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\Seasonal\seasonal
> _firm_level_entry_exit_analysis.smcl
  log type:  smcl
 opened on:  29 Jan 2024, 15:36:32

1 .         cd "Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\dat
> asets for Marlies\Analysis using Marlies code and Michael's samples\Seasonal"
Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
> ies\Analysis using Marlies code and Michael's samples\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                        34,807
        from master                    24,014  (merge_CIT==1)
        from using                     10,793  (merge_CIT==2)

    matched                             8,119  (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
(9,440 real changes made)

17.
18.         gen survivor=0

19.         replace survivor=1 if years_alive==7
(14,147 real changes made)
```

```
20.         replace survivor=1 if firm_year_entry==2012 & years_alive==6
  (2,430 real changes made)

21.
22.         tab years_alive merge_CIT
```

years_alive	merge_CIT: master on	using onl	matched (	Total
1	**1,587**	**842**	**135**	**2,564**
2	**2,280**	**1,209**	**273**	**3,762**
3	**2,658**	**1,442**	**508**	**4,608**
4	**2,988**	**1,367**	**501**	**4,856**
5	**3,398**	**1,595**	**832**	**5,825**
6	**4,021**	**1,861**	**1,282**	**7,164**
7	**7,082**	**2,477**	**4,588**	**14,147**
Total	**24,014**	**10,793**	**8,119**	**42,926**

```
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	**51,044**	
from master	**50,936**	(_merge==1)
from using	**108**	(_merge==2)
matched	**30,089**	(_merge==3)

```
32.
33.
34.         gen mode_prov_num=1 if mode_prov=="Eastern Cape"
  (78,148 missing values generated)

35.         replace mode_prov_num=2 if mode_prov=="Free State"
  (2,655 real changes made)

36.         replace mode_prov_num=3 if mode_prov=="Gauteng"
  (2,148 real changes made)

37.         replace mode_prov_num=4 if mode_prov=="KwaZulu-Natal"
  (5,333 real changes made)

38.         replace mode_prov_num=5 if mode_prov=="Limpopo"
  (1,650 real changes made)
```

```
39.         replace mode_prov_num=6 if mode_prov=="Mpumalanga"
  (2,747 real changes made)

40.         replace mode_prov_num=7 if mode_prov=="North West"
  (1,194 real changes made)

41.         replace mode_prov_num=8 if mode_prov=="Northern Cape"
  (1,791 real changes made)

42.         replace mode_prov_num=9 if mode_prov=="Western Cape"
  (9,694 real changes made)

43.
44.         tab mode_prov_num
```

mode_prov_num	Freq.	Percent	Cum.
1	**2,985**	**9.89**	**9.89**
2	**2,655**	**8.79**	**18.68**
3	**2,148**	**7.11**	**25.79**
4	**5,333**	**17.66**	**43.45**
5	**1,650**	**5.46**	**48.92**
6	**2,747**	**9.10**	**58.01**
7	**1,194**	**3.95**	**61.97**
8	**1,791**	**5.93**	**67.90**
9	**9,694**	**32.10**	**100.00**
Total	**30,197**	**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	**2,985**	**9.89**	**9.89**
Free State	**2,655**	**8.79**	**18.68**
Gauteng	**2,148**	**7.11**	**25.79**
KwaZulu-Natal	**5,333**	**17.66**	**43.45**
Limpopo	**1,650**	**5.46**	**48.92**
Mpumalanga	**2,747**	**9.10**	**58.01**
North West	**1,194**	**3.95**	**61.97**
Northern Cape	**1,791**	**5.93**	**67.90**
Western Cape	**9,694**	**32.10**	**100.00**
Total	**30,197**	**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%	**.0810565**	**.0076923**		
5%	**.0963801**	**.0076923**		
10%	**.1483517**	**.0083333**	Obs	**32,133**
25%	**.2023077**	**.0113208**	Sum of wgt.	**32,133**

```
  50%      .2710317                      Mean           .2822169
                        Largest         Std. dev.      .1104753
  75%      .3541667             .5
  90%      .4416667             .5       Variance       .0122048
  95%            .5             .5       Skewness       .2199781
  99%            .5             .5       Kurtosis       2.408125

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
  (76,451 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~2)
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	86715
2012	115455	93385
2013	116435	107281
2014	102336	93283
2015	118265	100803
2016	117400	101941
2017	121239	0
2018	0	0
2019	0	0

```
73.
74.         replace entry_agri=. if taxyear==2011 // first year of panel, thus all enter
  > ed 2011
  (3,937 real changes made, 3,937 to missing)

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

The year of assessment.	sum(entry_~l)	sum(exit_a~2)
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**	**86715**
2012	**115455**	**93385**
2013	**116435**	**107281**
2014	**102336**	**93283**
2015	**118265**	**100803**
2016	**117400**	**101941**
2017	**121239**	**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=.
  (81,133 missing values generated)

81.         replace exit_agri_new= L.exit_agri2 if fid==L.fid
  (27,089 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	**115455**	**86715**
2013	**116435**	**93385**
2014	**102336**	**107281**
2015	**118265**	**93283**
2016	**117400**	**100803**

2017	**121239**	**101941**
2018	**0**	**0**
2019	**0**	**0**

```
84.
85.         gen post=0 if taxyear<2014
  (46,318 missing values generated)

86.         replace post=1 if taxyear>2013
  (46,318 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**	**0.06**
2006	**9**	**0.01**	**0.07**
2007	**9**	**0.01**	**0.08**
2008	**9**	**0.01**	**0.09**
2009	**9**	**0.01**	**0.10**
2010	**9**	**0.01**	**0.11**
2011	**11,575**	**14.27**	**14.38**
2012	**11,575**	**14.27**	**28.64**
2013	**11,575**	**14.27**	**42.91**
2014	**11,575**	**14.27**	**57.18**
2015	**11,575**	**14.27**	**71.44**
2016	**11,575**	**14.27**	**85.71**
2017	**11,575**	**14.27**	**99.98**
2018	**9**	**0.01**	**99.99**
2019	**9**	**0.01**	**100.00**
Total	**81,133**	**100.00**	

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

The year of assessment.	Freq.	Percent	Cum.
2011	**3,937**	**12.25**	**12.25**
2012	**4,210**	**13.10**	**25.35**
2013	**4,533**	**14.11**	**39.46**
2014	**4,682**	**14.57**	**54.03**
2015	**4,810**	**14.97**	**69.00**
2016	**4,917**	**15.30**	**84.30**
2017	**5,044**	**15.70**	**100.00**
Total	**32,133**	**100.00**	

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

The year of assessment.	Freq.	Percent	Cum.
2012	**645**	**13.01**	**13.01**
2013	**773**	**15.59**	**28.61**
2014	**880**	**17.75**	**46.36**
2015	**849**	**17.13**	**63.49**
2016	**917**	**18.50**	**81.99**
2017	**893**	**18.01**	**100.00**
Total	**4,957**	**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	**619**	**14.90**	**14.90**
2013	**663**	**15.96**	**30.87**
2014	**637**	**15.34**	**46.21**
2015	**717**	**17.26**	**63.47**
2016	**754**	**18.16**	**81.63**
2017	**763**	**18.37**	**100.00**
Total	**4,153**	**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\Seasonal\
  > 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\Seasonal\CIT Sur
  > vivors"
  Z:\Workbenches\epadmin\michael_kilumelume\2024 projects\minimum wage\datasets for Marl
  > ies\Analysis using Marlies code and Michael's samples\Seasonal\CIT Survivors
```

```
115         preserve

116         keep if merge_CIT==3 & survivor==1 // CIT survivors
  (76,017 observations deleted)

117
118 * nbreg unweighted
119
120         estimates clear

121         nbreg count_agri c.prop_affected_all##ib(2013).taxyear  gender_fill prop_age
  > _cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -67375.336
  Iteration 1:   log pseudolikelihood = -66674.581
  Iteration 2:   log pseudolikelihood = -66672.259
  Iteration 3:   log pseudolikelihood = -66672.259

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -14671.782
  Iteration 1:   log pseudolikelihood = -14414.247
  Iteration 2:   log pseudolikelihood = -14372.937
  Iteration 3:   log pseudolikelihood = -14372.828
  Iteration 4:   log pseudolikelihood = -14372.828

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -14346.957
  Iteration 1:   log pseudolikelihood = -14216.206
  Iteration 2:   log pseudolikelihood =   -14199.9
  Iteration 3:   log pseudolikelihood = -14199.871
  Iteration 4:   log pseudolikelihood = -14199.871

  Negative binomial regression                    Number of obs     =      3,172
                                                  Wald chi2(25)     =      53.09
  Dispersion           = mean                     Prob > chi2       =     0.0009
  Log pseudolikelihood = -14199.871               Pseudo R2         =     0.0120

                                                (Std. Err. adjusted for 875 clusters in t
  > axrefno)
  ------------------------------------------------------------------------------
  ------------
                  |               Robust
            count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
  > nterval]
  ------------------------------------------------------------------------------
  ------------
       prop_affected_all |   .6992926   .3009811     2.32   0.020     .1093805
  > 1.289205
                  |
                taxyear |
                    2012  |   1.313147   .4910249     2.67   0.007     .3507564
  > 2.275539
                    2014  |   .2717824   .2025694     1.34   0.180    -.1252463
  >  .668811
                    2015  |   .3731226   .2304258     1.62   0.105    -.0785037
  > .8247488
                    2016  |   .0994987   .1889881     0.53   0.599    -.2709112
  > .4699087
                    2017  |   .0091179   .1769885     0.05   0.959    -.3377732
  >  .356009
                  |
   taxyear#c.prop_affected_all |
                    2012  |  -1.69018   .6107492    -2.77   0.006    -2.887227   -
  > .4931341
                    2014  |  -.7701669   .3422619    -2.25   0.024    -1.440988   -
  > .0993458
                    2015  |  -.7353768    .342039    -2.15   0.032    -1.405761   -
```

```
> .0649927
                        2016 |  -.3575319    .364527    -0.98   0.327    -1.071992
> .3569279
                        2017 |  -.2590923    .322171    -0.80   0.421    -.8905359
> .3723513
                             |
                 gender_fill |  -.4209919   .1286792    -3.27   0.001    -.6731985   -
> .1687853
prop_age_cat_1_seasonal_fill |   .1632227    .169248     0.96   0.335    -.1684972
> .4949426
prop_age_cat_2_seasonal_fill |  -.1542405   .1717625    -0.90   0.369    -.4908887
> .1824078
prop_age_cat_3_seasonal_fill |  -.0927236   .1922256    -0.48   0.630    -.4694789
> .2840317
prop_age_cat_4_seasonal_fill |  -.2915748   .1738524    -1.68   0.094    -.6323194
> .0491697
prop_age_cat_5_seasonal_fill |          0  (omitted)
                             |
              mode_prov_num |
                Free State |  -.4115752   .3380807    -1.22   0.223    -1.074201
> .2510507
                   Gauteng |  -.4367568   .3602155    -1.21   0.225    -1.142766
> .2692526
              KwaZulu-Natal |  -.6066927   .3653767    -1.66   0.097    -1.322818
> .1094324
                   Limpopo |  -.4700722   .3705086    -1.27   0.205    -1.196256
> .2561114
                 Mpumalanga |   -.509369    .373459    -1.36   0.173    -1.241335
> .2225971
                 North West |   -.346921   .3612891    -0.96   0.337    -1.055035
> .3611926
              Northern Cape |  -.1493338   .4143809    -0.36   0.719    -.9615055
> .6628379
               Western Cape |  -.2743289   .3655002    -0.75   0.453    -.9906961
> .4420383
                             |
                   rainfall |   .0001024   .0003093     0.33   0.741    -.0005038
> .0007087
                      _cons |   .6310496   .4684703     1.35   0.178    -.2871353
> 1.549234
ln(L.firm_size_year_seaso~l) |          1  (exposure)
-----------------------------+-------------------------------------------------
  --------
                  /lnalpha |  -.2994015   .0955352                      -.486647
> -.112156
-----------------------------+-------------------------------------------------
  --------
                     alpha |   .7412617   .0708166                       .614684
> .8939048
-----------------------------+-------------------------------------------------
  --------
```

```
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	514	.7365402	.322513	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 prop_age
  > _cat_* i.mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.f
  > irm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -43737589
  Iteration 1:   log pseudolikelihood =  -42938557
  Iteration 2:   log pseudolikelihood =  -42935901
  Iteration 3:   log pseudolikelihood =  -42935901

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -3017531.5
  Iteration 1:   log pseudolikelihood =   -2890480
  Iteration 2:   log pseudolikelihood = -2871067.4
  Iteration 3:   log pseudolikelihood =   -2871030
  Iteration 4:   log pseudolikelihood =   -2871030

  Fitting full model:

  Iteration 0:   log pseudolikelihood =   -2871030
  Iteration 1:   log pseudolikelihood = -2803000.1
  Iteration 2:   log pseudolikelihood = -2785239.7
  Iteration 3:   log pseudolikelihood = -2784563.8
  Iteration 4:   log pseudolikelihood = -2784561.9
  Iteration 5:   log pseudolikelihood = -2784561.9

  Negative binomial regression                    Number of obs     =      3,172
                                                  Wald chi2(25)     =      72.03
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -2784561.9               Pseudo R2         =     0.0301
```

(Std. Err. adjusted for **875** clusters in t
> axrefno)

| count_agri | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. I
> nterval] |
|---|---|---|---|---|---|
| prop_affected_all | **1.278858** | **.5092357** | **2.51** | **0.012** | **.280774**
> **2.276941** |
| taxyear | | | | | |
| 2012 | **2.537399** | **.8846391** | **2.87** | **0.004** | **.8035385**
> **4.27126** |
| 2014 | **.0872078** | **.2329868** | **0.37** | **0.708** | **-.3694379**
> **.5438536** |
| 2015 | **.7971553** | **.5183799** | **1.54** | **0.124** | **-.2188507**
> **1.813161** |
| 2016 | **.3488717** | **.3366225** | **1.04** | **0.300** | **-.3108962**
> **1.00864** |
| 2017 | **.077207** | **.2258397** | **0.34** | **0.732** | **-.3654306**
> **.5198446** |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | **-2.676663** | **1.231708** | **-2.17** | **0.030** | **-5.090767** | **-**
> **.2625592** |
| 2014 | **-.9293364** | **.5179769** | **-1.79** | **0.073** | **-1.944552**
> **.0858796** |
| 2015 | **-1.356228** | **.7121358** | **-1.90** | **0.057** | **-2.751989**
> **.0395323** |
| 2016 | **-.2883476** | **.8948782** | **-0.32** | **0.747** | **-2.042277**
> **1.465581** |
| 2017 | **-.5095728** | **.5367449** | **-0.95** | **0.342** | **-1.561573**
> **.5424279** |
| gender_fill | **-.9033684** | **.3480293** | **-2.60** | **0.009** | **-1.585493** | **-**
> **.2212435** |
| prop_age_cat_1_seasonal_fill | **-1.435846** | **.6749357** | **-2.13** | **0.033** | **-2.758696** | **-**
> **.1129966** |
| prop_age_cat_2_seasonal_fill | **-1.971023** | **.7865453** | **-2.51** | **0.012** | **-3.512623** | **-**
> **.4294224** |
| prop_age_cat_3_seasonal_fill | **-1.108905** | **1.031731** | **-1.07** | **0.282** | **-3.131059**
> **.9132502** |
| prop_age_cat_4_seasonal_fill | **-2.907792** | **1.031092** | **-2.82** | **0.005** | **-4.928694**
> **-.886889** |
| prop_age_cat_5_seasonal_fill | **0** | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | **-.9456953** | **.5542817** | **-1.71** | **0.088** | **-2.032068**
> **.140677** |
| Gauteng | **-.7782106** | **.6029846** | **-1.29** | **0.197** | **-1.960039**
> **.4036174** |
| KwaZulu-Natal | **-1.750552** | **.6084125** | **-2.88** | **0.004** | **-2.943019** | **-**
> **.5580856** |
| Limpopo | **-1.057954** | **.5694978** | **-1.86** | **0.063** | **-2.174149**
> **.0582411** |
| Mpumalanga | **-1.434994** | **.5769722** | **-2.49** | **0.013** | **-2.565839**
> **-.304149** |
| North West | **-1.054418** | **.547738** | **-1.93** | **0.054** | **-2.127965**
> **.0191283** |
| Northern Cape | **-.1810212** | **.629196** | **-0.29** | **0.774** | **-1.414223**
> **1.05218** |
| Western Cape | **-.8042624** | **.5427424** | **-1.48** | **0.138** | **-1.868018**
> **.2594932** |
| rainfall | **.0007311** | **.0006063** | **1.21** | **0.228** | **-.0004572**
> **.0019194** |
| _cons | **2.179971** | **.8225584** | **2.65** | **0.008** | **.5677859**
> **3.792155** |
| ln(L.firm_size_year_seaso~l) | **1** | (exposure) | | | |

```
------------------------------------------------------------------------------
             /lnalpha |  -.1501018   .1523202                      -.4486439
> .1484402
-------------------------------------------------------------------------------
             /lnalpha |  -.1501018   .1523202                      -.4486439
> .1484402
-------------------------------------------------------------------------------
               alpha |   .8606203   .1310898                       .6384935
> 1.160023
------------------------------------------------------------------------------
```

```
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 |        514    .7365402     .322513          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 prop_age
> _cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -18051.045
  Iteration 1:   log pseudolikelihood = -17680.904
  Iteration 2:   log pseudolikelihood = -17679.588
  Iteration 3:   log pseudolikelihood = -17679.588

  Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -13879.822
Iteration 1:   log pseudolikelihood = -12708.959
Iteration 2:   log pseudolikelihood = -12565.307
Iteration 3:   log pseudolikelihood = -12559.217
Iteration 4:   log pseudolikelihood = -12559.217

Fitting full model:

Iteration 0:   log pseudolikelihood = -12316.719
Iteration 1:   log pseudolikelihood = -12204.094
Iteration 2:   log pseudolikelihood = -12136.124
Iteration 3:   log pseudolikelihood = -12135.784
Iteration 4:   log pseudolikelihood = -12135.784

Negative binomial regression                    Number of obs     =      4,145
                                                Wald chi2(25)     =     530.07
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -12135.784               Pseudo R2         =     0.0337

                                              (Std. Err. adjusted for 1,028 clusters in t
> axrefno)
------------------------------------------------------------------------------
             |               Robust
entry_agri_~l|      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
> nterval]
-------------+----------------------------------------------------------------
prop_affect~l|   .5417206   .0786122     6.89   0.000     .3876435
> .6957977
             |
      taxyear|
        2012 |   .3252598   .0795066     4.09   0.000     .1694297
> .4810899
        2014 |   .0114359   .0808497     0.14   0.888    -.1470266
> .1698984
        2015 |   .2261674   .0841811     2.69   0.007     .0611754
> .3911594
        2016 |   .1495588   .0869069     1.72   0.085    -.0207756
> .3198933
        2017 |   .1716243   .0822189     2.09   0.037     .0104782
> .3327705
             |
taxyear#c.pr~l|
        2012 |  -.3075181   .0932342    -3.30   0.001    -.4902537   -
> .1247824
        2014 |  -.1144788   .0935009    -1.22   0.221    -.2977373
> .0687796
        2015 |  -.3341978   .0985052    -3.39   0.001    -.5272645
> -.141131
        2016 |  -.2792484   .1018833    -2.74   0.006    -.4789359   -
> .0795608
        2017 |  -.3107774    .095682    -3.25   0.001    -.4983108
> -.123244
             |
  gender_fill|   .0421962   .0380548     1.11   0.268    -.0323899
> .1167824
prop_age_cat~l|   1.226534   .0909143    13.49   0.000     1.048345
> 1.404723
prop_age_cat~l|   .7585792   .0910014     8.34   0.000     .5802197
> .9369387
prop_age_cat~l|   .6115983   .0982616     6.22   0.000     .4190091
> .8041876
prop_age_cat~l|   .3712759   .0958438     3.87   0.000     .1834254
> .5591263
prop_age_cat~l|          0  (omitted)
             |
 mode_prov_num|
  Free State |   .1284283   .0598855     2.14   0.032     .0110549
> .2458017
     Gauteng |   .2294272   .0492963     4.65   0.000     .1328083
> .3260462
```

```
                KwaZulu-Natal |   .1206396   .0476031     2.53   0.011     .0273393
>   .21394
                      Limpopo |   .2225291   .0531455     4.19   0.000     .1183658
> .3266924
                    Mpumalanga |   .0507743   .0521697     0.97   0.330    -.0514764
>  .153025
                    North West |   .1407116   .0613291     2.29   0.022     .0205089
> .2609144
                Northern Cape |    .043667   .0631034     0.69   0.489    -.0800135
> .1673474
                 Western Cape |  -.1278573   .0485001    -2.64   0.008    -.2229156   -
> .0327989
                              |
                      rainfall |  -.0000227   .0000614    -0.37   0.712    -.0001431
> .0000977
                         _cons |  -1.718262   .1159469   -14.82   0.000    -1.945514
> -1.49101
ln(firm_size_year_seasona~l) |          1  (exposure)
-----------------------------+------------------------------------------------------
                      /lnalpha |  -2.304659   .0657257                      -2.433479   -
> 2.175839
-----------------------------+------------------------------------------------------
                         alpha |   .0997928    .006559                       .0877311
> .1135129
------------------------------------------------------------------------------
```

```
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 |        750    .7445987    .3258671          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  prop_ag
  > e_cat_* i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(fir
  > m_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -6161070.9
  Iteration 1:   log pseudolikelihood = -5464082.3
  Iteration 2:   log pseudolikelihood =   -5460907
  Iteration 3:   log pseudolikelihood = -5460905.5
  Iteration 4:   log pseudolikelihood = -5460905.5

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -2748588.8
  Iteration 1:   log pseudolikelihood = -2504464.8
  Iteration 2:   log pseudolikelihood = -2492156.5
  Iteration 3:   log pseudolikelihood = -2482301.6
  Iteration 4:   log pseudolikelihood = -2482257.7
  Iteration 5:   log pseudolikelihood = -2482257.7

  Fitting full model:

  Iteration 0:   log pseudolikelihood =   -2438035
  Iteration 1:   log pseudolikelihood = -2379414.9
  Iteration 2:   log pseudolikelihood = -2377070.3
  Iteration 3:   log pseudolikelihood = -2377069.4
  Iteration 4:   log pseudolikelihood = -2377069.4

  Negative binomial regression                    Number of obs     =      4,145
                                                  Wald chi2(25)     =     439.93
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -2377069.4               Pseudo R2         =     0.0424

                                        (Std. Err. adjusted for 1,028 clusters in t
  > axrefno)
  ------------------------------------------------------------------------------
    ________
                         |               Robust
          entry_agri_seasonal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
  > nterval]
  -------------------------+----------------------------------------------------------
    ________
            prop_affected_all |   .3077986   .1086802     2.83   0.005     .0947893
  >  .520808
                         |
                      taxyear |
                         2012 |   .2502147   .1263389     1.98   0.048      .002595
  > .4978343
                         2014 |  -.1053037   .0928744    -1.13   0.257    -.2873341
  > .0767267
                         2015 |   -.005197   .1061013    -0.05   0.961    -.2131518
  > .2027578
                         2016 |  -.0178881   .1110936    -0.16   0.872    -.2356275
  > .1998513
                         2017 |  -.1120882   .0913409    -1.23   0.220    -.2911132
  > .0669367
                         |
   taxyear#c.prop_affected_all |
                         2012 |  -.2464893   .1501374    -1.64   0.101    -.5407532
  > .0477747
                         2014 |   .0037619   .1147704     0.03   0.974    -.2211839
```

	2015	-.0630128	.1253456	-0.50	0.615	-.3086856 .2287076
	2016	-.0976879	.1457877	-0.67	0.503	-.3834265 .1826599
	2017	-.0126815	.1132778	-0.11	0.911	-.234702 .1880507
	gender_fill	-.3819936	.1410397	-2.71	0.007	-.6584263 -.105561
prop_age_cat_1_seasonal_fill		2.226131	.2094817	10.63	0.000	1.815554 2.636707
prop_age_cat_2_seasonal_fill		.8922123	.313983	2.84	0.004	.2768169 1.507608
prop_age_cat_3_seasonal_fill		1.092538	.3300579	3.31	0.001	.4456364 1.73944
prop_age_cat_4_seasonal_fill		.6241777	.4148482	1.50	0.132	-.1889099 1.437265
prop_age_cat_5_seasonal_fill		0	(omitted)			
	mode_prov_num Free State	.0352	.1220963	0.29	0.773	-.2041044 .2745045
	Gauteng	.2461706	.0685747	3.59	0.000	.1117666 .3805747
	KwaZulu-Natal	.0549315	.0926158	0.59	0.553	-.1265921 .2364552
	Limpopo	.2845774	.0678953	4.19	0.000	.1515051 .4176497
	Mpumalanga	-.0086983	.0665618	-0.13	0.896	-.139157 .1217605
	North West	.1890719	.069698	2.71	0.007	.0524664 .3256774
	Northern Cape	-.0328198	.069317	-0.47	0.636	-.1686786 .103039
	Western Cape	-.202558	.0714851	-2.83	0.005	-.3426664 -.0624497
	rainfall	-.0000629	.0000843	-0.75	0.456	-.0002281 .0001023
	_cons	-1.728261	.2715087	-6.37	0.000	-2.260408 -1.196113
ln(firm_size_year_seasona~l)		1	(exposure)			
	/lnalpha	-2.673661	.0930973			-2.856128 -2.491193
	alpha	.0689992	.0064236			.0574909 .0828111

```
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	750	.7445987	.3258671	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 prop_a
  > ge_cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -13519.84
  Iteration 1:   log pseudolikelihood = -13419.655
  Iteration 2:   log pseudolikelihood = -13419.467
  Iteration 3:   log pseudolikelihood = -13419.467

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -10730.821
  Iteration 1:   log pseudolikelihood = -9780.0717
  Iteration 2:   log pseudolikelihood = -9605.5916
  Iteration 3:   log pseudolikelihood = -9588.4352
  Iteration 4:   log pseudolikelihood = -9588.4124
  Iteration 5:   log pseudolikelihood = -9588.4124

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -9471.7705
  Iteration 1:   log pseudolikelihood = -9379.3941
  Iteration 2:   log pseudolikelihood = -9364.1737
  Iteration 3:   log pseudolikelihood = -9364.1601
  Iteration 4:   log pseudolikelihood = -9364.1601
```

Negative binomial regression — Number of obs = **3,172**
Wald chi2(**25**) = **267.55**
Dispersion = **mean** — Prob > chi2 = **0.0000**
Log pseudolikelihood = **-9364.1601** — Pseudo R2 = **0.0234**

(Std. Err. adjusted for **875** clusters in t
> axrefno)

| exit_agri_new | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. I
> nterval] |
|---|---|---|---|---|---|
| prop_affected_all | **.3857283** | **.0763963** | **5.05** | **0.000** | **.2359942**
> **.5354623** |
| taxyear | | | | | |
| 2012 | **.1025571** | **.0929648** | **1.10** | **0.270** | **-.0796505**
> **.2847647** |
| 2014 | **-.0765244** | **.0737372** | **-1.04** | **0.299** | **-.2210466**
> **.0679978** |
| 2015 | **-.0711544** | **.0742003** | **-0.96** | **0.338** | **-.2165844**
> **.0742756** |
| 2016 | **-.0219707** | **.0810771** | **-0.27** | **0.786** | **-.1808788**
> **.1369374** |
| 2017 | **.0487388** | **.074836** | **0.65** | **0.515** | **-.0979371**
> **.1954147** |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | **-.1068948** | **.1097174** | **-0.97** | **0.330** | **-.3219369**
> **.1081473** |
| 2014 | **.1780781** | **.0877308** | **2.03** | **0.042** | **.006129**
> **.3500272** |
| 2015 | **.0541932** | **.0889192** | **0.61** | **0.542** | **-.1200852**
> **.2284716** |
| 2016 | **-.0229579** | **.0970178** | **-0.24** | **0.813** | **-.2131093**
> **.1671935** |
| 2017 | **-.1113639** | **.0910333** | **-1.22** | **0.221** | **-.289786**
> **.0670582** |
| gender_fill | **.1043828** | **.0424804** | **2.46** | **0.014** | **.0211227**
> **.1876429** |
| prop_age_cat_1_seasonal_fill | **.1701433** | **.0979105** | **1.74** | **0.082** | **-.0217577**
> **.3620443** |
| prop_age_cat_2_seasonal_fill | **.2861483** | **.0980762** | **2.92** | **0.004** | **.0939226**
> **.4783741** |
| prop_age_cat_3_seasonal_fill | **.2856191** | **.1015435** | **2.81** | **0.005** | **.0865976**
> **.4846406** |
| prop_age_cat_4_seasonal_fill | **.1880987** | **.1070531** | **1.76** | **0.079** | **-.0217215**
> **.3979189** |
| prop_age_cat_5_seasonal_fill | **0** | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | **.0390197** | **.0680527** | **0.57** | **0.566** | **-.0943612**
> **.1724006** |
| Gauteng | **.2007418** | **.0515788** | **3.89** | **0.000** | **.0996492**
> **.3018343** |
| KwaZulu-Natal | **.1165895** | **.0475449** | **2.45** | **0.014** | **.0234033**
> **.2097758** |
| Limpopo | **.199744** | **.0528767** | **3.78** | **0.000** | **.0961077**
> **.3033804** |
| Mpumalanga | **.071353** | **.0569159** | **1.25** | **0.210** | **-.0402001**
> **.1829061** |
| North West | **.1198361** | **.0552728** | **2.17** | **0.030** | **.0115033**
> **.2281689** |
| Northern Cape | **.0789978** | **.0673452** | **1.17** | **0.241** | **-.0529964**
> **.210992** |
| Western Cape | **-.1107079** | **.0477326** | **-2.32** | **0.020** | **-.2042621** -
> **.0171537** |
| rainfall | **-.0000143** | **.0000661** | **-0.22** | **0.829** | **-.0001439** |

```
> .0001153
                       _cons |  -1.350156   .1116455   -12.09   0.000    -1.568977   -
> 1.131335
ln(L.firm_size_year_seaso~l) |          1  (exposure)
-------------------------------------------------------------------------------
  --------
                    /lnalpha |  -2.278026   .0678971                     -2.411102
> -2.14495
-------------------------------------------------------------------------------
  --------
                       alpha |   .1024863   .0069585                      .0897164
> .1170739
-------------------------------------------------------------------------------
  --------

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 |        514    .7365402     .322513          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)
  (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 saved as PNG format

193         graph save "nb_exit_uw_CIT_Survivor.gph", replace
  (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 prop_
  > age_cat_* i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L
  > .firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -3911470.3
  Iteration 1:   log pseudolikelihood =   -3712003
  Iteration 2:   log pseudolikelihood = -3711059.5
  Iteration 3:   log pseudolikelihood = -3711059.1

  Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -2211045.1
Iteration 1:   log pseudolikelihood = -1992312.7
Iteration 2:   log pseudolikelihood = -1981501.5
Iteration 3:   log pseudolikelihood = -1973148.8
Iteration 4:   log pseudolikelihood = -1973110.3
Iteration 5:   log pseudolikelihood = -1973110.3

Fitting full model:

Iteration 0:   log pseudolikelihood = -1933862.5
Iteration 1:   log pseudolikelihood = -1896171.3
Iteration 2:   log pseudolikelihood = -1895856.8
Iteration 3:   log pseudolikelihood = -1895856.4
Iteration 4:   log pseudolikelihood = -1895856.4

Negative binomial regression                    Number of obs     =      3,172
                                                Wald chi2(25)     =     346.07
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -1895856.4               Pseudo R2         =     0.0392

                                                (Std. Err. adjusted for 875 clusters in t
> axrefno)
------------------------------------------------------------------------------
             |               Robust
exit_agri_new|      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
> nterval]
-------------+----------------------------------------------------------------
  prop_affected_all |   .3152956   .1105647     2.85   0.004     .0985928
> .5319985
                  |
                  taxyear |
                     2012 |   .1359549   .0971904     1.40   0.162    -.0545347
> .3264445
                     2014 |   .0866351   .1128089     0.77   0.442    -.1344662
> .3077364
                     2015 |  -.1505478   .0981298    -1.53   0.125    -.3428786
>  .041783
                     2016 |  -.0518405   .1061246    -0.49   0.625     -.259841
>   .15616
                     2017 |  -.1782792   .1013428    -1.76   0.079    -.3769074
> .0203489
                  |
 taxyear#c.prop_affected_all |
                     2012 |  -.1533132   .1179367    -1.30   0.194     -.384465
> .0778385
                     2014 |  -.0402148   .1272309    -0.32   0.752    -.2895827
> .2091531
                     2015 |   .1062906   .1117976     0.95   0.342    -.1128286
> .3254098
                     2016 |  -.0199572   .1188307    -0.17   0.867    -.2528611
> .2129467
                     2017 |   .0767122   .1189839     0.64   0.519     -.156492
> .3099163
                  |
                gender_fill |  -.3195343   .1240419    -2.58   0.010    -.5626519   -
> .0764167
prop_age_cat_1_seasonal_fill |   1.172556   .2352626     4.98   0.000     .7114501
> 1.633662
prop_age_cat_2_seasonal_fill |    .551134   .3473717     1.59   0.113     -.129702
>  1.23197
prop_age_cat_3_seasonal_fill |   .5737692   .3703029     1.55   0.121    -.1520112
> 1.299549
prop_age_cat_4_seasonal_fill |   .4704148   .3713477     1.27   0.205    -.2574133
> 1.198243
prop_age_cat_5_seasonal_fill |          0  (omitted)
                  |
               mode_prov_num |
                  Free State |  -.1073755   .1251782    -0.86   0.391    -.3527203
> .1379693
                     Gauteng |   .1909838   .0788891     2.42   0.015      .036364
```

```
> .3456036
             KwaZulu-Natal |   .0558989   .0783789     0.71   0.476    -.0977208
> .2095187
                   Limpopo |   .2897862   .0855686     3.39   0.001     .1220748
> .4574975
                Mpumalanga |    -.04292   .0746893    -0.57   0.566    -.1893083
> .1034683
                North West |   .2825818   .0714806     3.95   0.000     .1424824
> .4226811
             Northern Cape |   .0699282   .0788653     0.89   0.375     -.084645
> .2245013
              Western Cape |  -.1357088   .0774654    -1.75   0.080    -.2875382
> .0161206
                           |
                  rainfall |   .0001705   .0000928     1.84   0.066    -.0000114
> .0003523
                     _cons |  -1.631837   .2590536    -6.30   0.000    -2.139572   -
> 1.124101
ln(L.firm_size_year_seaso~l) |          1  (exposure)
-----------------------------+------------------------------------------------------
                    /lnalpha |  -2.763945   .1176795                      -2.994592   -
> 2.533297
-----------------------------+------------------------------------------------------
                       alpha |   .0630426   .0074188                       .050057
> .0793968
------------------------------------------------------------------------------
```

```
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 |        514    .7365402     .322513          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)
  (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 saved as PNG format

207         graph save "nb_exit_w_CIT_Survivor.gph", replace
  (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\Seasonal\
  > 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\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\Seasonal\Non CIT Survivors

218
219         preserve

220         keep if merge_CIT==1 & survivor==1
  (72,784 observations deleted)

221
222 * nbreg unweighted
223
224         estimates clear

225         nbreg count_agri c.prop_affected_all##ib(2013).taxyear gender_fill prop_age_
  > cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -85827.003
  Iteration 1:   log pseudolikelihood =  -82949.32
  Iteration 2:   log pseudolikelihood = -82943.578
  Iteration 3:   log pseudolikelihood = -82943.578

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -28705.945
  Iteration 1:   log pseudolikelihood = -27932.425
  Iteration 2:   log pseudolikelihood = -27811.611
  Iteration 3:   log pseudolikelihood = -27811.111
  Iteration 4:   log pseudolikelihood = -27811.111

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -27739.469
  Iteration 1:   log pseudolikelihood = -27546.534
  Iteration 2:   log pseudolikelihood = -27531.147
  Iteration 3:   log pseudolikelihood = -27531.099
  Iteration 4:   log pseudolikelihood = -27531.099

  Negative binomial regression                    Number of obs     =      6,032
                                                  Wald chi2(25)     =      69.46
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -27531.099               Pseudo R2         =     0.0101
```

(Std. Err. adjusted for **1,285** clusters in t
> axrefno)

| count_agri | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. I
> nterval] |
|---|---|---|---|---|---|
| prop_affected_all | **-.5860866** | **.5226548** | **-1.12** | **0.262** | **-1.610471**
> **.4382979** |
| taxyear | | | | | |
| 2012 | **-.4822253** | **.5321522** | **-0.91** | **0.365** | **-1.525224**
> **.5607737** |
| 2014 | **-.8833717** | **.5244066** | **-1.68** | **0.092** | **-1.91119**
> **.1444464** |
| 2015 | **-.5762917** | **.4891453** | **-1.18** | **0.239** | **-1.534999**
> **.3824154** |
| 2016 | **-.7985877** | **.4732139** | **-1.69** | **0.091** | **-1.72607**
> **.1288944** |
| 2017 | **-1.201891** | **.4576061** | **-2.63** | **0.009** | **-2.098782** -
> **.3049993** |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | **.4745955** | **.6016229** | **0.79** | **0.430** | **-.7045637**
> **1.653755** |
| 2014 | **.6926654** | **.610418** | **1.13** | **0.256** | **-.5037319**
> **1.889063** |
| 2015 | **.3515976** | **.5556286** | **0.63** | **0.527** | **-.7374145**
> **1.44061** |
| 2016 | **.3670788** | **.5314252** | **0.69** | **0.490** | **-.6744955**
> **1.408653** |
| 2017 | **1.107518** | **.5415981** | **2.04** | **0.041** | **.0460057**
> **2.169031** |
| gender_fill | **-.4043496** | **.1141014** | **-3.54** | **0.000** | **-.6279843**
> **-.180715** |
| prop_age_cat_1_seasonal_fill | **.2827872** | **.2029214** | **1.39** | **0.163** | **-.1149313**
> **.6805058** |
| prop_age_cat_2_seasonal_fill | **-.1073076** | **.1619644** | **-0.66** | **0.508** | **-.4247521**
> **.2101368** |
| prop_age_cat_3_seasonal_fill | **-.0836631** | **.1612452** | **-0.52** | **0.604** | **-.399698**
> **.2323718** |
| prop_age_cat_4_seasonal_fill | **.0303625** | **.17256** | **0.18** | **0.860** | **-.307849**
> **.3685739** |
| prop_age_cat_5_seasonal_fill | **0** | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | **.0030724** | **.1751363** | **0.02** | **0.986** | **-.3401885**
> **.3463332** |
| Gauteng | **-.3384025** | **.1352662** | **-2.50** | **0.012** | **-.6035194** -
> **.0732856** |
| KwaZulu-Natal | **-.271094** | **.1206712** | **-2.25** | **0.025** | **-.5076052** -
> **.0345827** |
| Limpopo | **-.0468248** | **.174174** | **-0.27** | **0.788** | **-.3881995**
> **.2945499** |
| Mpumalanga | **-.3765781** | **.1220763** | **-3.08** | **0.002** | **-.6158433** -
> **.1373129** |
| North West | **-.2397484** | **.1423619** | **-1.68** | **0.092** | **-.5187727**
> **.0392758** |
| Northern Cape | **.155013** | **.3044537** | **0.51** | **0.611** | **-.4417052**
> **.7517312** |
| Western Cape | **-.0868425** | **.1526279** | **-0.57** | **0.569** | **-.3859878**
> **.2123027** |
| rainfall | **-.0001597** | **.0002779** | **-0.57** | **0.565** | **-.0007044**
> **.0003849** |
| _cons | **1.670758** | **.5253591** | **3.18** | **0.001** | **.6410733**
> **2.700443** |
| ln(L.firm_size_year_seaso~l) | **1** | (exposure) | | | |

```
------------------------------------------------------------------------------
             /lnalpha |  -.1198091   .0840342                      -.2845132
> .044895
-------------------------+----------------------------------------------------
             alpha |   .8870898   .0745459                       .7523804
> 1.045918
------------------------------------------------------------------------------
```

```
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	**1,042**	**.7497234**	**.3397324**	**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)
(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 saved as PNG format

235         graph save "nb_empl_uw_NON_CIT_Survivor.gph", replace
  (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 prop_age_
> cat_* i.mode_prov_num rainfall  [pw=firm_size_year], cluster(taxrefno) exposure(L.fi
> rm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =  -19155144
  Iteration 1:   log pseudolikelihood =  -18578696
  Iteration 2:   log pseudolikelihood =  -18576632
  Iteration 3:   log pseudolikelihood =  -18576632

  Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -3419156.1
Iteration 1:   log pseudolikelihood = -3203032.3
Iteration 2:   log pseudolikelihood = -3176897.5
Iteration 3:   log pseudolikelihood = -3176861.8
Iteration 4:   log pseudolikelihood = -3176861.8

Fitting full model:

Iteration 0:   log pseudolikelihood = -3159096.8
Iteration 1:   log pseudolikelihood = -3100597.2
Iteration 2:   log pseudolikelihood = -3069321.1
Iteration 3:   log pseudolikelihood = -3069063.3
Iteration 4:   log pseudolikelihood = -3069062.8
Iteration 5:   log pseudolikelihood = -3069062.8

Negative binomial regression                    Number of obs     =      6,032
                                                Wald chi2(25)     =      87.55
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -3069062.8               Pseudo R2         =     0.0339

                                              (Std. Err. adjusted for 1,285 clusters in t
> axrefno)
------------------------------------------------------------------------------
             |               Robust
  count_agri |      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
> nterval]
-------------+----------------------------------------------------------------
  prop_affected_all |  -1.746376   1.309218    -1.33   0.182    -4.312395
> .8196436
             |
             taxyear |
               2012  |  -2.093608   1.110151    -1.89   0.059    -4.269464
>  .082247
               2014  |  -2.353996   1.154799    -2.04   0.042    -4.617362   -
> .0906313
               2015  |  -2.262425   1.062985    -2.13   0.033    -4.345838   -
> .1790121
               2016  |  -2.469255   1.052319    -2.35   0.019    -4.531762   -
> .4067483
               2017  |  -3.118731   1.056157    -2.95   0.003    -5.188762   -
> 1.048701
             |
 taxyear#c.prop_affected_all |
               2012  |   1.383056   1.337767     1.03   0.301     -1.23892
> 4.005032
               2014  |   1.464016   1.430011     1.02   0.306    -1.338754
> 4.266787
               2015  |   1.374143   1.319485     1.04   0.298       -1.212
> 3.960286
               2016  |   1.273645    1.30647     0.97   0.330    -1.286989
> 3.834279
               2017  |   2.560661   1.359486     1.88   0.060    -.1038829
> 5.225205
             |
          gender_fill |  -.5555286    .302148    -1.84   0.066    -1.147728
> .0366706
prop_age_cat_1_seasonal_fill |    1.47194   .5545616     2.65   0.008     .3850191
> 2.558861
prop_age_cat_2_seasonal_fill |  -.9799373   .6784649    -1.44   0.149    -2.309704
> .3498295
prop_age_cat_3_seasonal_fill |  -.2203692     .64101    -0.34   0.731    -1.476726
> 1.035987
prop_age_cat_4_seasonal_fill |   1.882685   .9209981     2.04   0.041     .0775619
> 3.687808
prop_age_cat_5_seasonal_fill |          0  (omitted)
             |
          mode_prov_num |
            Free State  |   .3112814   .5162282     0.60   0.547    -.7005073
>  1.32307
               Gauteng  |  -.2850938   .3258416    -0.87   0.382    -.9237316
```

```
> .3535439
                KwaZulu-Natal |  -.2462283   .3085162    -0.80   0.425    -.8509089
> .3584523
                      Limpopo |   .1494478   .4573607     0.33   0.744    -.7469628
> 1.045858
                    Mpumalanga |  -.5261273   .3129942    -1.68   0.093    -1.139585
> .0873301
                   North West |  -.2417275   .3579212    -0.68   0.499    -.9432402
> .4597852
                Northern Cape |  -.2835515   .4571922    -0.62   0.535    -1.179632
> .6125287
                 Western Cape |   -.142022   .3346183    -0.42   0.671    -.7978619
> .5138179
                              |
                     rainfall |  -.0001963   .0005233    -0.38   0.708     -.001222
> .0008294
                        _cons |   3.232006   1.202764     2.69   0.007     .8746314
> 5.589381
ln(L.firm_size_year_seaso~l) |          1  (exposure)
-----------------------------+------------------------------------------------------
                    /lnalpha |  -.003502   .1534192                      -.3041981
> .2971942
-----------------------------+------------------------------------------------------
                       alpha |   .9965042   .1528829                       .7377147
> 1.346077
------------------------------------------------------------------------------
```

```
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 |      1,042    .7497234    .3397324          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)
  (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 saved as PNG format

250         graph save "nb_empl_w_NON_CIT_Survivor.gph", replace
  (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 prop_age
  > _cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -31187.539
  Iteration 1:   log pseudolikelihood = -29041.605
  Iteration 2:   log pseudolikelihood =  -29037.79
  Iteration 3:   log pseudolikelihood =  -29037.79

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -22951.338
  Iteration 1:   log pseudolikelihood = -21305.697
  Iteration 2:   log pseudolikelihood = -21197.534
  Iteration 3:   log pseudolikelihood = -21197.127
  Iteration 4:   log pseudolikelihood = -21197.127

  Fitting full model:

  Iteration 0:   log pseudolikelihood =  -20708.33
  Iteration 1:   log pseudolikelihood = -20493.777
  Iteration 2:   log pseudolikelihood = -20441.627
  Iteration 3:   log pseudolikelihood = -20441.554
  Iteration 4:   log pseudolikelihood = -20441.554

  Negative binomial regression                    Number of obs     =      6,823
                                                  Wald chi2(25)     =     850.91
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -20441.554               Pseudo R2         =     0.0356

                                        (Std. Err. adjusted for 1,487 clusters in t
  > axrefno)
  ------------------------------------------------------------------------------
    ________
                                 |               Robust
          entry_agri_seasonal    |      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
  > nterval]
  -------------------------------+----------------------------------------------------------
    ________
           prop_affected_all     |   .4121533   .0502346     8.20   0.000     .3136953
  > .5106114
                                 |
                        taxyear  |
                          2012   |   .2094955   .0599023     3.50   0.000     .0920892
  > .3269018
                          2014   |  -.0271386   .0445587    -0.61   0.542    -.1144721
  > .0601948
                          2015   |   .0725574    .047911     1.51   0.130    -.0213463
  > .1664612
                          2016   |   .0209097   .0535296     0.39   0.696    -.0840063
  > .1258258
                          2017   |   -.021842   .0512753    -0.43   0.670    -.1223398
  > .0786557
                                 |
   taxyear#c.prop_affected_all   |
```

```
                        2012 |  -.1116748    .068981    -1.62   0.105    -.2468751
> .0235254
                        2014 |  -.0205816   .0534681    -0.38   0.700    -.1253771
> .0842139
                        2015 |  -.1033956   .0570313    -1.81   0.070    -.2151749
> .0083837
                        2016 |  -.1026383   .0637219    -1.61   0.107     -.227531
> .0222544
                        2017 |  -.0414234   .0604829    -0.68   0.493    -.1599677
> .0771208
                             |
                 gender_fill |   .1002629   .0316214     3.17   0.002      .038286
> .1622397
prop_age_cat_1_seasonal_fill |   1.390128   .0761631    18.25   0.000     1.240851
> 1.539405
prop_age_cat_2_seasonal_fill |   .9183205   .0773002    11.88   0.000      .766815
> 1.069826
prop_age_cat_3_seasonal_fill |    .686486   .0854122     8.04   0.000     .5190813
> .8538908
prop_age_cat_4_seasonal_fill |   .6981679   .0886901     7.87   0.000     .5243384
> .8719973
prop_age_cat_5_seasonal_fill |          0  (omitted)
                             |
                mode_prov_num |
                  Free State |   .1851886   .0487114     3.80   0.000      .089716
> .2806612
                     Gauteng |   .2670553   .0476618     5.60   0.000     .1736399
> .3604708
                KwaZulu-Natal |   .0551637   .0349674     1.58   0.115    -.0133711
> .1236985
                     Limpopo |   .1881426   .0446378     4.21   0.000     .1006542
> .2756311
                   Mpumalanga |   .1112723   .0400885     2.78   0.006     .0327002
> .1898444
                   North West |    .223145   .0473422     4.71   0.000      .130356
> .3159341
                Northern Cape |    .001761   .0479703     0.04   0.971    -.0922591
> .0957812
                 Western Cape |  -.1595949    .036687    -4.35   0.000    -.2315001   -
> .0876897
                             |
                     rainfall |   .0000433   .0000523     0.83   0.407    -.0000591
> .0001457
                        _cons |  -1.858026    .089973   -20.65   0.000     -2.03437   -
> 1.681682
ln(firm_size_year_seasona~l) |          1  (exposure)
-----------------------------+------------------------------------------------------
  --------
                     /lnalpha |  -1.985948   .0524878                     -2.088822   -
> 1.883074
-----------------------------+------------------------------------------------------
  --------
                        alpha |   .1372504    .007204                      .1238329
> .1521218
-----------------------------+------------------------------------------------------
  --------
```

```
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 |      1,160    .749374    .3386056         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)
  (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 saved as PNG format

266         graph save "nb_entr_uw_NON_CIT_Survivor.gph", replace
  (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 prop_age
  > _cat_* i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(firm
  > _size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood = -5584264.5
  Iteration 1:   log pseudolikelihood = -5344228.6
  Iteration 2:   log pseudolikelihood = -5343825.5
  Iteration 3:   log pseudolikelihood = -5343825.5

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -2863971.8
  Iteration 1:   log pseudolikelihood =   -2821508
  Iteration 2:   log pseudolikelihood =   -2647724
  Iteration 3:   log pseudolikelihood = -2643306.9
  Iteration 4:   log pseudolikelihood = -2643267.5
  Iteration 5:   log pseudolikelihood = -2643267.5

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -2598951.8
  Iteration 1:   log pseudolikelihood = -2540870.1
  Iteration 2:   log pseudolikelihood = -2538035.4
  Iteration 3:   log pseudolikelihood =   -2538035
  Iteration 4:   log pseudolikelihood =   -2538035

  Negative binomial regression                    Number of obs     =      6,823
                                                  Wald chi2(25)     =     535.93
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood =   -2538035               Pseudo R2         =     0.0398
```

(Std. Err. adjusted for **1,487** clusters in t
> axrefno)

| entry_agri_seasonal | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. I
> nterval] |
|---|---|---|---|---|---|
| prop_affected_all | .320901 | .0821869 | 3.90 | 0.000 | .1598176
> .4819845 |
| taxyear | | | | | |
| 2012 | .2465216 | .0797462 | 3.09 | 0.002 | .0902219
> .4028212 |
| 2014 | .0048606 | .0638986 | 0.08 | 0.939 | -.1203783
> .1300995 |
| 2015 | .0953124 | .066829 | 1.43 | 0.154 | -.0356701
> .2262949 |
| 2016 | .1986773 | .1406184 | 1.41 | 0.158 | -.0769297
> .4742843 |
| 2017 | .0784004 | .0863911 | 0.91 | 0.364 | -.0909231
> .247724 |
| taxyear#c.prop_affected_all | | | | | |
| 2012 | -.1414902 | .0945534 | -1.50 | 0.135 | -.3268115
> .043831 |
| 2014 | -.0634011 | .0782867 | -0.81 | 0.418 | -.2168403
> .090038 |
| 2015 | -.1344645 | .0762783 | -1.76 | 0.078 | -.2839673
> .0150383 |
| 2016 | -.2714827 | .1648623 | -1.65 | 0.100 | -.5946069
> .0516416 |
| 2017 | -.1170817 | .0995986 | -1.18 | 0.240 | -.3122913
> .0781279 |
| gender_fill | -.162135 | .0883505 | -1.84 | 0.066 | -.3352988
> .0110287 |
| prop_age_cat_1_seasonal_fill | 2.296949 | .2523027 | 9.10 | 0.000 | 1.802445
> 2.791454 |
| prop_age_cat_2_seasonal_fill | .9853618 | .258843 | 3.81 | 0.000 | .4780388
> 1.492685 |
| prop_age_cat_3_seasonal_fill | .9895973 | .3092828 | 3.20 | 0.001 | .3834141
> 1.59578 |
| prop_age_cat_4_seasonal_fill | 1.278399 | .328608 | 3.89 | 0.000 | .6343394
> 1.922459 |
| prop_age_cat_5_seasonal_fill | 0 | (omitted) | | | |
| mode_prov_num | | | | | |
| Free State | .2326329 | .1865453 | 1.25 | 0.212 | -.1329892
> .598255 |
| Gauteng | .4685797 | .1027493 | 4.56 | 0.000 | .2671947
> .6699646 |
| KwaZulu-Natal | .3432775 | .1212106 | 2.83 | 0.005 | .1057091
> .580846 |
| Limpopo | .4386185 | .1150009 | 3.81 | 0.000 | .2132209
> .664016 |
| Mpumalanga | .3104175 | .1012255 | 3.07 | 0.002 | .1120192
> .5088158 |
| North West | .473069 | .1202538 | 3.93 | 0.000 | .2373758
> .7087622 |
| Northern Cape | .0630551 | .1110564 | 0.57 | 0.570 | -.1546114
> .2807215 |
| Western Cape | -.0289836 | .0987953 | -0.29 | 0.769 | -.2226187
> .1646516 |
| rainfall | .0000625 | .0000923 | 0.68 | 0.498 | -.0001183
> .0002433 |
| _cons | -2.287563 | .2500919 | -9.15 | 0.000 | -2.777734 -
> 1.797392 |
| ln(firm_size_year_seasona~l) | 1 | (exposure) | | | |

```
------------------------------------------------------------------------------
             /lnalpha |  -2.207111   .0771093                      -2.358242   -
> 2.055979
-------------+----------------------------------------------------------------
             alpha |    .110018   .0084834                       .0945863
> .1279674
------------------------------------------------------------------------------

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 |      1,160     .749374    .3386056          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)
(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 saved as PNG format

280         graph save "nb_entr_w_NON_CIT_Survivor.gph", replace
(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 prop_a
> ge_cat_* i.mode_prov_num rainfall, cluster(taxrefno) exposure(L.firm_size_year)
note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

Fitting Poisson model:

Iteration 0:   log pseudolikelihood =  -25972.53
Iteration 1:   log pseudolikelihood = -24030.222
Iteration 2:   log pseudolikelihood = -24027.316
Iteration 3:   log pseudolikelihood = -24027.316

Fitting constant-only model:
```

```
Iteration 0:   log pseudolikelihood = -19799.637
Iteration 1:   log pseudolikelihood =  -18148.33
Iteration 2:   log pseudolikelihood =  -17967.97
Iteration 3:   log pseudolikelihood =  -17962.38
Iteration 4:   log pseudolikelihood =  -17962.38

Fitting full model:

Iteration 0:   log pseudolikelihood = -17626.847
Iteration 1:   log pseudolikelihood = -17508.047
Iteration 2:   log pseudolikelihood = -17499.318
Iteration 3:   log pseudolikelihood = -17499.299
Iteration 4:   log pseudolikelihood = -17499.299

Negative binomial regression                    Number of obs     =      6,032
                                                Wald chi2(25)     =     449.90
Dispersion           = mean                     Prob > chi2       =     0.0000
Log pseudolikelihood = -17499.299               Pseudo R2         =     0.0258

                                              (Std. Err. adjusted for 1,285 clusters in t
> axrefno)
------------------------------------------------------------------------------
             |               Robust
exit_agri_new|      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
> nterval]
-------------+----------------------------------------------------------------
  prop_affected_all |   .3245823   .0552102     5.88   0.000     .2163723
> .4327924
                    |
                taxyear |
                  2012  |   .0687465   .0510404     1.35   0.178    -.0312909
> .1687839
                  2014  |  -.1227473   .0468214    -2.62   0.009    -.2145155   -
> .0309792
                  2015  |  -.1035838   .0544962    -1.90   0.057    -.2103945
> .0032269
                  2016  |  -.0899359   .0513918    -1.75   0.080     -.190662
> .0107903
                  2017  |  -.0634374   .0542399    -1.17   0.242    -.1697456
> .0428709
                    |
 taxyear#c.prop_affected_all |
                  2012  |  -.0688852   .0605242    -1.14   0.255    -.1875104
>   .04974
                  2014  |   .2283654    .056238     4.06   0.000      .118141
> .3385898
                  2015  |    .109684   .0637504     1.72   0.085    -.0152645
> .2346326
                  2016  |   .0756511   .0606499     1.25   0.212    -.0432205
> .1945228
                  2017  |   .0037312   .0636935     0.06   0.953    -.1211058
> .1285682
                    |
              gender_fill |   .0971597   .0343683     2.83   0.005     .0297991
> .1645203
prop_age_cat_1_seasonal_fill |    .323471   .0756882     4.27   0.000     .1751249
> .4718172
prop_age_cat_2_seasonal_fill |      .3042   .0713137     4.27   0.000     .1644277
> .4439724
prop_age_cat_3_seasonal_fill |   .2595574   .0781518     3.32   0.001     .1063827
>   .412732
prop_age_cat_4_seasonal_fill |   .1695437   .0817843     2.07   0.038     .0092494
>   .329838
prop_age_cat_5_seasonal_fill |          0  (omitted)
                    |
             mode_prov_num |
               Free State  |   .0681664   .0564355     1.21   0.227    -.0424451
> .1787778
                  Gauteng  |   .2288144   .0583835     3.92   0.000     .1143848
>   .343244
```

```
                KwaZulu-Natal |   .1205727   .0365748     3.30   0.001     .0488874
>  .192258
                      Limpopo |    .285057   .0456768     6.24   0.000     .1955322
> .3745819
                    Mpumalanga |   .1841884   .0467002     3.94   0.000     .0926576
> .2757191
                    North West |   .2579932   .0518391     4.98   0.000     .1563904
>  .359596
                Northern Cape |   .0596927   .0490227     1.22   0.223      -.03639
> .1557754
                 Western Cape |  -.1170043    .038634    -3.03   0.002    -.1927255   -
> .0412831
                              |
                      rainfall |  -.0000527   .0000528    -1.00   0.319    -.0001562
> .0000508
                         _cons |  -1.333749   .0839855   -15.88   0.000    -1.498358   -
> 1.169141
ln(L.firm_size_year_seaso~l) |          1  (exposure)
-----------------------------+---------------------------------------------------------
  ________
                      /lnalpha |  -2.041349   .0571983                      -2.153455   -
> 1.929242
-----------------------------+---------------------------------------------------------
  ________
                         alpha |   .1298534   .0074274                       .1160824
> .1452582
-----------------------------+---------------------------------------------------------
  ________
```

```
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 |      1,042    .7497234    .3397324          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)
  (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 saved as PNG format

299         graph save "nb_exit_uw_NON_CIT_Survivor.gph", replace
  (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 prop_
  > age_cat_* i.mode_prov_num rainfall [pw=firm_size_year], cluster(taxrefno) exposure(L
  > .firm_size_year)
  note: prop_age_cat_5_seasonal_fill omitted because of collinearity.

  Fitting Poisson model:

  Iteration 0:   log pseudolikelihood =   -3935009
  Iteration 1:   log pseudolikelihood = -3783358.1
  Iteration 2:   log pseudolikelihood = -3783109.1
  Iteration 3:   log pseudolikelihood = -3783109.1

  Fitting constant-only model:

  Iteration 0:   log pseudolikelihood = -2337062.7
  Iteration 1:   log pseudolikelihood = -2268462.5
  Iteration 2:   log pseudolikelihood =   -2129801
  Iteration 3:   log pseudolikelihood = -2125747.2
  Iteration 4:   log pseudolikelihood = -2125679.3
  Iteration 5:   log pseudolikelihood = -2125679.3

  Fitting full model:

  Iteration 0:   log pseudolikelihood = -2098965.3
  Iteration 1:   log pseudolikelihood = -2057711.8
  Iteration 2:   log pseudolikelihood = -2056762.6
  Iteration 3:   log pseudolikelihood = -2056760.1
  Iteration 4:   log pseudolikelihood = -2056760.1

  Negative binomial regression                    Number of obs     =      6,032
                                                  Wald chi2(25)     =     379.78
  Dispersion           = mean                     Prob > chi2       =     0.0000
  Log pseudolikelihood = -2056760.1               Pseudo R2         =     0.0324

                                                 (Std. Err. adjusted for 1,285 clusters in t
  > axrefno)
  ------------------------------------------------------------------------------
               |               Robust
    exit_agri_new |      Coef.   Std. Err.      z    P>|z|     [95% Conf. I
  > nterval]
  -------------+----------------------------------------------------------------
    prop_affected_all |   .2516117   .0864502     2.91   0.004     .0821723
  >  .421051
                      |
                taxyear |
                  2012  |   .1249031   .0827206     1.51   0.131    -.0372264
  > .2870326
                  2014  |  -.0475042   .0778448    -0.61   0.542    -.2000772
  > .1050689
                  2015  |  -.1206078   .0733847    -1.64   0.100    -.2644393
  > .0232237
                  2016  |  -.0775757   .0913479    -0.85   0.396    -.2566143
  >  .101463
                  2017  |   .0468669   .0846843     0.55   0.580    -.1191113
  > .2128451
                      |
   taxyear#c.prop_affected_all |
                  2012  |  -.1295733   .0977371    -1.33   0.185    -.3211345
  > .0619879
```

```
                        2014 |    .118117   .0960729     1.23   0.219    -.0701825
> .3064164
                        2015 |    .0954423   .0895527     1.07   0.287    -.0800778
> .2709623
                        2016 |    .0794374   .1076978     0.74   0.461    -.1316463
> .2905212
                        2017 |   -.1464156   .0996566    -1.47   0.142    -.3417389
> .0489077
                             |
                 gender_fill |   -.0769571   .1041131    -0.74   0.460     -.281015
> .1271008
prop_age_cat_1_seasonal_fill |    1.455928   .2631523     5.53   0.000     .9401595
> 1.971698
prop_age_cat_2_seasonal_fill |    .6655448   .2449586     2.72   0.007     .1854348
> 1.145655
prop_age_cat_3_seasonal_fill |    .8766588   .3231321     2.71   0.007     .2433316
> 1.509986
prop_age_cat_4_seasonal_fill |    .9967043   .3007733     3.31   0.001     .4071995
> 1.586209
prop_age_cat_5_seasonal_fill |           0  (omitted)
                             |
                mode_prov_num |
                  Free State |    .0904108   .2224174     0.41   0.684    -.3455194
>  .526341
                     Gauteng |    .3099319   .1242683     2.49   0.013     .0663704
> .5534934
                KwaZulu-Natal |    .3847811   .1390165     2.77   0.006     .1123137
> .6572485
                     Limpopo |    .4735893   .1393228     3.40   0.001     .2005215
> .7466571
                   Mpumalanga |    .3594568   .1279043     2.81   0.005     .1087689
> .6101447
                   North West |    .3732842   .1171272     3.19   0.001      .143719
> .6028493
                Northern Cape |    .1372452   .1208514     1.14   0.256    -.0996192
> .3741095
                 Western Cape |    .0350024   .1195478     0.29   0.770    -.1993069
> .2693118
                             |
                     rainfall |    .0000124   .0000666     0.19   0.852    -.0001181
>  .000143
                        _cons |   -2.050545   .2695524    -7.61   0.000    -2.578858   -
> 1.522232
ln(L.firm_size_year_seaso~l) |           1  (exposure)
-----------------------------+------------------------------------------------------------
> --------
                     /lnalpha |   -2.269033   .0900163                     -2.445462   -
> 2.092604
-----------------------------+------------------------------------------------------------
> --------
                        alpha |    .1034121   .0093088                      .0866861
> .1233655
-----------------------------+------------------------------------------------------------
> --------
```

```
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 |      1,042    .7497234    .3397324         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)
  (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 saved as PNG format

313         graph save "nb_exit_w_NON_CIT_Survivor.gph", replace
  (file nb_exit_w_NON_CIT_Survivor.gph saved)

314
315
316         restore

317
318 **# Reg analysis: CIT Non Survivors
319 stop
  command stop is unrecognized
  r(199);

  end of do-file

  r(199);
```