_fill |  -.667912   .2648299    -2.52   0.012    -1.186969   -.
> 1488548
        age_q1 |   .930815   .5933498     1.57   0.117    -.2321292    2
> .093759
        age_q2 |   1.016553   .3822077     2.66   0.008     .2674401    1
> .765667
        age_q3 |   .6466784   .4046497     1.60   0.110    -.1464205    1
> .439777
        age_q4 |    .54432   .3097108     1.76   0.079     -.062702    1
> .151342
        age_q5 |          0  (omitted)
             |
    mode_prov_num |
  Free State |   .0410949   .2973577     0.14   0.890    -.5417154    .
```

```
> 6239053
                    Gauteng |  -.6996719   .2665086    -2.63   0.009    -1.222019   -.
> 1773246
                KwaZulu-Natal |  -.1040394    .251901    -0.41   0.680    -.5977564    .
> 3896776
                    Limpopo |  -.2717248   .2985475    -0.91   0.363    -.8568672    .
> 3134175
                  Mpumalanga |   -.448869   .2397492    -1.87   0.061    -.9187688    .
> 0210308
                  North West |  -.9340005   .3461227    -2.70   0.007    -1.612389   -.
> 2556125
                Northern Cape |  -.7214192   .3783732    -1.91   0.057    -1.463017    .
> 0201786
                 Western Cape |  -.5202537   .2631291    -1.98   0.048    -1.035977   -.
> 0045302
                              |
                     rainfall |  -.0005983   .0006106    -0.98   0.327    -.0017951    .
> 0005985
                        _cons |   1.018237   .6679789     1.52   0.127    -.2909771    2
> .327452
ln(L.firm_size_year_non_~l) |          1  (exposure)
----------------------------+-----------------------------------------------------------
                    /lnalpha |  -.2330203   .1550268                     -.5368672    .
> 0708266
----------------------------+-----------------------------------------------------------
                       alpha |   .7921375   .1228025                      .5845768    1
> .073395
----------------------------+-----------------------------------------------------------
```

```
241         estimates store reg8

242 summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |      2,287    .7148255     .321928          0          1

243         estout reg* using nb_empl_w_NON_CIT_Survivor.xls, replace  cells(b(star fmt(
  > 3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevel
  > s varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_empl_w_NON_CIT_Survivor.xls not found)
  (output written to nb_empl_w_NON_CIT_Survivor.xls)

244
245
246 * coef plot - full model with LAGGED dynamic offset variable
247         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)
```

```
248
249         graph export "nb_empl_w_NON_CIT_Survivor.png", replace as(png)
  (file nb_empl_w_NON_CIT_Survivor.png not found)
  file nb_empl_w_NON_CIT_Survivor.png saved as PNG format

250         graph save "nb_empl_w_NON_CIT_Survivor.gph", replace
  (file nb_empl_w_NON_CIT_Survivor.gph not found)
  (file nb_empl_w_NON_CIT_Survivor.gph saved)

251
252 ********************************************************************************
253 *                                                                          Entry
  >                                                                        *
254 ********************************************************************************
255 *nbreg unweighted
256         estimates clear

257         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -47656.792
  Iteration 1:   log pseudolikelihood = -46577.478
  Iteration 2:   log pseudolikelihood = -46569.781
  Iteration 3:   log pseudolikelihood = -46569.778

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -29960.442
  Iteration 1:   log pseudolikelihood =  -29902.08
  Iteration 2:   log pseudolikelihood = -29901.795
  Iteration 3:   log pseudolikelihood = -29901.795

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -29244.331
  Iteration 1:   log pseudolikelihood = -28995.245
  Iteration 2:   log pseudolikelihood = -28924.832
  Iteration 3:   log pseudolikelihood = -28924.806
  Iteration 4:   log pseudolikelihood = -28924.806

  Negative binomial regression                    Number of obs     =     14,756
                                                  Wald chi2(25)     =    1585.29
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -28924.806               Pseudo R2         =     0.0327

                                        (Std. Err. adjusted for 3,063 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
    _______
                       |               Robust
    entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  -------------------------------------------------------------------------------
    _______
           prop_affected_all |   .3743971   .0853818     4.38   0.000     .2070519    .
  > 5417423
                             |
                    taxyear |
                       2012 |   .6549583   .0974854     6.72   0.000     .4638905    .
  > 8460262
                       2014 |    .291704   .0942856     3.09   0.002     .1069076    .
  > 4765003
                       2015 |   .2500256   .0961452     2.60   0.009     .0615845    .
  > 4384666
                       2016 |   .1641058   .0926352     1.77   0.076    -.0174559    .
  > 3456676
                       2017 |   .1219679   .0896238     1.36   0.174    -.0536916    .
  > 2976274
                            |
```

```
taxyear#c.prop_affected_all |
                       2012 |  -.1896598   .1212546    -1.56   0.118    -.4273145    .
> 0479949
                       2014 |  -.5554122   .1175579    -4.72   0.000    -.7858215   -.
> 3250029
                       2015 |  -.5457845   .1180941    -4.62   0.000    -.7772447   -.
> 3143242
                       2016 |  -.4890762   .1154942    -4.23   0.000    -.7154406   -.
> 2627118
                       2017 |  -.3656877   .1120458    -3.26   0.001    -.5852934   -.
> 1460819
                            |
                gender_fill |  -.1031806   .0586787    -1.76   0.079    -.2181887    .
> 0118275
                     age_q1 |   2.939284   .1324608    22.19   0.000     2.679666    3
> .198902
                     age_q2 |   1.736238    .098835    17.57   0.000     1.542525    1
> .929951
                     age_q3 |    1.01689   .1019036     9.98   0.000     .8171624    1
> .216617
                     age_q4 |   .5762845   .1027365     5.61   0.000     .3749245    .
> 7776444
                     age_q5 |          0  (omitted)
                            |
              mode_prov_num |
                Free State |   .1877499   .0579571     3.24   0.001     .0741561    .
> 3013438
                   Gauteng |  -.0344424   .0711565    -0.48   0.628    -.1739066    .
> 1050219
              KwaZulu-Natal |  -.0514383   .0493622    -1.04   0.297    -.1481864    .
> 0453098
                   Limpopo |   .2005201   .0727473     2.76   0.006      .057938    .
> 3431022
                 Mpumalanga |   .0944703    .058097     1.63   0.104    -.0193977    .
> 2083383
                 North West |   .1241671   .0800109     1.55   0.121    -.0326513    .
> 2809855
              Northern Cape |   .0959649   .0726632     1.32   0.187    -.0464523    .
> 2383822
               Western Cape |  -.2446599   .0473365    -5.17   0.000    -.3374376   -.
> 1518821
                            |
                   rainfall |  -.0000366   .0000963    -0.38   0.704    -.0002254    .
> 0001522
                      _cons |  -2.899241   .1212093   -23.92   0.000    -3.136806   -2
> .661675
ln(firm_size_year_non_se~l) |          1  (exposure)
----------------------------+-----------------------------------------------------------
                   /lnalpha |  -.1951019   .0265756                     -.2471892   -.
> 1430147
----------------------------+-----------------------------------------------------------
                      alpha |   .8227508   .0218651                      .7809929    .
> 8667413
----------------------------+-----------------------------------------------------------

258                 estimates store reg6
```

```
259         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**2,499**	**.7116263**	**.3234153**	**0**	**1**

```
260         estout reg* using "nb_entr_uw_NON_CIT_Survivor.xls", replace  cells(b(star f
  > mt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobasele
  > vels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_entr_uw_NON_CIT_Survivor.xls not found)
  (output written to nb_entr_uw_NON_CIT_Survivor.xls)

261
262 * coef plot - full model with dynamic offset variable
263         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

264
265         graph export "nb_entr_uw_NON_CIT_Survivor.png", replace
  (file nb_entr_uw_NON_CIT_Survivor.png not found)
  file nb_entr_uw_NON_CIT_Survivor.png saved as PNG format

266         graph save "nb_entr_uw_NON_CIT_Survivor.gph", replace
  (file nb_entr_uw_NON_CIT_Survivor.gph not found)
  (file nb_entr_uw_NON_CIT_Survivor.gph saved)

267
268
269 *nbreg weighted
270         estimates clear

271         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(firm_size_ye
  > ar)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -86231581
  Iteration 1:   log pseudolikelihood =  -60889859
  Iteration 2:   log pseudolikelihood =  -14919178
  Iteration 3:   log pseudolikelihood = -5650411.7
  Iteration 4:   log pseudolikelihood = -4962529.3
  Iteration 5:   log pseudolikelihood = -4954002.2
  Iteration 6:   log pseudolikelihood = -4954000.3
  Iteration 7:   log pseudolikelihood = -4954000.3

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -1999417.9
  Iteration 1:   log pseudolikelihood = -1992665.1
  Iteration 2:   log pseudolikelihood = -1992203.2
  Iteration 3:   log pseudolikelihood = -1992202.4
  Iteration 4:   log pseudolikelihood = -1992202.4

  Fitting full model:
```

```
Iteration 0:   log pseudolikelihood =   -1956270
Iteration 1:   log pseudolikelihood = -1923627.8
Iteration 2:   log pseudolikelihood = -1923175.8
Iteration 3:   log pseudolikelihood = -1923175.3
Iteration 4:   log pseudolikelihood = -1923175.3

Negative binomial regression                    Number of obs     =     14,756
                                                Wald chi2(25)     =     900.38
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -1923175.3               Pseudo R2         =     0.0346

                                               (Std. Err. adjusted for 3,063 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
        prop_affected_all |    .674547   .1358308     4.97   0.000     .4083235    .
> 9407705
                  |
                  taxyear |
                     2012 |   .5413715   .1842504     2.94   0.003     .1802473    .
> 9024956
                     2014 |   .5507299   .1759196     3.13   0.002     .2059337
> .895526
                     2015 |    .608022    .198977     3.06   0.002     .2180342    .
> 9980097
                     2016 |   .4716231   .2440479     1.93   0.053    -.006702     .
> 9499481
                     2017 |   .2724101   .1483092     1.84   0.066    -.0182706    .
> 5630907
                  |
taxyear#c.prop_affected_all |
                     2012 |  -.3359213    .210836    -1.59   0.111    -.7491522    .
> 0773097
                     2014 |  -.8704635   .2042438    -4.26   0.000    -1.270774    -
> .470153
                     2015 |   -.942712   .2274603    -4.14   0.000    -1.388526    -
> .496898
                     2016 |  -.8663277   .2822495    -3.07   0.002    -1.419527    -.
> 3131289
                     2017 |  -.4922243   .1705703    -2.89   0.004    -.8265359    -.
> 1579127
                  |
                gender_fill |  -.4140633   .1208214    -3.43   0.001    -.6508688    -.
> 1772578
                     age_q1 |   4.477311   .3059609    14.63   0.000     3.877638    5
> .076983
                     age_q2 |    1.89418    .245646     7.71   0.000     1.412723    2
> .375638
                     age_q3 |   .9963887   .2463845     4.04   0.000      .513484    1
> .479293
                     age_q4 |   .3685578   .2726241     1.35   0.176    -.1657756    .
> 9028911
                     age_q5 |          0  (omitted)
                  |
               mode_prov_num |
                 Free State |   .4653122   .1058387     4.40   0.000     .2578721    .
> 6727523
                    Gauteng |   .0872469    .133937     0.65   0.515    -.1752647    .
> 3497586
               KwaZulu-Natal |  -.0314538   .0843467    -0.37   0.709    -.1967702    .
> 1338626
                    Limpopo |   .3518421   .1150527     3.06   0.002      .126343    .
> 5773412
                  Mpumalanga |  -.0051063   .1391394    -0.04   0.971    -.2778145    .
> 2676019
                  North West |   .1353024    .098827     1.37   0.171     -.058395    .
> 3289998
```

```
             Northern Cape |   .0008156   .1169997     0.01   0.994    -.2284996    .
> 2301308
              Western Cape |  -.4058245   .0920366    -4.41   0.000    -.5862129    -
> .225436
                           |
                   rainfall |   .0001324   .0001398     0.95   0.344    -.0001416    .
> 0004065
                      _cons |  -3.179087   .2314699   -13.73   0.000     -3.63276   -2
> .725415
ln(firm_size_year_non_se~l) |          1  (exposure)
-----------------------------+------------------------------------------------------------
> -------
                    /lnalpha |  -.4976031    .069399                      -.6336225   -.
> 3615836
-----------------------------+------------------------------------------------------------
> -------
                       alpha |   .6079862   .0421936                       .530666    .
> 6965724
------------------------------------------------------------------------------
> -------

272                 estimates store reg6

273         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |      2,499    .7116263    .3234153          0          1

274         estout reg* using "nb_entr_w_NON_CIT_Survivor.xls", replace  cells(b(star fm
> t(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselev
> els varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_entr_w_NON_CIT_Survivor.xls not found)
(output written to nb_entr_w_NON_CIT_Survivor.xls)

275
276 * coef plot - full model with dynamic offset variable
277         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) ///
>         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
> ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
> ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
> abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
>  noticks)

278
279         graph export "nb_entr_w_NON_CIT_Survivor.png", replace
(file nb_entr_w_NON_CIT_Survivor.png not found)
file nb_entr_w_NON_CIT_Survivor.png saved as PNG format

280         graph save "nb_entr_w_NON_CIT_Survivor.gph", replace
(file nb_entr_w_NON_CIT_Survivor.gph not found)
(file nb_entr_w_NON_CIT_Survivor.gph saved)
```

```
281
282
283
284 ********************************************************************************
285 *                                                                          Exit
  >                                                                        *
286 ********************************************************************************
287
288 *nbreg unweighted
289         estimates clear

290         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear gender_fill age_q*
  >  i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -34392.926
  Iteration 1:   log pseudolikelihood =   -34159.6
  Iteration 2:   log pseudolikelihood = -34159.195
  Iteration 3:   log pseudolikelihood = -34159.195

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -25716.159
  Iteration 1:   log pseudolikelihood = -25340.524
  Iteration 2:   log pseudolikelihood = -25303.201
  Iteration 3:   log pseudolikelihood = -25303.061
  Iteration 4:   log pseudolikelihood = -25303.061

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -25179.102
  Iteration 1:   log pseudolikelihood = -24992.177
  Iteration 2:   log pseudolikelihood = -24975.785
  Iteration 3:   log pseudolikelihood = -24975.743
  Iteration 4:   log pseudolikelihood = -24975.743

  Negative binomial regression                    Number of obs     =     13,265
                                                  Wald chi2(25)     =     376.86
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -24975.743               Pseudo R2         =     0.0129

                                      (Std. Err. adjusted for 2,709 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
    _______
                 |               Robust
          exit_agri_new |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  ---------------------+--------------------------------------------------------
    _______
          prop_affected_all |  -.0079611   .0960898    -0.08   0.934    -.1962936    .
  > 1803714
                            |
                   taxyear |
                      2012  |  -.0529222   .0937994    -0.56   0.573    -.2367657    .
  > 1309214
                      2014  |   -.422758   .0970343    -4.36   0.000    -.6129417   -.
  > 2325743
                      2015  |   -.214594   .1009225    -2.13   0.033    -.4123984   -.
  > 0167896
                      2016  |  -.2835931   .1023325    -2.77   0.006    -.4841612    -
  > .083025
                      2017  |  -.1621653    .098775    -1.64   0.101    -.3557608    .
  > 0314301
                            |
  taxyear#c.prop_affected_all |
                      2012  |   .0696359    .116107     0.60   0.549    -.1579296    .
  > 2972014
                      2014  |   .5702459    .115815     4.92   0.000     .3432527    .
  > 7972391
```

2015	.1788335	.1225468	1.46	0.144	-.0613537	.
> 4190208						
2016	.2920266	.1221481	2.39	0.017	.0526207	.
> 5314325						
2017	.0963797	.120907	0.80	0.425	-.1405936	
> .333353						
gender_fill	-.1475204	.0579444	-2.55	0.011	-.2610894	-.
> 0339515						
age_q1	1.468315	.1416079	10.37	0.000	1.190769	1
> .745862						
age_q2	.9694189	.1146549	8.46	0.000	.7446995	1
> .194138						
age_q3	.5480511	.115163	4.76	0.000	.3223358	.
> 7737664						
age_q4	.446595	.1100766	4.06	0.000	.2308488	.
> 6623411						
age_q5	0	(omitted)				
mode_prov_num Free State	.0847999	.0585482	1.45	0.148	-.0299525	.
> 1995522						
Gauteng	.0956633	.0708861	1.35	0.177	-.0432709	.
> 2345975						
KwaZulu-Natal	-.0507937	.046717	-1.09	0.277	-.1423573	.
> 0407699						
Limpopo	.008999	.0726269	0.12	0.901	-.1333471	
> .151345						
Mpumalanga	-.0031836	.0571842	-0.06	0.956	-.1152625	.
> 1088954						
North West	.1334238	.075021	1.78	0.075	-.0136148	.
> 2804623						
Northern Cape	.1596492	.0716266	2.23	0.026	.0192637	.
> 3000347						
Western Cape	-.2187663	.0481163	-4.55	0.000	-.3130725	
> -.12446						
rainfall	.0000541	.0000894	0.61	0.545	-.0001211	.
> 0002293						
_cons	-2.348468	.1259376	-18.65	0.000	-2.595301	-2
> .101635						
ln(L.firm_size_year_non_~1)	1	(exposure)				
/lnalpha	-.6665277	.0341014			-.7333652	-.
> 5996903						
alpha	.5134885	.0175107			.48029	.
> 5489816						

```
291                 estimates store reg6

292         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	2,287	.7148255	.321928	0	1

```
293         estout reg* using "nb_exit_uw_NON_CIT_Survivor.xls", replace  cells(b(star f
  > mt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobasele
  > vels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_exit_uw_NON_CIT_Survivor.xls not found)
  (output written to nb_exit_uw_NON_CIT_Survivor.xls)

294
295 * coef plot - full model with dynamic offset variable
296         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

297
298         graph export "nb_exit_uw_NON_CIT_Survivor.png", replace
  (file nb_exit_uw_NON_CIT_Survivor.png not found)
  file nb_exit_uw_NON_CIT_Survivor.png saved as PNG format

299         graph save "nb_exit_uw_NON_CIT_Survivor.gph", replace
  (file nb_exit_uw_NON_CIT_Survivor.gph not found)
  (file nb_exit_uw_NON_CIT_Survivor.gph saved)

300
301
302 *nbreg weighted
303         estimates clear

304         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear  gender_fill age_q
  > * i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_si
  > ze_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -76733532
  Iteration 1:   log pseudolikelihood =  -19170554  (backed up)
  Iteration 2:   log pseudolikelihood = -8234460.7
  Iteration 3:   log pseudolikelihood = -3090450.3
  Iteration 4:   log pseudolikelihood = -2595515.9
  Iteration 5:   log pseudolikelihood = -2594723.3
  Iteration 6:   log pseudolikelihood = -2594722.8
  Iteration 7:   log pseudolikelihood = -2594722.8

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -1634731.6
  Iteration 1:   log pseudolikelihood = -1578702.1
  Iteration 2:   log pseudolikelihood = -1573894.5
  Iteration 3:   log pseudolikelihood = -1573831.4
  Iteration 4:   log pseudolikelihood = -1573831.4

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -1547416.3
  Iteration 1:   log pseudolikelihood = -1514020.2
  Iteration 2:   log pseudolikelihood = -1512972.9
  Iteration 3:   log pseudolikelihood = -1512969.7
  Iteration 4:   log pseudolikelihood = -1512969.7
```

Negative binomial regression — Number of obs = **13,265**
Wald chi2(**25**) = **627.91**
Prob > chi2 = **0.0000**
Dispersion = **mean**
Log pseudolikelihood = **-1512969.7**
Pseudo R2 = **0.0387**

(Std. Err. adjusted for **2,709** clusters in ta
> xrefno)

| exit_agri_new | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| prop_affected_all | .1208703 | .1834987 | 0.66 | 0.510 | -.2387805 .
> 4805211 |
| taxyear | | | | | |
| 2012 | -.1957314 | .1625757 | -1.20 | 0.229 | -.5143739 .
> 1229111 |
| 2014 | -.5706342 | .2734013 | -2.09 | 0.037 | -1.106491 -.
> 0347775 |
| 2015 | -.3214365 | .161706 | -1.99 | 0.047 | -.6383745 -.
> 0044985 |
| 2016 | -.2140969 | .170679 | -1.25 | 0.210 | -.5486215 .
> 1204278 |
| 2017 | -.1599855 | .1532022 | -1.04 | 0.296 | -.4602563 .
> 1402853 |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | .2539974 | .1789449 | 1.42 | 0.156 | -.0967282
> .604723 |
| 2014 | .6820847 | .2964331 | 2.30 | 0.021 | .1010864 1
> .263083 |
| 2015 | .2315797 | .1850469 | 1.25 | 0.211 | -.1311056 .
> 5942651 |
| 2016 | .1398272 | .1918145 | 0.73 | 0.466 | -.2361223 .
> 5157767 |
| 2017 | .041222 | .178728 | 0.23 | 0.818 | -.3090783 .
> 3915224 |
| gender_fill | -.3703847 | .0950715 | -3.90 | 0.000 | -.5567214 -
> .184048 |
| age_q1 | 2.928387 | .2671605 | 10.96 | 0.000 | 2.404762 3
> .452012 |
| age_q2 | 1.689423 | .204168 | 8.27 | 0.000 | 1.289262 2
> .089585 |
| age_q3 | 1.142226 | .2237465 | 5.11 | 0.000 | .703691 1
> .580761 |
| age_q4 | .4275994 | .2218392 | 1.93 | 0.054 | -.0071974 .
> 8623962 |
| age_q5 | 0 | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | .2040528 | .0878694 | 2.32 | 0.020 | .031832 .
> 3762736 |
| Gauteng | .4045701 | .1977106 | 2.05 | 0.041 | .0170645 .
> 7920757 |
| KwaZulu-Natal | .1168801 | .075687 | 1.54 | 0.123 | -.0314637 .
> 2652239 |
| Limpopo | .1114573 | .0906316 | 1.23 | 0.219 | -.0661773 .
> 2890918 |
| Mpumalanga | .0944419 | .090421 | 1.04 | 0.296 | -.08278 .
> 2716637 |
| North West | .4015276 | .0852157 | 4.71 | 0.000 | .234508 .
> 5685472 |
| Northern Cape | .088538 | .0978739 | 0.90 | 0.366 | -.1032912 .
> 2803673 |
| Western Cape | -.2681058 | .0782746 | -3.43 | 0.001 | -.4215211 -.
> 1146904 |
| rainfall | .0000622 | .0001146 | 0.54 | 0.588 | -.0001625 . |

```
> 0002868
                       _cons |  -2.764673   .2257358   -12.25   0.000    -3.207107   -2
> .322239
ln(L.firm_size_year_non_~l) |          1  (exposure)
-------------------------------------------------------------------------------------
  _______
                    /lnalpha |  -1.158077   .0604996                     -1.276654
> -1.0395
-------------------------------------------------------------------------------------
  _______
                       alpha |   .3140896   .0190023                      .2789691    .
> 3536314
-------------------------------------------------------------------------------------
  _______
```

```
305                 estimates store reg6

306         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |      2,287    .7148255     .321928          0          1

307         estout reg* using "nb_exit_w_NON_CIT_Survivor.xls", replace  cells(b(star fm
  > t(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselev
  > els varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_exit_w_NON_CIT_Survivor.xls not found)
  (output written to nb_exit_w_NON_CIT_Survivor.xls)

308
309 * coef plot - full model with dynamic offset variable
310         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

311
312         graph export "nb_exit_w_NON_CIT_Survivor.png", replace
  (file nb_exit_w_NON_CIT_Survivor.png not found)
  file nb_exit_w_NON_CIT_Survivor.png saved as PNG format

313         graph save "nb_exit_w_NON_CIT_Survivor.gph", replace
  (file nb_exit_w_NON_CIT_Survivor.gph not found)
  (file nb_exit_w_NON_CIT_Survivor.gph saved)

314
315
316         restore

317
```

```
318 **# Reg analysis: CIT Non Survivors
319
320 ********************************************************************************
321 *                                                      Total employment
  >                                                           *
322 ********************************************************************************
323         cap mkdir "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum w
  > age\datasets for Marlies\Analysis using Marlies code and Michael's samples\Non Seaso
  > nal\CIT NON Survivors"

324         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
  > asets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT
  >  NON Survivors"
  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
  > ies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT NON Survivors

325
326         preserve

327         keep if merge_CIT==3 & non_survivor==1 // CIT, non survivor
  (86,307 observations deleted)

328
329                 * nbreg unweighted
330
331         estimates clear

332         nbreg count_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -2643.2979
  Iteration 1:   log pseudolikelihood = -2333.7855
  Iteration 2:   log pseudolikelihood = -2327.2951
  Iteration 3:   log pseudolikelihood = -2327.2909
  Iteration 4:   log pseudolikelihood = -2327.2909

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -1601.9061
  Iteration 1:   log pseudolikelihood = -1521.2148
  Iteration 2:   log pseudolikelihood = -1489.3501
  Iteration 3:   log pseudolikelihood = -1488.1568
  Iteration 4:   log pseudolikelihood = -1488.1562
  Iteration 5:   log pseudolikelihood = -1488.1562

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -1466.5385
  Iteration 1:   log pseudolikelihood = -1449.7955
  Iteration 2:   log pseudolikelihood = -1444.9741
  Iteration 3:   log pseudolikelihood = -1444.9715
  Iteration 4:   log pseudolikelihood = -1444.9715

  Negative binomial regression                    Number of obs     =        433
                                                  Wald chi2(23)     =      67.18
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -1444.9715               Pseudo R2         =     0.0290
```

(Std. Err. adjusted for **187** clusters in ta
> xrefno)

| count_agri | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. In
> terval] | |
|---|---|---|---|---|---|---|
| prop_affected_all | **-.1457742** | **.1864887** | **-0.78** | **0.434** | **-.5112854** | |
> **.219737**
| taxyear | | | | | | |
| 2012 | **-.3311496** | **.2200399** | **-1.50** | **0.132** | **-.7624198** | **.**
> **1001207**
| 2014 | **.1305668** | **.1933991** | **0.68** | **0.500** | **-.2484884** | **.**
> **5096221**
| 2015 | **-.2972664** | **.1897662** | **-1.57** | **0.117** | **-.6692013** | **.**
> **0746685**
| 2016 | **.0896023** | **.1768649** | **0.51** | **0.612** | **-.2570466** | **.**
> **4362512**
| taxyear#c.prop_affected_all | | | | | | |
| 2012 | **.4642344** | **.3088098** | **1.50** | **0.133** | **-.1410216** | |
> **1.06949**
| 2014 | **-.1319156** | **.2759428** | **-0.48** | **0.633** | **-.6727535** | **.**
> **4089224**
| 2015 | **.2591677** | **.260102** | **1.00** | **0.319** | **-.2506228** | **.**
> **7689582**
| 2016 | **-.1440688** | **.2228628** | **-0.65** | **0.518** | **-.580872** | **.**
> **2927343**
| gender_fill | **-.1682153** | **.1208299** | **-1.39** | **0.164** | **-.4050375** | |
> **.068607**
| age_q1 | **1.620889** | **.3891875** | **4.16** | **0.000** | **.8580954** | **2**
> **.383682**
| age_q2 | **.931311** | **.2134481** | **4.36** | **0.000** | **.5129604** | **1**
> **.349661**
| age_q3 | **.0785042** | **.1371857** | **0.57** | **0.567** | **-.1903747** | **.**
> **3473832**
| age_q4 | **.0160996** | **.1855767** | **0.09** | **0.931** | **-.347624** | **.**
> **3798232**
| age_q5 | **0** | (omitted) | | | | |
| mode_prov_num | | | | | | |
| Free State | **-.1817242** | **.1487793** | **-1.22** | **0.222** | **-.4733262** | **.**
> **1098779**
| Gauteng | **-.30814** | **.1496272** | **-2.06** | **0.039** | **-.6014039** | **-.**
> **0148761**
| KwaZulu-Natal | **-.0656406** | **.2268644** | **-0.29** | **0.772** | **-.5102866** | **.**
> **3790054**
| Limpopo | **-.2141249** | **.1484** | **-1.44** | **0.149** | **-.5049835** | **.**
> **0767337**
| Mpumalanga | **-.193486** | **.1916544** | **-1.01** | **0.313** | **-.5691217** | **.**
> **1821498**
| North West | **-.3537016** | **.1589463** | **-2.23** | **0.026** | **-.6652306** | **-.**
> **0421726**
| Northern Cape | **.1416412** | **.2995895** | **0.47** | **0.636** | **-.4455434** | **.**
> **7288257**
| Western Cape | **-.26294** | **.1628851** | **-1.61** | **0.106** | **-.582189** | **.**
> **0563089**
| rainfall | **-.0000451** | **.000433** | **-0.10** | **0.917** | **-.0008939** | **.**
> **0008036**
| _cons | **.268423** | **.2917349** | **0.92** | **0.358** | **-.3033669** | **.**
> **8402129**
| ln(L.firm_size_year_non_~l) | **1** | (exposure) | | | | |
| /lnalpha | **-1.592263** | **.2451897** | | | **-2.072826** | |
> **-1.1117**

```
------------------------------------------------------------------------------
               alpha |   .2034647   .0498875                      .1258297    .
> 3289993
------------------------------------------------------------------------------
```

```
333         estimates store reg8

334         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        107    .6916704    .3442978          0          1

335         estout reg* using nb_empl_uw_non_CIT_Non_survivor.xls, replace  cells(b(star
  >  fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobase
  > levels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_empl_uw_non_CIT_Non_survivor.xls not found)
  (output written to nb_empl_uw_non_CIT_Non_survivor.xls)

336
337
338         * coef plot - full model with LAGGED dynamic offset variable
339         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

340
341         graph export "nb_empl_uw_CIT_Non_survivor.png", replace as(png)
  (file nb_empl_uw_CIT_Non_survivor.png not found)
  file nb_empl_uw_CIT_Non_survivor.png saved as PNG format

342         graph save "nb_empl_uw_CIT_Non_survivor.gph", replace
  (file nb_empl_uw_CIT_Non_survivor.gph not found)
  (file nb_empl_uw_CIT_Non_survivor.gph saved)

343
344 * nbreg weighted
345
346         estimates clear

347         nbreg count_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_size_
  > year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -190184.28
  Iteration 1:   log pseudolikelihood = -169083.15
  Iteration 2:   log pseudolikelihood =  -169028.8
  Iteration 3:   log pseudolikelihood =  -169028.8

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -79249.102
  Iteration 1:   log pseudolikelihood = -76170.066
  Iteration 2:   log pseudolikelihood = -76025.418
  Iteration 3:   log pseudolikelihood = -76023.187
  Iteration 4:   log pseudolikelihood = -76023.186
```

```
Fitting full model:

Iteration 0:   log pseudolikelihood =  -75465.85
Iteration 1:   log pseudolikelihood = -72804.036
Iteration 2:   log pseudolikelihood = -72550.436
Iteration 3:   log pseudolikelihood = -72546.854
Iteration 4:   log pseudolikelihood = -72546.854

Negative binomial regression                    Number of obs     =        433
                                                Wald chi2(23)     =     111.09
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -72546.854               Pseudo R2         =     0.0457

                                                (Std. Err. adjusted for 187 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
  count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
prop_affected_all |   .1027313   .2941446     0.35   0.727    -.4737816    .
> 6792442
             |
             taxyear |
               2012  |  -.2042358   .1635782    -1.25   0.212    -.5248432    .
> 1163716
               2014  |   .6813115   .3179581     2.14   0.032     .0581252    1
> .304498
               2015  |  -.0555338   .2121757    -0.26   0.794    -.4713906
> .360323
               2016  |   .4521211    .234495     1.93   0.054    -.0074807
> .911723
             |
taxyear#c.prop_affected_all |
               2012  |   .2762146   .4844813     0.57   0.569    -.6733513    1
> .225781
               2014  |   -.820903   .4696784    -1.75   0.080    -1.741456    .
> 0996497
               2015  |    .134898   .4749713     0.28   0.776    -.7960287    1
> .065825
               2016  |  -.4023478   .3364691    -1.20   0.232    -1.061815    .
> 2571195
             |
          gender_fill  |    -.42455   .2807022    -1.51   0.130    -.9747163    .
> 1256163
               age_q1  |   2.568063   .7282386     3.53   0.000     1.140742    3
> .995385
               age_q2  |   1.075688   .4868298     2.21   0.027     .1215191    2
> .029857
               age_q3  |  -.9960072   .6556363    -1.52   0.129    -2.281031    .
> 2890162
               age_q4  |  -.3263176   .5229425    -0.62   0.533    -1.351266    .
> 6986309
               age_q5  |          0  (omitted)
             |
        mode_prov_num |
          Free State  |  -.5509728   .2480717    -2.22   0.026    -1.037184   -.
> 0647612
             Gauteng  |  -.8075461   .2454093    -3.29   0.001    -1.288539   -.
> 3265527
        KwaZulu-Natal  |  -.6501044   .2990806    -2.17   0.030    -1.236292   -.
> 0639172
             Limpopo  |  -.7922154   .2264957    -3.50   0.000    -1.236139    -
> .348292
           Mpumalanga  |   -.939247   .2800773    -3.35   0.001    -1.488188   -.
> 3903056
           North West  |  -.7463403   .2502696    -2.98   0.003     -1.23686    -
> .255821
        Northern Cape  |   .0725175   .5830145     0.12   0.901     -1.07017    1
> .215205
```

```
              Western Cape |   -.844375   .2328586    -3.63   0.000    -1.300769   -.
> 3879805
                           |
                 rainfall |   .0005539   .0009355     0.59   0.554    -.0012796    .
> 0023874
                    _cons |   .5600169   .6835467     0.82   0.413      -.77971    1
> .899744
ln(L.firm_size_year_non_~l) |          1  (exposure)
----------------------------+-----------------------------------------------------
  _______
                 /lnalpha |  -1.516305   .2511623                      -2.008574   -1
> .024036
----------------------------+-----------------------------------------------------
  _______
                    alpha |   .2195214   .0551355                       .1341798    .
> 3591423
----------------------------+-----------------------------------------------------
  _______
```

```
348         estimates store reg8

349 summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**107**	**.6916704**	**.3442978**	**0**	**1**

```
350         estout reg* using nb_empl_w_CIT_Non_survivor.xls, replace  cells(b(star fmt(
  > 3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselevel
  > s varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_empl_w_CIT_Non_survivor.xls not found)
  (output written to nb_empl_w_CIT_Non_survivor.xls)

351
352
353 * coef plot - full model with LAGGED dynamic offset variable
354         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

355
356         graph export "nb_empl_w_CIT_Non_survivor.png", replace as(png)
  (file nb_empl_w_CIT_Non_survivor.png not found)
  file nb_empl_w_CIT_Non_survivor.png saved as PNG format

357         graph save "nb_empl_w_CIT_Non_survivor.gph", replace
  (file nb_empl_w_CIT_Non_survivor.gph not found)
  (file nb_empl_w_CIT_Non_survivor.gph saved)
```

```
358
359 ********************************************************************************
360 *                                                                              Entry
  >                                                                                *
361 ********************************************************************************
362 *nbreg unweighted
363         estimates clear

364         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -2582.308
  Iteration 1:   log pseudolikelihood = -2031.8767
  Iteration 2:   log pseudolikelihood = -2018.3955
  Iteration 3:   log pseudolikelihood = -2018.1515
  Iteration 4:   log pseudolikelihood = -2018.1513
  Iteration 5:   log pseudolikelihood = -2018.1513

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood =   -1277.73
  Iteration 1:   log pseudolikelihood = -1275.1773
  Iteration 2:   log pseudolikelihood = -1275.1715
  Iteration 3:   log pseudolikelihood = -1275.1715

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -1271.9364
  Iteration 1:   log pseudolikelihood = -1256.6234
  Iteration 2:   log pseudolikelihood = -1247.8945
  Iteration 3:   log pseudolikelihood = -1247.8598
  Iteration 4:   log pseudolikelihood = -1247.8597

  Negative binomial regression                    Number of obs     =        632
                                                  Wald chi2(23)     =      51.90
  Dispersion           = mean                     Prob > chi2       =     0.0005
  Log pseudolikelihood = -1247.8597               Pseudo R2         =     0.0214

                                                 (Std. Err. adjusted for 258 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
  _______
                       |               Robust
    entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------
  _______
          prop_affected_all |   .1292218   .3402494     0.38   0.704    -.5376547    .
  > 7960983
                       |
                    taxyear |
                       2012 |    -.43859    .507194    -0.86   0.387    -1.432672    .
  > 5554921
                       2014 |  -.1399385   .3892473    -0.36   0.719    -.9028493    .
  > 6229723
                       2015 |   .4279336   .4781031     0.90   0.371    -.5091312    1
  > .364998
                       2016 |  -.1768867   .4780166    -0.37   0.711    -1.113782    .
  > 7600085
                       |
  taxyear#c.prop_affected_all |
                       2012 |   .7083297   .6065486     1.17   0.243    -.4804837    1
  > .897143
                       2014 |  -.1565474   .4600382    -0.34   0.734    -1.058206    .
  > 7451109
                       2015 |  -.5512924    .593598    -0.93   0.353    -1.714723    .
  > 6121382
                       2016 |   .2452719   .5942987     0.41   0.680    -.9195322    1
  > .410076
```

gender_fill	.3856369	.2259858	1.71	0.088	-.0572871	.8285609
age_q1	2.266327	.4828758	4.69	0.000	1.319908	3.212746
age_q2	1.158467	.3618654	3.20	0.001	.4492242	1.867711
age_q3	.6705522	.3305861	2.03	0.043	.0226154	1.318489
age_q4	-.3711478	.4874715	-0.76	0.446	-1.326574	.5842789
age_q5	0	(omitted)				
mode_prov_num						
Free State	.3697616	.3140456	1.18	0.239	-.2457564	.9852796
Gauteng	.3539578	.2743912	1.29	0.197	-.1838392	.8917547
KwaZulu-Natal	.0434802	.3000723	0.14	0.885	-.5446508	.6316111
Limpopo	.3175102	.2952001	1.08	0.282	-.2610714	.8960917
Mpumalanga	.1866693	.2798906	0.67	0.505	-.3619062	.7352447
North West	.1033345	.3892369	0.27	0.791	-.6595559	.8662248
Northern Cape	.3393768	.5715013	0.59	0.553	-.7807452	1.459499
Western Cape	-.0045498	.2546917	-0.02	0.986	-.5037363	.4946367
rainfall	.000652	.000886	0.74	0.462	-.0010845	.0023884
_cons	-2.912605	.8071811	-3.61	0.000	-4.494651	-1.330559
ln(firm_size_year_non_se~l)	1	(exposure)				
/lnalpha	.011312	.1006176			-.1858949	.208519
alpha	1.011376	.1017623			.8303609	1.231852

```
365                estimates store reg6

366         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	177	.7131368	.3497616	0	1

```
367         estout reg* using "nb_entr_uw_CIT_Non_survivor.xls", replace  cells(b(star f
> mt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobasele
> vels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_entr_uw_CIT_Non_survivor.xls not found)
(output written to nb_entr_uw_CIT_Non_survivor.xls)
```

```
368
369 * coef plot - full model with dynamic offset variable
370         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

371
372         graph export "nb_entr_uw_CIT_Non_survivor.png", replace
  (file nb_entr_uw_CIT_Non_survivor.png not found)
  file nb_entr_uw_CIT_Non_survivor.png saved as PNG format

373         graph save "nb_entr_uw_CIT_Non_survivor.gph", replace
  (file nb_entr_uw_CIT_Non_survivor.gph not found)
  (file nb_entr_uw_CIT_Non_survivor.gph saved)

374
375
376 *nbreg weighted
377         estimates clear

378         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(firm_size_yea
  > r)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -305212.45
  Iteration 1:   log pseudolikelihood = -150463.51
  Iteration 2:   log pseudolikelihood = -134451.77
  Iteration 3:   log pseudolikelihood = -134322.66
  Iteration 4:   log pseudolikelihood = -134322.57
  Iteration 5:   log pseudolikelihood = -134322.57

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood =  -66332.41
  Iteration 1:   log pseudolikelihood = -65737.078
  Iteration 2:   log pseudolikelihood = -65631.156
  Iteration 3:   log pseudolikelihood = -65631.038
  Iteration 4:   log pseudolikelihood = -65631.038

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -63944.336
  Iteration 1:   log pseudolikelihood = -62398.008
  Iteration 2:   log pseudolikelihood = -62119.084
  Iteration 3:   log pseudolikelihood = -62113.806
  Iteration 4:   log pseudolikelihood = -62113.806

  Negative binomial regression                    Number of obs     =        632
                                                  Wald chi2(23)     =     246.41
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -62113.806               Pseudo R2         =     0.0536
```

(Std. Err. adjusted for **258** clusters in ta
> xrefno)

| entry_agri_N_seasonal | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. In
> terval] | |
|---|---|---|---|---|---|---|
| prop_affected_all | **1.625743** | **.489142** | **3.32** | **0.001** | **.6670426** | **2
> .584444** |
| taxyear | | | | | | |
| 2012 | **.215849** | **.5773939** | **0.37** | **0.709** | **-.9158222** | |
> **1.34752**
| 2014 | **.2001784** | **.3925869** | **0.51** | **0.610** | **-.5692777** | **.
> 9696346**
| 2015 | **1.561213** | **.5842941** | **2.67** | **0.008** | **.4160174** | **2
> .706408**
| 2016 | **.7639152** | **.5398033** | **1.42** | **0.157** | **-.2940798** |
> **1.82191**
| taxyear#c.prop_affected_all | | | | | | |
| 2012 | **-.0486492** | **.7653898** | **-0.06** | **0.949** | **-1.548786** | **1
> .451487**
| 2014 | **-.4093898** | **.5314122** | **-0.77** | **0.441** | **-1.450939** |
> **.632159**
| 2015 | **-1.486195** | **.7806951** | **-1.90** | **0.057** | **-3.016329** | **.
> 0439392**
| 2016 | **-.6730319** | **.7430454** | **-0.91** | **0.365** | **-2.129374** | **.
> 7833103**
| gender_fill | **.6956794** | **.3277125** | **2.12** | **0.034** | **.0533748** | **1
> .337984**
| age_q1 | **4.558709** | **.9555066** | **4.77** | **0.000** | **2.685951** | **6
> .431468**
| age_q2 | **2.747518** | **.7090314** | **3.88** | **0.000** | **1.357842** | **4
> .137194**
| age_q3 | **.9673008** | **.669997** | **1.44** | **0.149** | **-.3458691** | **2
> .280471**
| age_q4 | **-.5507832** | **.9192446** | **-0.60** | **0.549** | **-2.352469** | **1
> .250903**
age_q5	**0**	(omitted)				
mode_prov_num						
Free State	**.4906648**	**.3428355**	**1.43**	**0.152**	**-.1812804**
> **1.16261**
| Gauteng | **-.3228763** | **.394704** | **-0.82** | **0.413** | **-1.096482** | **.
> 4507294**
| KwaZulu-Natal | **.0701038** | **.3012193** | **0.23** | **0.816** | **-.5202751** | **.
> 6604827**
| Limpopo | **.7288689** | **.2570815** | **2.84** | **0.005** | **.2249984** | **1
> .232739**
| Mpumalanga | **.1412345** | **.2366231** | **0.60** | **0.551** | **-.3225382** | **.
> 6050072**
| North West | **-.152906** | **.3758476** | **-0.41** | **0.684** | **-.8895538** | **.
> 5837418**
| Northern Cape | **-.378888** | **.6214134** | **-0.61** | **0.542** | **-1.596836** | **.
> 8390598**
| Western Cape | **-.18315** | **.2250495** | **-0.81** | **0.416** | **-.624239** | **.
> 2579389**
| rainfall | **.0000769** | **.001097** | **0.07** | **0.944** | **-.0020733** | **.
> 0022271**
| _cons | **-4.363135** | **.946191** | **-4.61** | **0.000** | **-6.217635** | **-2
> .508634**
| ln(firm_size_year_non_se~l) | **1** | (exposure) | | | | |
| /lnalpha | **-.5255917** | **.1785812** | | | **-.8756045** | **-.
> 1755788** |

```
------------------------------------------------------------------------------
               alpha |   .5912055   .1055782                      .4166101    .
> 8389712
------------------------------------------------------------------------------

379             estimates store reg6

380         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        177    .7131368    .3497616          0          1

381         estout reg* using "nb_entr_w_CIT_Non_survivor.xls", replace  cells(b(star fm
> t(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobaselev
> els varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_entr_w_CIT_Non_survivor.xls not found)
(output written to nb_entr_w_CIT_Non_survivor.xls)

382
383 * coef plot - full model with dynamic offset variable
384         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) ///
>         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
> ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
> ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
> abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
>  noticks)

385
386         graph export "nb_entr_w_CIT_Non_survivor.png", replace
(file nb_entr_w_CIT_Non_survivor.png not found)
file nb_entr_w_CIT_Non_survivor.png saved as PNG format

387         graph save "nb_entr_w_CIT_Non_survivor.gph", replace
(file nb_entr_w_CIT_Non_survivor.gph not found)
(file nb_entr_w_CIT_Non_survivor.gph saved)

388
389
390
391 ********************************************************************************
392 *                                                                          Exit
>                                                                          *
393 ********************************************************************************
394
395 *nbreg unweighted
396         estimates clear

397         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear  gender_fill age_q
> * i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
note: age_q5 omitted because of collinearity.

Fitting Poisson model:

Iteration 0:   log pseudolikelihood = -3582.9027
Iteration 1:   log pseudolikelihood = -1635.1434
Iteration 2:   log pseudolikelihood =  -1126.961
Iteration 3:   log pseudolikelihood = -1071.7054
Iteration 4:   log pseudolikelihood = -1071.6423
Iteration 5:   log pseudolikelihood = -1071.6423

Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -846.21527
Iteration 1:   log pseudolikelihood = -835.42604
Iteration 2:   log pseudolikelihood = -834.02711
Iteration 3:   log pseudolikelihood = -834.02066
Iteration 4:   log pseudolikelihood = -834.02066

Fitting full model:

Iteration 0:   log pseudolikelihood = -832.18754
Iteration 1:   log pseudolikelihood = -824.05675
Iteration 2:   log pseudolikelihood =  -815.7169
Iteration 3:   log pseudolikelihood = -815.61405
Iteration 4:   log pseudolikelihood = -815.61401

Negative binomial regression                    Number of obs     =        433
                                                Wald chi2(23)     =      61.04
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -815.61401               Pseudo R2         =     0.0221

                                                (Std. Err. adjusted for 187 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
exit_agri_new|      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
prop_affected_all|   .8722709   .3108354     2.81   0.005     .2630448    1
> .481497
             |
            taxyear|
                2012|   .7149864   .3057301     2.34   0.019     .1157665    1
> .314206
                2014|   .3615516   .3132767     1.15   0.248    -.2524594    .
> 9755627
                2015|   .4542042   .4182256     1.09   0.277    -.3655029    1
> .273911
                2016|  -.6909677   .4991063    -1.38   0.166    -1.669198    .
> 2872626
             |
taxyear#c.prop_affected_all|
                2012|  -.9211957   .4153561    -2.22   0.027    -1.735279   -.
> 1071127
                2014|  -.1843137   .4024248    -0.46   0.647    -.9730518    .
> 6044244
                2015|  -.5131308   .5287941    -0.97   0.332    -1.549548    .
> 5232865
                2016|   .3121588   .6105664     0.51   0.609    -.8845292    1
> .508847
             |
          gender_fill|   .0873017   .2458604     0.36   0.723    -.3945758    .
> 5691792
               age_q1|   .3035833   .6620599     0.46   0.647    -.9940304    1
> .601197
               age_q2|  -.2595218    .363032    -0.71   0.475    -.9710514    .
> 4520079
               age_q3|   .2440293   .2829527     0.86   0.388    -.3105479    .
> 7986065
               age_q4|  -.4512911   .4519322    -1.00   0.318    -1.337062    .
> 4344798
               age_q5|          0  (omitted)
             |
          mode_prov_num|
          Free State|    .411051   .3010564     1.37   0.172    -.1790088    1
> .001111
             Gauteng|   .5364711   .2844731     1.89   0.059     -.021086    1
> .094028
           KwaZulu-Natal|   .5208337   .3755798     1.39   0.166    -.2152892    1
> .256957
             Limpopo|   .4976374   .3218202     1.55   0.122    -.1331186    1
> .128394
```

```
                Mpumalanga |   .5288221   .3047449     1.74   0.083     -.068467    1
> .126111
                North West |   .6788369   .3236449     2.10   0.036     .0445046    1
> .313169
            Northern Cape |  -.0643167   .4119729    -0.16   0.876    -.8717687    .
> 7431354
             Western Cape |   .1894173   .2412811     0.79   0.432    -.2834849    .
> 6623195
                          |
                rainfall |  -.000049   .0007025    -0.07   0.944    -.0014259    .
> 0013279
                   _cons |  -2.919086    .645284    -4.52   0.000    -4.183819   -1
> .654352
ln(L.firm_size_year_non_~l) |          1  (exposure)
------------------------------------------------------------------------------
              /lnalpha |  -.678868   .1614382                      -.995281   -
> .362455
-------------------------+----------------------------------------------------
                 alpha |   .5071908     .08188                      .3696196    .
> 6959656
------------------------------------------------------------------------------
```

```
398             estimates store reg6

399         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**107**	**.6916704**	**.3442978**	**0**	**1**

```
400         estout reg* using "nb_exit_uw_CIT_Non_survivor.xls", replace  cells(b(star f
  > mt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobasele
  > vels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_exit_uw_CIT_Non_survivor.xls not found)
  (output written to nb_exit_uw_CIT_Non_survivor.xls)

401
402 * coef plot - full model with dynamic offset variable
403         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

404
405         graph export "nb_exit_uw_CIT_Non_survivor.png", replace
  (file nb_exit_uw_CIT_Non_survivor.png not found)
  file nb_exit_uw_CIT_Non_survivor.png saved as PNG format
```

```
          graph save "nb_exit_uw_CIT_Non_survivor.gph", replace
  (file nb_exit_uw_CIT_Non_survivor.gph not found)
  (file nb_exit_uw_CIT_Non_survivor.gph saved)


 *nbreg weighted
          estimates clear

          nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear gender_fill age_q*
 >  i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_siz
 > e_year)
 note: age_q5 omitted because of collinearity.

 Fitting Poisson model:

 Iteration 0:   log pseudolikelihood = -186025.64
 Iteration 1:   log pseudolikelihood = -68918.566
 Iteration 2:   log pseudolikelihood =   -56663.1
 Iteration 3:   log pseudolikelihood = -56622.308
 Iteration 4:   log pseudolikelihood = -56622.294
 Iteration 5:   log pseudolikelihood = -56622.294

 Fitting constant-only model:

 Iteration 0:   log pseudolikelihood = -50883.772
 Iteration 1:   log pseudolikelihood = -49433.825
 Iteration 2:   log pseudolikelihood = -49242.851
 Iteration 3:   log pseudolikelihood = -49240.204
 Iteration 4:   log pseudolikelihood = -49240.204

 Fitting full model:

 Iteration 0:   log pseudolikelihood = -48186.253
 Iteration 1:   log pseudolikelihood = -46057.315
 Iteration 2:   log pseudolikelihood = -45958.216
 Iteration 3:   log pseudolikelihood = -45956.956
 Iteration 4:   log pseudolikelihood = -45956.956

 Negative binomial regression                      Number of obs     =        433
                                                   Wald chi2(23)     =     406.89
 Dispersion           = mean                       Prob > chi2       =     0.0000
 Log pseudolikelihood = -45956.956                 Pseudo R2         =     0.0667

                                               (Std. Err. adjusted for 187 clusters in ta
 > xrefno)
 ------------------------------------------------------------------------------------------
 > -------
                                |               Robust
                 exit_agri_new  |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
 > terval]
 -------------------------------+----------------------------------------------------------
 > -------
             prop_affected_all  |   1.225813   .3128302     3.92   0.000     .6126768    1
 > .838949
                                |
                       taxyear  |
                         2012   |    .340415   .2101448     1.62   0.105    -.0714612    .
 > 7522911
                         2014   |   .4812532   .1895555     2.54   0.011     .1097312    .
 > 8527751
                         2015   |   .5859142   .5680032     1.03   0.302    -.5273516
 > 1.69918
                         2016   |  -.0982287   .4529322    -0.22   0.828    -.9859595    .
 > 7895021
                                |
 taxyear#c.prop_affected_all    |
                         2012   |  -.2464959   .5475196    -0.45   0.653    -1.319615    .
 > 8266228
                         2014   |  -.2400098   .3238753    -0.74   0.459    -.8747938    .
 > 3947742
                         2015   |  -.4016101   .7262312    -0.55   0.580    -1.824997    1
```

2016	-.0471092	.6138925	-0.08	0.939	-1.250316	1 > .021777 > .156098
gender_fill	.3343569	.2984695	1.12	0.263	-.2506327	. > .9193464
age_q1	-.4882501	1.057212	-0.46	0.644	-2.560348	1 > .583848
age_q2	.5878733	.6483572	0.91	0.365	-.6828834	> 1.85863
age_q3	1.164793	.6138242	1.90	0.058	-.03828	2 > .367867
age_q4	-1.04459	.7730385	-1.35	0.177	-2.559718	. > .4705375
age_q5	0	(omitted)				
mode_prov_num Free State	.4654677	.2826949	1.65	0.100	-.0886041	> 1.01954
Gauteng	.2850342	.2597125	1.10	0.272	-.2239931	. > .7940614
KwaZulu-Natal	.054931	.3692894	0.15	0.882	-.668863	> .778725
Limpopo	.8610069	.1824086	4.72	0.000	.5034925	1 > .218521
Mpumalanga	.3518939	.2899567	1.21	0.225	-.2164109	. > .9201987
North West	.7308198	.3097654	2.36	0.018	.1236907	1 > .337949
Northern Cape	.0434395	.5199159	0.08	0.933	-.9755769	1 > .062456
Western Cape	.156776	.198901	0.79	0.431	-.2330628	. > .5466148
rainfall	.000469	.0009439	0.50	0.619	-.0013811	. > .0023191
_cons	-3.723413	.8169596	-4.56	0.000	-5.324624	-2 > .122201
ln(L.firm_size_year_non_~l)	1	(exposure)				
/lnalpha	-1.43402	.4201872			-2.257572	-. > .6104683
alpha	.2383488	.1001511			.1046042	. > .5430965

412 estimates store reg6

413 summ prop_affected_all if taxyear==2013 & e(sample)==1

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	107	.6916704	.3442978	0	1

414 estout reg* using "nb_exit_w_CIT_Non_survivor.xls", replace cells(b(star fm > t(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N")) nobaselev > els varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file **nb_exit_w_CIT_Non_survivor.xls** not found)
(output written to nb_exit_w_CIT_Non_survivor.xls)

```
415
416 * coef plot - full model with dynamic offset variable
417         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

418
419         graph export "nb_exit_w_CIT_Non_survivor.png", replace
  (file nb_exit_w_CIT_Non_survivor.png not found)
  file nb_exit_w_CIT_Non_survivor.png saved as PNG format

420         graph save "nb_exit_w_CIT_Non_survivor.gph", replace
  (file nb_exit_w_CIT_Non_survivor.gph not found)
  (file nb_exit_w_CIT_Non_survivor.gph saved)

421
422         restore

423
424         ************************************************************************
  > ****
425 *                                                    Total employment
  >                                                          *
426 ************************************************************************
427         cap mkdir "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum w
  > age\datasets for Marlies\Analysis using Marlies code and Michael's samples\Non Seaso
  > nal\NON CIT NON Survivors"

428         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
  > asets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT
  >  NON Survivors"
  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
  > ies\Analysis using Marlies code and Michael's samples\Non Seasonal\CIT NON Survivors

429
430         preserve

431         keep if merge_CIT==1 & non_survivor==1 // Non CIT, non survivor
  (81,481 observations deleted)

432
433 * nbreg unweighted
434
435         estimates clear

436         nbreg count_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -20143.585
  Iteration 1:   log pseudolikelihood = -17838.609
  Iteration 2:   log pseudolikelihood = -17830.909
  Iteration 3:   log pseudolikelihood = -17830.901
  Iteration 4:   log pseudolikelihood = -17830.901

  Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -11939.435
Iteration 1:   log pseudolikelihood = -11408.614
Iteration 2:   log pseudolikelihood = -11231.883
Iteration 3:   log pseudolikelihood = -11220.727
Iteration 4:   log pseudolikelihood = -11220.725
Iteration 5:   log pseudolikelihood = -11220.725

Fitting full model:

Iteration 0:   log pseudolikelihood = -11156.685
Iteration 1:   log pseudolikelihood = -11121.156
Iteration 2:   log pseudolikelihood = -11120.504
Iteration 3:   log pseudolikelihood = -11120.503

Negative binomial regression                    Number of obs     =      3,326
                                                Wald chi2(23)     =      83.10
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -11120.503               Pseudo R2         =     0.0089

                                               (Std. Err. adjusted for 1,012 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
  count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
  prop_affected_all |   .1277804   .1037751     1.23   0.218    -.0756151    .
> 3311759
                    |
             taxyear |
               2012 |   .0353425    .115714     0.31   0.760    -.1914527    .
> 2621377
               2014 |   .0488325   .1291473     0.38   0.705    -.2042916    .
> 3019565
               2015 |  -.0746231   .1071852    -0.70   0.486    -.2847023
> .135456
               2016 |   .0252392   .1317278     0.19   0.848    -.2329424    .
> 2834209
                    |
taxyear#c.prop_affected_all |
               2012 |  -.0180523   .1738378    -0.10   0.917    -.3587681    .
> 3226635
               2014 |  -.2787589   .1588021    -1.76   0.079    -.5900053    .
> 0324875
               2015 |  -.0809555   .1215973    -0.67   0.506    -.3192817    .
> 1573707
               2016 |  -.0734203   .1778876    -0.41   0.680    -.4220736
> .275233
                    |
         gender_fill |  -.1532712   .0674965    -2.27   0.023    -.2855618   -.
> 0209806
              age_q1 |   .9919249   .2237512     4.43   0.000     .5533807    1
> .430469
              age_q2 |   .3685468   .1153788     3.19   0.001     .1424085    .
> 5946851
              age_q3 |   .2856892    .089206     3.20   0.001     .1108487    .
> 4605298
              age_q4 |   .0710678   .0759631     0.94   0.350    -.0778172    .
> 2199529
              age_q5 |          0  (omitted)
                    |
        mode_prov_num |
        Free State |  -.0647479   .1208267    -0.54   0.592    -.3015639    .
> 1720682
           Gauteng |  -.0568016   .1206904    -0.47   0.638    -.2933504    .
> 1797472
      KwaZulu-Natal |  -.1765778   .0944445    -1.87   0.062    -.3616856
>  .00853
            Limpopo |  -.0098646   .1153383    -0.09   0.932    -.2359235    .
> 2161943
```

```
                Mpumalanga |  -.0733747   .1169306    -0.63   0.530    -.3025545    .
> 1558051
                North West |  -.0608837   .1301655    -0.47   0.640    -.3160034
> .194236
            Northern Cape |  -.0260383   .2051344    -0.13   0.899    -.4280944    .
> 3760178
             Western Cape |  -.0982482   .1052913    -0.93   0.351    -.3046153
> .108119
                          |
                rainfall |   .0001833   .0003872     0.47   0.636    -.0005757    .
> 0009423
                   _cons |  -.0376358   .3064791    -0.12   0.902    -.6383238    .
> 5630523
ln(L.firm_size_year_non_~l) |          1  (exposure)
------------------------------------------------------------------------------
              /lnalpha |  -1.30003   .1719344                      -1.637015   -.
> 9630443
------------------------------------------------------------------------------
                 alpha |   .2725238   .0468562                         .19456
> .381729
------------------------------------------------------------------------------
```

```
437         estimates store reg8

438         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**802**	**.7120041**	**.3454603**	**0**	**1**

```
439         estout reg* using nb_empl_uw_Non_CIT_Non_survivor.xls, replace  cells(b(star
>  fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobase
> levels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(output written to nb_empl_uw_Non_CIT_Non_survivor.xls)

440
441
442         * coef plot - full model with LAGGED dynamic offset variable
443         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
> nt)*/ ///
>         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
> ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
> olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
> icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

444
445         graph export "nb_empl_uw_Non_CIT_Non_survivor.png", replace as(png)
  (file nb_empl_uw_Non_CIT_Non_survivor.png not found)
  file nb_empl_uw_Non_CIT_Non_survivor.png saved as PNG format
```

```
446         graph save "nb_empl_uw_Non_CIT_Non_survivor.gph", replace
  (file nb_empl_uw_Non_CIT_Non_survivor.gph not found)
  (file nb_empl_uw_Non_CIT_Non_survivor.gph saved)

447
448 * nbreg weighted
449
450         estimates clear

451         nbreg count_agri c.prop_affected_all##ib(2013).taxyear  gender_fill age_q* i
  > .mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_size
  > _year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -9740892.9
  Iteration 1:   log pseudolikelihood =   -3035512
  Iteration 2:   log pseudolikelihood = -1177398.7
  Iteration 3:   log pseudolikelihood = -1167196.7
  Iteration 4:   log pseudolikelihood = -1167192.2
  Iteration 5:   log pseudolikelihood = -1167192.2

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -456900.89
  Iteration 1:   log pseudolikelihood = -454259.83
  Iteration 2:   log pseudolikelihood = -445247.51
  Iteration 3:   log pseudolikelihood = -444925.94
  Iteration 4:   log pseudolikelihood =  -444925.6
  Iteration 5:   log pseudolikelihood =  -444925.6

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -442700.78
  Iteration 1:   log pseudolikelihood = -439907.98
  Iteration 2:   log pseudolikelihood = -438504.56
  Iteration 3:   log pseudolikelihood = -438495.87
  Iteration 4:   log pseudolikelihood = -438495.87

  Negative binomial regression                    Number of obs     =      3,326
                                                  Wald chi2(23)     =      74.68
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -438495.87               Pseudo R2         =     0.0145

                                        (Std. Err. adjusted for 1,012 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
  _______
               |               Robust
    count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  -------------+----------------------------------------------------------------
  _______
  prop_affected_all |   .2790786   .2285293     1.22   0.222    -.1688306    .
  > 7269878
                    |
               taxyear |
                  2012 |   .1020982   .2153468     0.47   0.635    -.3199737    .
  > 5241701
                  2014 |   .2992784   .2924406     1.02   0.306    -.2738947    .
  > 8724515
                  2015 |   .1403648   .2327357     0.60   0.546    -.3157887    .
  > 5965183
                  2016 |    .275332   .3474492     0.79   0.428     -.405656
  >  .95632
                    |
  taxyear#c.prop_affected_all |
                  2012 |  -.0653007   .2832085    -0.23   0.818     -.620379    .
  > 4897777
                  2014 |  -.7664864   .3787329    -2.02   0.043    -1.508789   -.
  > 0241835
```

```
                    2015 |  -.2005914   .3093366    -0.65   0.517      -.80688    .
> 4056971
                    2016 |   .036929   .3910407     0.09   0.925    -.7294968    .
> 8033547
                         |
                gender_fill |  -.1936268   .1781111    -1.09   0.277    -.5427182    .
> 1554646
                     age_q1 |   1.777845   .5472866     3.25   0.001     .7051828    2
> .850507
                     age_q2 |   .2479226   .4514799     0.55   0.583    -.6369617    1
> .132807
                     age_q3 |   .1988676   .4254753     0.47   0.640    -.6350487    1
> .032784
                     age_q4 |   .5586232   .3789532     1.47   0.140    -.1841115    1
> .301358
                     age_q5 |          0  (omitted)
                            |
              mode_prov_num |
                Free State |  -.0266275   .3534288    -0.08   0.940    -.7193352    .
> 6660801
                    Gauteng |  -.0255516   .3466549    -0.07   0.941    -.7049828    .
> 6538795
               KwaZulu-Natal |  -.4682356   .2277738    -2.06   0.040    -.9146639   -.
> 0218072
                    Limpopo |  -.2690569   .2443214    -1.10   0.271    -.7479181    .
> 2098043
                  Mpumalanga |  -.5547293   .2896437    -1.92   0.055     -1.12242    .
> 0129618
                  North West |  -.1744461   .3654121    -0.48   0.633    -.8906408    .
> 5417485
               Northern Cape |   .1439526   .6532538     0.22   0.826    -1.136401    1
> .424306
                Western Cape |  -.2608975   .2759327    -0.95   0.344    -.8017156    .
> 2799207
                         |
                rainfall |   .0012803   .0012593     1.02   0.309    -.0011878    .
> 0037484
                   _cons |    -.5911   .9703508    -0.61   0.542    -2.492953    1
> .310753
ln(L.firm_size_year_non_~l) |          1  (exposure)
-------------------------------------------------------------------------------
  -------
                  /lnalpha |  -.8147614   .2720744                    -1.348017   -.
> 2815053
-------------------------------------------------------------------------------
  -------
                     alpha |    .442745   .1204596                     .2597547    .
> 7546469
-------------------------------------------------------------------------------
  -------
```

```
452         estimates store reg8

453 summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        802    .7120041    .3454603          0          1

454         estout reg* using nb_empl_w_Non_CIT_Non_survivor.xls, replace  cells(b(star
> fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobasel
> evels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_empl_w_Non_CIT_Non_survivor.xls not found)
(output written to nb_empl_w_Non_CIT_Non_survivor.xls)
```

```
455
456
457 * coef plot - full model with LAGGED dynamic offset variable
458         coefplot reg8, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) /*ytitle(Interaction coefficie
  > nt)*/ ///
  >         /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yline(0, lcolor("gs10
  > ") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)) fcolor(white) lc
  > olor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, labcolor("gs1") not
  > icks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin) noticks)

459
460         graph export "nb_empl_w_Non_CIT_Non_survivor.png", replace as(png)
  (file nb_empl_w_Non_CIT_Non_survivor.png not found)
  file nb_empl_w_Non_CIT_Non_survivor.png saved as PNG format

461         graph save "nb_empl_w_Non_CIT_Non_survivor.gph", replace
  (file nb_empl_w_Non_CIT_Non_survivor.gph not found)
  (file nb_empl_w_Non_CIT_Non_survivor.gph saved)

462
463 *****************************************************************************
464 *                                                                       Entry
  >                                                                    *
465 *****************************************************************************
466 *nbreg unweighted
467         estimates clear

468         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
  > mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -13383.837
  Iteration 1:   log pseudolikelihood =  -12416.42
  Iteration 2:   log pseudolikelihood = -12408.937
  Iteration 3:   log pseudolikelihood = -12408.927
  Iteration 4:   log pseudolikelihood = -12408.927

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -7456.2897
  Iteration 1:   log pseudolikelihood = -7408.4573
  Iteration 2:   log pseudolikelihood = -7408.1081
  Iteration 3:   log pseudolikelihood =  -7408.108

  Fitting full model:

  Iteration 0:   log pseudolikelihood =  -7296.428
  Iteration 1:   log pseudolikelihood = -7240.3911
  Iteration 2:   log pseudolikelihood =  -7231.368
  Iteration 3:   log pseudolikelihood = -7231.3526
  Iteration 4:   log pseudolikelihood = -7231.3526

  Negative binomial regression                    Number of obs     =      3,892
                                                  Wald chi2(23)     =     425.59
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -7231.3526               Pseudo R2         =     0.0239
```

(Std. Err. adjusted for **1,118** clusters in ta
> xrefno)

| entry_agri_N_seasonal | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| prop_affected_all | .467952 | .1599198 | 2.93 | 0.003 | .154515 .
> 7813891 |
| taxyear | | | | | |
| 2012 | .4871352 | .1665236 | 2.93 | 0.003 | .1607549 .
> 8135155 |
| 2014 | -.1864525 | .1808586 | -1.03 | 0.303 | -.5409289 .
> 1680239 |
| 2015 | .0188532 | .2088727 | 0.09 | 0.928 | -.3905297
> .428236 |
| 2016 | -.3890582 | .27305 | -1.42 | 0.154 | -.9242263 .
> 1461099 |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | -.4862884 | .2040929 | -2.38 | 0.017 | -.8863032 -.
> 0862735 |
| 2014 | -.5884807 | .2216356 | -2.66 | 0.008 | -1.022878 -
> .154083 |
| 2015 | -.5598294 | .2388629 | -2.34 | 0.019 | -1.027992 -.
> 0916666 |
| 2016 | -.1483288 | .3286056 | -0.45 | 0.652 | -.7923839 .
> 4957263 |
| gender_fill | -.0316657 | .1000017 | -0.32 | 0.752 | -.2276655 .
> 1643341 |
| age_q1 | 1.793508 | .2062251 | 8.70 | 0.000 | 1.389315 2
> .197702 |
| age_q2 | 1.075331 | .182408 | 5.90 | 0.000 | .7178178 1
> .432844 |
| age_q3 | .4947324 | .165645 | 2.99 | 0.003 | .170074 .
> 8193907 |
| age_q4 | .133516 | .1565798 | 0.85 | 0.394 | -.1733747 .
> 4404068 |
| age_q5 | 0 | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | .2017203 | .1301894 | 1.55 | 0.121 | -.0534463 .
> 4568869 |
| Gauteng | .0523462 | .1246961 | 0.42 | 0.675 | -.1920536 .
> 2967461 |
| KwaZulu-Natal | -.0081898 | .1103932 | -0.07 | 0.941 | -.2245565 .
> 2081769 |
| Limpopo | .1075459 | .140718 | 0.76 | 0.445 | -.1682564 .
> 3833481 |
| Mpumalanga | .3080673 | .1242502 | 2.48 | 0.013 | .0645414 .
> 5515932 |
| North West | .071558 | .1667554 | 0.43 | 0.668 | -.2552765 .
> 3983925 |
| Northern Cape | .2484442 | .1840994 | 1.35 | 0.177 | -.1123839 .
> 6092723 |
| Western Cape | -.2629325 | .100231 | -2.62 | 0.009 | -.4593816 -.
> 0664834 |
| rainfall | -.0001766 | .0002948 | -0.60 | 0.549 | -.0007545 .
> 0004013 |
| _cons | -2.118044 | .2833694 | -7.47 | 0.000 | -2.673438 -
> 1.56265 |
| ln(firm_size_year_non_se~l) | 1 | (exposure) | | | |
| /lnalpha | .1407611 | .0436814 | | | .0551472 .
> 2263751 |

```
                    alpha |    1.15115   .0502838                      1.056696    1
> .254046
```

```
469                 estimates store reg6

470         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        999    .7243538    .3412564          0          1

471         estout reg* using "nb_entr_uw_Non_CIT_Non_survivor.xls", replace  cells(b(st
> ar fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) noba
> selevels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_entr_uw_Non_CIT_Non_survivor.xls not found)
(output written to nb_entr_uw_Non_CIT_Non_survivor.xls)

472
473 * coef plot - full model with dynamic offset variable
474         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) ///
>         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
> ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
> ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
> abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
>  noticks)

475
476         graph export "nb_entr_uw_Non_CIT_Non_survivor.png", replace
(file nb_entr_uw_Non_CIT_Non_survivor.png not found)
file nb_entr_uw_Non_CIT_Non_survivor.png saved as PNG format

477         graph save "nb_entr_uw_Non_CIT_Non_survivor.gph", replace
(file nb_entr_uw_Non_CIT_Non_survivor.gph not found)
(file nb_entr_uw_Non_CIT_Non_survivor.gph saved)

478
479
480 *nbreg weighted
481         estimates clear

482         nbreg entry_agri c.prop_affected_all##ib(2013).taxyear gender_fill age_q* i.
> mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(firm_size_yea
> r)
note: age_q5 omitted because of collinearity.

Fitting Poisson model:

Iteration 0:   log pseudolikelihood = -1278454.5
Iteration 1:   log pseudolikelihood = -756822.95
Iteration 2:   log pseudolikelihood = -750266.31
Iteration 3:   log pseudolikelihood =  -750238.6
Iteration 4:   log pseudolikelihood =  -750238.6

Fitting constant-only model:

Iteration 0:   log pseudolikelihood = -342751.37
Iteration 1:   log pseudolikelihood =  -342319.2
Iteration 2:   log pseudolikelihood = -342317.58
Iteration 3:   log pseudolikelihood = -342317.58
```

```
Fitting full model:

Iteration 0:   log pseudolikelihood = -336322.46
Iteration 1:   log pseudolikelihood = -335494.92
Iteration 2:   log pseudolikelihood = -331731.79
Iteration 3:   log pseudolikelihood = -331708.41
Iteration 4:   log pseudolikelihood = -331708.41

Negative binomial regression                    Number of obs     =      3,892
                                                Wald chi2(23)     =     365.50
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -331708.41               Pseudo R2         =     0.0310

                                    (Std. Err. adjusted for 1,118 clusters in ta
> xrefno)
------------------------------------------------------------------------------
             |               Robust
entry_agri_N_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
        prop_affected_all |   1.206075   .5727356     2.11   0.035     .0835338    2
> .328616
                          |
                  taxyear |
                     2012 |   .5704438   .4529283     1.26   0.208    -.3172795    1
> .458167
                     2014 |   .7931334    .782247     1.01   0.311    -.7400425    2
> .326309
                     2015 |   .7802207   .7045341     1.11   0.268    -.6006409    2
> .161082
                     2016 |  -.1333983   .5294452    -0.25   0.801    -1.171092    .
> 9042953
                          |
taxyear#c.prop_affected_all |
                     2012 |  -.6317996   .5159236    -1.22   0.221    -1.642991    .
> 3793921
                     2014 |  -1.576158   .8855422    -1.78   0.075    -3.311789    .
> 1594728
                     2015 |  -1.413873   .7953435    -1.78   0.075    -2.972717    .
> 1449717
                     2016 |  -.3616403   .6295925    -0.57   0.566    -1.595619    .
> 8723384
                          |
                gender_fill |   .2611675   .1904199     1.37   0.170    -.1120486    .
> 6343837
                     age_q1 |   3.266231   .4624768     7.06   0.000     2.359793    4
> .172669
                     age_q2 |   1.934836   .4109346     4.71   0.000     1.129419    2
> .740253
                     age_q3 |   .9104965   .3740387     2.43   0.015     .1773942    1
> .643599
                     age_q4 |  -.2508072   .3297572    -0.76   0.447    -.8971193
> .395505
                     age_q5 |          0  (omitted)
                          |
             mode_prov_num |
               Free State |   .3207012   .1692749     1.89   0.058    -.0110715    .
> 6524738
                  Gauteng |   .3571902   .2374634     1.50   0.133    -.1082296
>  .82261
             KwaZulu-Natal |   .2440766   .1599256     1.53   0.127    -.0693718
> .557525
                  Limpopo |   .3882697   .1506705     2.58   0.010     .0929609    .
> 6835786
                Mpumalanga |   .4247702   .1799313     2.36   0.018     .0721114    .
> 7774289
               North West |   .0397423   .2341686     0.17   0.865    -.4192198    .
> 4987045
            Northern Cape |   .1225283   .2385388     0.51   0.607    -.3449991    .
> 5900557
```

```
              Western Cape |  -.1828406   .1434872    -1.27   0.203    -.4640704    .
> 0983893
                           |
                 rainfall |  -.0004807   .0003705    -1.30   0.194     -.001207    .
> 0002455
                    _cons |  -3.118877   .6583375    -4.74   0.000    -4.409195   -1
> .828559
ln(firm_size_year_non_se~l) |          1  (exposure)
----------------------------+-----------------------------------------------------
  -------
                  /lnalpha |   -.218462   .1129075                     -.4397567    .
> 0028327
----------------------------+-----------------------------------------------------
  -------
                     alpha |   .8037541   .0907499                      .6441932    1
> .002837
----------------------------+-----------------------------------------------------
  -------
```

```
483               estimates store reg6

484         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	**999**	**.7243538**	**.3412564**	**0**	**1**

```
485         estout reg* using "nb_entr_w_Non_CIT_Non_survivor.xls", replace  cells(b(sta
  > r fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobas
  > elevels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_entr_w_Non_CIT_Non_survivor.xls not found)
  (output written to nb_entr_w_Non_CIT_Non_survivor.xls)

486
487 * coef plot - full model with dynamic offset variable
488         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

489
490         graph export "nb_entr_w_Non_CIT_Non_survivor.png", replace
  (file nb_entr_w_Non_CIT_Non_survivor.png not found)
  file nb_entr_w_Non_CIT_Non_survivor.png saved as PNG format

491         graph save "nb_entr_w_Non_CIT_Non_survivor.gph", replace
  (file nb_entr_w_Non_CIT_Non_survivor.gph not found)
  (file nb_entr_w_Non_CIT_Non_survivor.gph saved)

492
```

```
493
494
495 ********************************************************************************
496 *                                                                          Exit
  >                                                                        *
497 ********************************************************************************
498
499 *nbreg unweighted
500         estimates clear

501         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear gender_fill age_q*
  >  i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -11684.189
  Iteration 1:   log pseudolikelihood = -8055.4768
  Iteration 2:   log pseudolikelihood = -8025.7961
  Iteration 3:   log pseudolikelihood = -8025.7204
  Iteration 4:   log pseudolikelihood = -8025.7204

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -5986.5287
  Iteration 1:   log pseudolikelihood =   -5921.85
  Iteration 2:   log pseudolikelihood = -5917.6624
  Iteration 3:   log pseudolikelihood = -5917.6544
  Iteration 4:   log pseudolikelihood = -5917.6544

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -5874.7659
  Iteration 1:   log pseudolikelihood = -5839.5407
  Iteration 2:   log pseudolikelihood = -5837.7969
  Iteration 3:   log pseudolikelihood = -5837.7939
  Iteration 4:   log pseudolikelihood = -5837.7939

  Negative binomial regression                    Number of obs     =      3,326
                                                  Wald chi2(23)     =     139.21
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -5837.7939               Pseudo R2         =     0.0135

                                       (Std. Err. adjusted for 1,012 clusters in ta
  > xrefno)
  ------------------------------------------------------------------------------
    _______
               |               Robust
    exit_agri_new |      Coef.   Std. Err.      z    P>|z|     [95% Conf. In
  > terval]
  -------------+----------------------------------------------------------------
    _______
    prop_affected_all |  -.0264933   .1611078    -0.16   0.869    -.3422588    .
  > 2892722
                      |
                taxyear |
                  2012  |  -.1401364   .1652512    -0.85   0.396    -.4640229
  >  .18375
                  2014  |  -.2606234   .1685144    -1.55   0.122    -.5909056    .
  > 0696588
                  2015  |   .1857518   .1878559     0.99   0.323     -.182439    .
  > 5539426
                  2016  |   -.301583   .2210828    -1.36   0.173    -.7348973    .
  > 1317312
                      |
  taxyear#c.prop_affected_all |
                  2012  |   .2152522   .1994172     1.08   0.280    -.1755983    .
  > 6061028
                  2014  |   .5152964   .2013936     2.56   0.011     .1205723    .
  > 9100205
                  2015  |  -.1621203   .2256004    -0.72   0.472     -.604289    .
  > 2800483
```

2016	.3010745	.2620438	1.15	0.251	-.2125218	.
> 8146709						
gender_fill	.0390734	.1021141	0.38	0.702	-.1610667	.
> 2392135						
age_q1	1.431332	.2206745	6.49	0.000	.9988181	1
> .863846						
age_q2	.5794864	.1889751	3.07	0.002	.209102	.
> 9498709						
age_q3	.4064647	.1776109	2.29	0.022	.0583536	.
> 7545757						
age_q4	.1760656	.1594759	1.10	0.270	-.1365014	.
> 4886327						
age_q5	0	(omitted)				
mode_prov_num						
Free State	-.0077268	.1295111	-0.06	0.952	-.2615638	.
> 2461102						
Gauteng	.2530703	.1296695	1.95	0.051	-.0010772	.
> 5072179						
KwaZulu-Natal	.1856114	.1086463	1.71	0.088	-.0273314	.
> 3985542						
Limpopo	.2806391	.1372452	2.04	0.041	.0116434	.
> 5496349						
Mpumalanga	.2056021	.1255715	1.64	0.102	-.0405136	.
> 4517178						
North West	-.1294537	.1505764	-0.86	0.390	-.424578	.
> 1656705						
Northern Cape	.122938	.1644969	0.75	0.455	-.1994701	.
> 4453461						
Western Cape	-.1968486	.1044077	-1.89	0.059	-.401484	.
> 0077868						
rainfall	-.0004071	.0002254	-1.81	0.071	-.0008488	.
> 0000346						
_cons	-2.049895	.26224	-7.82	0.000	-2.563876	-1
> .535914						
ln(L.firm_size_year_non_~l)	1	(exposure)				
/lnalpha	-.5712541	.0550613			-.6791722	-
> .463336						
alpha	.5648167	.0310995			.5070366	.
> 6291812						

```
502                 estimates store reg6

503         summ prop_affected_all if taxyear==2013 & e(sample)==1
```

Variable	Obs	Mean	Std. dev.	Min	Max
prop_affe~ll	802	.7120041	.3454603	0	1

```
504         estout reg* using "nb_exit_uw_Non_CIT_Non_survivor.xls", replace  cells(b(st
  > ar fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) noba
  > selevels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
  (file nb_exit_uw_Non_CIT_Non_survivor.xls not found)
  (output written to nb_exit_uw_Non_CIT_Non_survivor.xls)
```

```
505
506 * coef plot - full model with dynamic offset variable
507         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
  > .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
  >  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
  > taxyear#c.prop_affected_all = "-2" ///
  >         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
  > "0" 2015.taxyear#c.prop_affected_all = "1" ///
  >         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
  > 3" , wrap(2)) ///
  >         baselevels omitted nolabel xtitle(Event time) ///
  >         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
  > ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
  > ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
  > abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
  >  noticks)

508
509         graph export "nb_exit_uw_Non_CIT_Non_survivor.png", replace
  (file nb_exit_uw_Non_CIT_Non_survivor.png not found)
  file nb_exit_uw_Non_CIT_Non_survivor.png saved as PNG format

510         graph save "nb_exit_uw_Non_CIT_Non_survivor.gph", replace
  (file nb_exit_uw_Non_CIT_Non_survivor.gph not found)
  (file nb_exit_uw_Non_CIT_Non_survivor.gph saved)

511
512
513 *nbreg weighted
514         estimates clear

515         nbreg exit_agri_new c.prop_affected_all##ib(2013).taxyear gender_fill age_q*
  >  i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L.firm_siz
  > e_year)
  note: age_q5 omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -391190.73
  Iteration 1:   log pseudolikelihood = -363449.97
  Iteration 2:   log pseudolikelihood = -363312.73
  Iteration 3:   log pseudolikelihood =  -363312.7

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -266221.39
  Iteration 1:   log pseudolikelihood = -261411.97
  Iteration 2:   log pseudolikelihood = -261386.87
  Iteration 3:   log pseudolikelihood = -261386.87

  Fitting full model:

  Iteration 0:   log pseudolikelihood =  -254966.8
  Iteration 1:   log pseudolikelihood = -253231.52
  Iteration 2:   log pseudolikelihood = -251063.53
  Iteration 3:   log pseudolikelihood = -251033.43
  Iteration 4:   log pseudolikelihood = -251033.41

  Negative binomial regression                    Number of obs     =      3,326
                                                  Wald chi2(23)     =     587.37
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -251033.41               Pseudo R2         =     0.0396
```

(Std. Err. adjusted for **1,012** clusters in ta
> xrefno)

exit_agri_new	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. In
> terval]					
prop_affected_all	.5081379	.1465607	3.47	0.001	.2208842	.
> 7953916					
taxyear					
2012	-.0656883	.0802055	-0.82	0.413	-.2228882	.
> 0915116					
2014	-.0694718	.135635	-0.51	0.609	-.3353115	.
> 1963679					
2015	.0724559	.2954535	0.25	0.806	-.5066223	.
> 6515341					
2016	-.3600101	.1589654	-2.26	0.024	-.6715765	-.
> 0484438					
taxyear#c.prop_affected_all					
2012	.0729797	.123013	0.59	0.553	-.1681215	.
> 3140808					
2014	.1560308	.1721236	0.91	0.365	-.1813252	.
> 4933868					
2015	-.4285555	.3637313	-1.18	0.239	-1.141456	.
> 2843447					
2016	.1832119	.2246447	0.82	0.415	-.2570837	.
> 6235075					
gender_fill	.15958	.1768154	0.90	0.367	-.1869717	.
> 5061317					
age_q1	2.365696	.470123	5.03	0.000	1.444272
> 3.28712					
age_q2	1.480463	.3335004	4.44	0.000	.8268139	2
> .134111					
age_q3	.7763734	.3339677	2.32	0.020	.1218087	1
> .430938					
age_q4	.4185363	.2768504	1.51	0.131	-.1240805
> .961153					
age_q5	0	(omitted)			
mode_prov_num					
Free State	.0528661	.146248	0.36	0.718	-.2337746	.
> 3395069					
Gauteng	.3021711	.1685622	1.79	0.073	-.0282048	.
> 6325471					
KwaZulu-Natal	.2859341	.1449606	1.97	0.049	.0018166	.
> 5700517					
Limpopo	.4644262	.1458299	3.18	0.001	.1786048	.
> 7502476					
Mpumalanga	.1330935	.1501883	0.89	0.376	-.1612701
> .427457					
North West	-.0212401	.175642	-0.12	0.904	-.365492	.
> 3230119					
Northern Cape	.0785655	.2307659	0.34	0.734	-.3737274	.
> 5308583					
Western Cape	-.0959506	.1404669	-0.68	0.495	-.3712607	.
> 1793595					
rainfall	-.0004004	.0002897	-1.38	0.167	-.0009682	.
> 0001675					
_cons	-2.941002	.3036259	-9.69	0.000	-3.536098	-2
> .345906					
ln(L.firm_size_year_non_~l)	1	(exposure)			
/lnalpha	-1.073894	.1842604			-1.435038	-.
> 7127505					

```
                    alpha |   .3416754   .0629572                      .2381063    .
> 4902938
------------------------------------------------------------------------------
```

```
516                 estimates store reg6

517         summ prop_affected_all if taxyear==2013 & e(sample)==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
prop_affe~ll |        802    .7120041    .3454603          0          1

518         estout reg* using "nb_exit_w_Non_CIT_Non_survivor.xls", replace  cells(b(sta
> r fmt(3)) se(par)) stats(r2_p N ,fmt(3 0 0 0) label ("Pseudo R-squared" "N" )) nobas
> elevels varlabels(_cons Constant) starlevels(* 0.1 ** 0.05 *** 0.01)
(file nb_exit_w_Non_CIT_Non_survivor.xls not found)
(output written to nb_exit_w_Non_CIT_Non_survivor.xls)

519
520 * coef plot - full model with dynamic offset variable
521         coefplot reg6, vertical keep(2012.taxyear#c.prop_affected_all 2013.taxyear#c
> .prop_affected_all 2014.taxyear#c.prop_affected_all 2015.taxyear#c.prop_affected_all
>  2016.taxyear#c.prop_affected_all 2017.taxyear#c.prop_affected_all) coeflabels(2012.
> taxyear#c.prop_affected_all = "-2" ///
>         2013.taxyear#c.prop_affected_all = "-1"  2014.taxyear#c.prop_affected_all =
> "0" 2015.taxyear#c.prop_affected_all = "1" ///
>         2016.taxyear#c.prop_affected_all = "2"  2017.taxyear#c.prop_affected_all = "
> 3" , wrap(2)) ///
>         baselevels omitted nolabel xtitle(Event time) ///
>         /*ytitle(Entry)*/ /*scheme(plotplain)*/ msymbol(O) title("") mcolor(gs1) yli
> ne(0, lcolor("gs10") lpattern(dash)) ciopts(lcolor("gs1")) graphregion(fcolor(white)
> ) fcolor(white) lcolor(white) xscale(lcolor("gs1")) yscale(lcolor("gs1")) xlabel(, l
> abcolor("gs1") noticks) ylabel(, labcolor("gs1")  grid glcolor(gs10) glwidth(vvthin)
>  noticks)

522
523         graph export "nb_exit_w_Non_CIT_Non_survivor.png", replace
(file nb_exit_w_Non_CIT_Non_survivor.png not found)
file nb_exit_w_Non_CIT_Non_survivor.png saved as PNG format

524         graph save "nb_exit_w_Non_CIT_Non_survivor.gph", replace
(file nb_exit_w_Non_CIT_Non_survivor.gph not found)
(file nb_exit_w_Non_CIT_Non_survivor.gph saved)

525
526         restore

527
528         log close
       name:  <unnamed>
        log:  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\data
> sets for Marlies\Analysis using Marlies code and Michael's samples\Non Seasonal\non_
> seasonal_firm_level_entry_exit_analysis.smcl
   log type:  smcl
  closed on:  29 Jan 2024, 14:49:51
```