. // Model C.V.4

.

. // poisson model

. glm dv `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, family(poisson) link(log) vce(cl mineid) exposure(hours) iter(50) eform

note: sp48\_24\_c\_lag\_all omitted because of collinearity

Iteration 0: log pseudolikelihood = -38716.823

Iteration 1: log pseudolikelihood = -35816.538

Iteration 2: log pseudolikelihood = -35795.699

Iteration 3: log pseudolikelihood = -35795.386

Iteration 4: log pseudolikelihood = -35795.332

Iteration 5: log pseudolikelihood = -35795.319

Iteration 6: log pseudolikelihood = -35795.316

Iteration 7: log pseudolikelihood = -35795.316

Iteration 8: log pseudolikelihood = -35795.316

Iteration 9: log pseudolikelihood = -35795.316

Generalized linear models No. of obs = 19,291

Optimization : ML Residual df = 19,121

Scale parameter = 1

Deviance = 35244.15667 (1/df) Deviance = 1.843217

Pearson = 767485.5518 (1/df) Pearson = 40.13836

Variance function: V(u) = u [Poisson]

Link function : g(u) = ln(u) [Log]

AIC = 3.728714

Log pseudolikelihood = -35795.3157 BIC = -153430.3

(Std. Err. adjusted for 1,288 clusters in mineid)

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| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

-----------------------+----------------------------------------------------------------

sp48\_11\_c\_lag\_all | 1.037329 .0301941 1.26 0.208 .9798057 1.098228

sp75\_1311\_c\_lag\_all | .9734392 .075465 -0.35 0.728 .8362192 1.133176

sp75\_1400\_1\_c\_lag\_all | .9695887 .1027273 -0.29 0.771 .787777 1.193361

sp75\_1404\_1\_c\_lag\_all | .7120444 .0585586 -4.13 0.000 .606044 .8365848

sp75\_1405\_1\_c\_lag\_all | .9472352 .0705719 -0.73 0.467 .8185416 1.096162

sp75\_500\_1\_c\_lag\_all | .7332277 .1062536 -2.14 0.032 .5519368 .9740659

sp75\_501\_c\_lag\_all | 1.108588 .0455547 2.51 0.012 1.022803 1.201567

sp75\_506\_1\_c\_lag\_all | 1.126756 .0308219 4.36 0.000 1.067937 1.188814

sp75\_507\_1\_c\_lag\_all | 1.005067 .0102061 0.50 0.619 .9852614 1.025271

sp75\_508\_1\_c\_lag\_all | .8442728 .1443879 -0.99 0.322 .6038235 1.180472

sp75\_512\_1\_c\_lag\_all | .8419726 .0775373 -1.87 0.062 .7029279 1.008521

sp75\_811\_c\_lag\_all | .9778464 .0158917 -1.38 0.168 .94719 1.009495

sp75\_1002\_c\_lag\_all | 1.029264 .0109062 2.72 0.006 1.008108 1.050863

sp75\_1003\_2\_c\_lag\_all | 1.028366 .0433238 0.66 0.507 .9468642 1.116883

sp75\_1322\_c\_lag\_all | 2.443934 .5267868 4.15 0.000 1.601821 3.728763

sp75\_1719\_2\_c\_lag\_all | 1.020362 .0556006 0.37 0.711 .9170045 1.135369

sp75\_212\_c\_lag\_all | 1.016748 .0127009 1.33 0.184 .9921574 1.041949

sp75\_332\_c\_lag\_all | .9091358 .046061 -1.88 0.060 .8231955 1.004048

sp75\_501\_2\_c\_lag\_all | 1.009389 .0544227 0.17 0.862 .9081652 1.121896

sp75\_502\_c\_lag\_all | .9871199 .0688678 -0.19 0.853 .8609633 1.131762

sp75\_602\_c\_lag\_all | .9993001 .0101905 -0.07 0.945 .9795255 1.019474

sp75\_812\_c\_lag\_all | .9309122 .0729383 -0.91 0.361 .7983915 1.085429

sp75\_1003\_c\_lag\_all | 1.007648 .0060886 1.26 0.207 .9957848 1.019652

sp75\_153\_c\_lag\_all | 1.239357 .1174094 2.27 0.023 1.02934 1.492225

sp75\_203\_c\_lag\_all | .9986316 .0044253 -0.31 0.757 .9899956 1.007343

sp75\_213\_c\_lag\_all | 1.348961 .0855394 4.72 0.000 1.191306 1.527478

sp75\_343\_c\_lag\_all | .9746589 .0293317 -0.85 0.394 .9188325 1.033877

sp75\_373\_c\_lag\_all | 1.041938 .3059952 0.14 0.889 .5859522 1.852772

sp75\_503\_c\_lag\_all | .9985553 .0009234 -1.56 0.118 .9967471 1.000367

sp75\_523\_c\_lag\_all | .9866936 .0110134 -1.20 0.230 .9653421 1.008517

sp75\_523\_3\_c\_lag\_all | .997179 .0029951 -0.94 0.347 .991326 1.003067

sp75\_603\_c\_lag\_all | .9984807 .0213308 -0.07 0.943 .9575361 1.041176

sp75\_703\_3\_c\_lag\_all | 1.039638 .0294607 1.37 0.170 .98347 1.099013

sp48\_24\_c\_lag\_all | 1 (omitted)

sp48\_4\_c\_lag\_all | 3.61e-06 3.62e-06 -12.48 0.000 5.04e-07 .0000258

sp75\_1404\_c\_lag\_all | 1.074181 .1197131 0.64 0.521 .8634046 1.336412

sp75\_1719\_4\_c\_lag\_all | 1.038641 .0156604 2.51 0.012 1.008396 1.069793

sp75\_204\_c\_lag\_all | .9998464 .0067019 -0.02 0.982 .9867968 1.013069

sp75\_334\_c\_lag\_all | .9686756 .0152065 -2.03 0.043 .9393253 .9989431

sp75\_524\_c\_lag\_all | 1.04393 .1152116 0.39 0.697 .8408718 1.296023

sp75\_604\_c\_lag\_all | 1.000038 .0011109 0.03 0.972 .9978636 1.002218

sp75\_703\_4\_c\_lag\_all | 1.435455 .1759224 2.95 0.003 1.128939 1.825192

sp48\_25\_c\_lag\_all | .8855987 .0257017 -4.19 0.000 .8366302 .9374334

sp48\_5\_c\_lag\_all | 1.088653 .0559316 1.65 0.098 .9843679 1.203987

sp75\_1315\_c\_lag\_all | 1.029707 .2670106 0.11 0.910 .6194284 1.711735

sp75\_1403\_5\_c\_lag\_all | .9979908 .0017798 -1.13 0.259 .9945085 1.001485

sp75\_1405\_c\_lag\_all | 1.00372 .0066168 0.56 0.573 .9908344 1.016773

sp75\_155\_c\_lag\_all | .8504575 .1947365 -0.71 0.479 .5429323 1.33217

sp75\_1725\_c\_lag\_all | .9981443 .0010763 -1.72 0.085 .996037 1.000256

sp75\_205\_c\_lag\_all | 1.246442 .0673849 4.07 0.000 1.121126 1.385765

sp75\_215\_c\_lag\_all | 1.103111 .1177317 0.92 0.358 .8948965 1.359769

sp75\_505\_c\_lag\_all | .9634538 .0904749 -0.40 0.692 .8014884 1.158149

sp75\_605\_c\_lag\_all | .9897105 .0081439 -1.26 0.209 .9738768 1.005802

sp48\_26\_c\_lag\_all | 1.015958 .0441141 0.36 0.715 .9330726 1.106206

sp48\_6\_c\_lag\_all | 1.040169 .031475 1.30 0.193 .9802728 1.103725

sp75\_1316\_c\_lag\_all | .8827573 .1533944 -0.72 0.473 .6279576 1.240944

sp75\_1403\_6\_c\_lag\_all | 1.000393 .0020377 0.19 0.847 .996407 1.004395

sp75\_156\_c\_lag\_all | .5991375 .176471 -1.74 0.082 .336366 1.067188

sp75\_1906\_c\_lag\_all | 1.011517 .013317 0.87 0.384 .9857502 1.037958

sp75\_1916\_c\_lag\_all | 1.003575 .0146997 0.24 0.808 .9751734 1.032803

sp75\_606\_c\_lag\_all | 1.000011 .0020888 0.01 0.996 .9959252 1.004113

sp75\_816\_c\_lag\_all | 1.024727 .0153984 1.63 0.104 .9949866 1.055356

sp75\_906\_c\_lag\_all | .8415818 .0708316 -2.05 0.040 .7136004 .9925162

sp48\_27\_c\_lag\_all | .9735385 .0314968 -0.83 0.407 .9137225 1.03727

sp48\_7\_c\_lag\_all | .950188 .025383 -1.91 0.056 .9017182 1.001263

sp75\_1403\_7\_c\_lag\_all | 1.00174 .0170432 0.10 0.919 .9688866 1.035707

sp75\_207\_c\_lag\_all | 1.164517 .0824607 2.15 0.031 1.013611 1.33789

sp75\_327\_c\_lag\_all | .9381026 .1833046 -0.33 0.744 .6396261 1.375861

sp75\_337\_c\_lag\_all | .981381 .0166623 -1.11 0.268 .9492608 1.014588

sp75\_507\_c\_lag\_all | 1.008683 .0191873 0.45 0.649 .9717686 1.046999

sp75\_607\_c\_lag\_all | .988043 .0176823 -0.67 0.501 .9539872 1.023315

sp75\_807\_c\_lag\_all | 1.006182 .0024217 2.56 0.010 1.001447 1.01094

sp75\_817\_c\_lag\_all | .9525219 .0999201 -0.46 0.643 .7755029 1.169948

sp48\_28\_c\_lag\_all | .9652939 .0266201 -1.28 0.200 .9145044 1.018904

sp48\_8\_c\_lag\_all | 1.005291 .029944 0.18 0.859 .9482822 1.065727

sp75\_1318\_c\_lag\_all | 1.184081 .1458315 1.37 0.170 .9301378 1.507355

sp75\_1403\_8\_c\_lag\_all | .9941469 .0015332 -3.81 0.000 .9911463 .9971565

sp75\_208\_c\_lag\_all | 1.006554 .0062667 1.05 0.294 .9943466 1.018912

sp75\_388\_c\_lag\_all | 1.054726 .0338417 1.66 0.097 .9904399 1.123184

sp75\_209\_c\_lag\_all | .9726793 .0269745 -1.00 0.318 .9212214 1.027012

sp75\_389\_c\_lag\_all | 1.033033 .0785158 0.43 0.669 .8900581 1.198974

sp75\_509\_c\_lag\_all | 1.134877 .0649254 2.21 0.027 1.014501 1.269537

sp75\_100\_c\_lag\_all | 1.148993 .0994009 1.61 0.108 .9697925 1.361306

sp75\_1400\_c\_lag\_all | 1.024081 .0117005 2.08 0.037 1.001403 1.047272

sp75\_1403\_10\_c\_lag\_all | 1.003751 .0037471 1.00 0.316 .9964336 1.011122

sp75\_160\_c\_lag\_all | .9904621 .1737167 -0.05 0.956 .7023376 1.396786

sp75\_1720\_c\_lag\_all | 1.009082 .017836 0.51 0.609 .9747227 1.044652

sp75\_340\_c\_lag\_all | .9900922 .003182 -3.10 0.002 .9838753 .9963484

sp75\_500\_c\_lag\_all | 1.032858 .0288692 1.16 0.247 .9777969 1.091019

sp75\_510\_c\_lag\_all | 1.44748 .2474959 2.16 0.031 1.035311 2.023739

sp75\_810\_c\_lag\_all | 1.036648 .015733 2.37 0.018 1.006266 1.067947

mine\_time | 1.005306 .0025908 2.05 0.040 1.000241 1.010397

onsite\_insp\_hours | .9998255 .0000963 -1.81 0.070 .9996368 1.000014

|

state |

AL | .7874271 .1002398 -1.88 0.060 .6135529 1.010575

CO | .7038387 .0764851 -3.23 0.001 .5688193 .8709074

IL | 1.224259 .0980459 2.53 0.012 1.046415 1.432328

IN | 1.223264 .1529677 1.61 0.107 .9573672 1.563011

MD | 1.415871 .1852989 2.66 0.008 1.095531 1.829881

MT | 4.73e-06 4.74e-06 -12.23 0.000 6.63e-07 .0000337

NM | .7694987 .0632318 -3.19 0.001 .6550318 .9039688

OH | 1.171085 .1029739 1.80 0.072 .9856935 1.391345

OK | 2.473682 .6260354 3.58 0.000 1.50634 4.06223

PA | 1.135623 .1118932 1.29 0.197 .9361926 1.377537

TN | 1.56915 .176444 4.01 0.000 1.258782 1.956043

UT | .4464682 .0618545 -5.82 0.000 .3403013 .585757

VA | .9177227 .050902 -1.55 0.122 .8231881 1.023114

WV | 1.101493 .0583129 1.83 0.068 .9929316 1.221924

WY | .8071423 .1025482 -1.69 0.092 .6292223 1.035371

|

time |

2000.25 | 1.121976 .0514256 2.51 0.012 1.025579 1.227435

2000.5 | 1.271473 .0568139 5.38 0.000 1.164857 1.387848

2000.75 | .9422291 .050973 -1.10 0.271 .8474381 1.047623

2001 | .9314536 .0515796 -1.28 0.200 .8356523 1.038238

2001.25 | .989637 .0559549 -0.18 0.854 .8858257 1.105614

2001.5 | 1.219796 .0816054 2.97 0.003 1.069895 1.3907

2001.75 | .9259412 .0576274 -1.24 0.216 .8196106 1.046066

2002 | .9665806 .0589198 -0.56 0.577 .8577317 1.089243

2002.25 | .9464259 .055094 -0.95 0.344 .8443759 1.060809

2002.5 | 1.008366 .0679299 0.12 0.902 .8836411 1.150696

2002.75 | .9146322 .0633816 -1.29 0.198 .7984733 1.047689

2003 | .7872708 .0565098 -3.33 0.001 .6839517 .9061974

2003.25 | .8581747 .0672078 -1.95 0.051 .7360614 1.000547

2003.5 | .9210444 .0600766 -1.26 0.207 .8105122 1.04665

2003.75 | .7266554 .0491225 -4.72 0.000 .6364827 .8296031

2004 | .7264026 .0520958 -4.46 0.000 .6311481 .8360332

2004.25 | .803319 .0576107 -3.05 0.002 .6979806 .9245549

2004.5 | .8796514 .0598534 -1.88 0.059 .7698266 1.005144

2004.75 | .7043083 .0505364 -4.89 0.000 .6119083 .8106611

2005 | .6799686 .050566 -5.19 0.000 .5877451 .7866629

2005.25 | .7406122 .0578883 -3.84 0.000 .6354166 .8632233

2005.5 | .8469844 .0647443 -2.17 0.030 .7291364 .9838799

2005.75 | .7036637 .0531862 -4.65 0.000 .6067745 .816024

2006 | .7050615 .0537816 -4.58 0.000 .6071527 .8187588

2006.25 | .6613026 .0491624 -5.56 0.000 .5716371 .7650328

2006.5 | .8131396 .0607778 -2.77 0.006 .7023319 .9414295

2006.75 | .6567375 .046406 -5.95 0.000 .5718007 .7542909

2007 | .670287 .0511135 -5.25 0.000 .5772334 .7783416

2007.25 | .6446253 .0586981 -4.82 0.000 .5392609 .7705766

2007.5 | .7956709 .0641244 -2.84 0.005 .6794129 .9318224

2007.75 | .7143435 .0561113 -4.28 0.000 .6124147 .8332371

2008 | .6549131 .0511151 -5.42 0.000 .5620159 .7631656

2008.25 | .6426838 .0544768 -5.22 0.000 .5443091 .7588381

2008.5 | .789406 .0713953 -2.61 0.009 .6611747 .9425071

2008.75 | .6282741 .04925 -5.93 0.000 .5387956 .7326125

2009 | .642024 .047839 -5.95 0.000 .5547864 .7429791

2009.25 | .5992264 .0487342 -6.30 0.000 .510933 .7027776

2009.5 | .6382521 .0514327 -5.57 0.000 .5450035 .7474552

2009.75 | .5515139 .0403619 -8.13 0.000 .4778178 .6365766

2010 | .5189487 .0451557 -7.54 0.000 .4375806 .615447

2010.25 | .5603245 .0511924 -6.34 0.000 .4684596 .6702042

2010.5 | .6456808 .0498598 -5.66 0.000 .5549932 .7511871

2010.75 | .5419392 .0422688 -7.85 0.000 .4651153 .6314522

2011 | .5336795 .0439711 -7.62 0.000 .4540965 .62721

2011.25 | .4936756 .0391973 -8.89 0.000 .4225296 .5768012

2011.5 | .5668747 .0434011 -7.41 0.000 .4878848 .6586533

2011.75 | .4495963 .0347658 -10.34 0.000 .3863689 .5231705

2012 | .4796113 .0389098 -9.06 0.000 .4091036 .5622708

2012.25 | .4505578 .0369403 -9.72 0.000 .3836739 .5291012

2012.5 | .5167507 .0485046 -7.03 0.000 .4299158 .6211247

2012.75 | .3960151 .0363766 -10.08 0.000 .3307678 .4741331

2013 | .4309954 .0392084 -9.25 0.000 .3606097 .5151195

2013.25 | .4103141 .0393871 -9.28 0.000 .339944 .4952512

2013.5 | .4757253 .0459335 -7.69 0.000 .393703 .5748358

2013.75 | .3808577 .0344752 -10.66 0.000 .3189422 .4547927

2014 | .414545 .0411234 -8.88 0.000 .3412961 .5035145

2014.25 | .4216963 .0468987 -7.76 0.000 .3391049 .5244035

2014.5 | .460024 .0435863 -8.20 0.000 .3820595 .5538983

2014.75 | .4256888 .0427438 -8.51 0.000 .349641 .5182773

2015 | .3941158 .0412846 -8.89 0.000 .3209655 .4839376

2015.25 | .3446256 .0353684 -10.38 0.000 .2818319 .4214102

2015.5 | .4535299 .0483129 -7.42 0.000 .3680701 .5588321

2015.75 | .3355978 .0401128 -9.13 0.000 .2655082 .4241897

2016 | .3671548 .0452427 -8.13 0.000 .2883764 .4674538

|

\_cons | .000083 4.42e-06 -176.34 0.000 .0000748 .0000921

ln(hours) | 1 (exposure)

----------------------------------------------------------------------------------------

.

. quietly poisson dv `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

. est store pois

. estat gof

Deviance goodness-of-fit = 35244.16

Prob > chi2(19123) = 0.0000

Pearson goodness-of-fit = 767466

Prob > chi2(19123) = 0.0000

.

. pause "next"

.

. // negative binomial model

. glm dv `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, family(nbinomial) link(log) vce(cl mineid) exposure(hours) iter(50) eform

note: sp48\_24\_c\_lag\_all omitted because of collinearity

Iteration 0: log pseudolikelihood = -35420.911

Iteration 1: log pseudolikelihood = -34981.911

Iteration 2: log pseudolikelihood = -34979.881

Iteration 3: log pseudolikelihood = -34979.742

Iteration 4: log pseudolikelihood = -34979.714

Iteration 5: log pseudolikelihood = -34979.708

Iteration 6: log pseudolikelihood = -34979.707

Iteration 7: log pseudolikelihood = -34979.706

Iteration 8: log pseudolikelihood = -34979.706

Iteration 9: log pseudolikelihood = -34979.706

Generalized linear models No. of obs = 19,291

Optimization : ML Residual df = 19,121

Scale parameter = 1

Deviance = 14770.73966 (1/df) Deviance = .7724878

Pearson = 491991.4114 (1/df) Pearson = 25.73042

Variance function: V(u) = u+(1)u^2 [Neg. Binomial]

Link function : g(u) = ln(u) [Log]

AIC = 3.644156

Log pseudolikelihood = -34979.70635 BIC = -173903.7

(Std. Err. adjusted for 1,288 clusters in mineid)

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| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

-----------------------+----------------------------------------------------------------

sp48\_11\_c\_lag\_all | 1.070896 .0370682 1.98 0.048 1.000654 1.14607

sp75\_1311\_c\_lag\_all | 1.005842 .1062633 0.06 0.956 .8177187 1.237246

sp75\_1400\_1\_c\_lag\_all | .8484891 .1256582 -1.11 0.267 .634726 1.134243

sp75\_1404\_1\_c\_lag\_all | .625277 .090995 -3.23 0.001 .4701097 .8316598

sp75\_1405\_1\_c\_lag\_all | .9083609 .1105445 -0.79 0.430 .7155995 1.153047

sp75\_500\_1\_c\_lag\_all | .8952352 .1380765 -0.72 0.473 .6616863 1.211218

sp75\_501\_c\_lag\_all | 1.09878 .0527633 1.96 0.050 1.000084 1.207218

sp75\_506\_1\_c\_lag\_all | 1.072423 .0458047 1.64 0.102 .9863024 1.166063

sp75\_507\_1\_c\_lag\_all | 1.013359 .0142297 0.95 0.345 .9858499 1.041636

sp75\_508\_1\_c\_lag\_all | .8889138 .1705167 -0.61 0.539 .6103474 1.29462

sp75\_512\_1\_c\_lag\_all | .7054317 .108659 -2.27 0.023 .5216062 .9540414

sp75\_811\_c\_lag\_all | .9998196 .0226735 -0.01 0.994 .9563535 1.045261

sp75\_1002\_c\_lag\_all | 1.025108 .0169151 1.50 0.133 .992485 1.058803

sp75\_1003\_2\_c\_lag\_all | 1.008695 .0615102 0.14 0.887 .8950635 1.136753

sp75\_1322\_c\_lag\_all | 3.695692 .9459818 5.11 0.000 2.237766 6.103469

sp75\_1719\_2\_c\_lag\_all | 1.091256 .0873817 1.09 0.275 .9327538 1.276692

sp75\_212\_c\_lag\_all | 1.017751 .0149289 1.20 0.230 .988907 1.047435

sp75\_332\_c\_lag\_all | .926981 .0508237 -1.38 0.167 .8325338 1.032143

sp75\_501\_2\_c\_lag\_all | .9838864 .0575435 -0.28 0.781 .8773272 1.103388

sp75\_502\_c\_lag\_all | .9055969 .0846672 -1.06 0.289 .7539688 1.087718

sp75\_602\_c\_lag\_all | 1.003995 .0169002 0.24 0.813 .9714121 1.037672

sp75\_812\_c\_lag\_all | .8473807 .0734663 -1.91 0.056 .7149589 1.004329

sp75\_1003\_c\_lag\_all | 1.009079 .007445 1.22 0.221 .9945918 1.023777

sp75\_153\_c\_lag\_all | 1.115002 .1606762 0.76 0.450 .840648 1.478894

sp75\_203\_c\_lag\_all | .9927511 .0055261 -1.31 0.191 .9819791 1.003641

sp75\_213\_c\_lag\_all | 1.354813 .1057687 3.89 0.000 1.162591 1.578816

sp75\_343\_c\_lag\_all | .9679732 .0431468 -0.73 0.465 .8869958 1.056343

sp75\_373\_c\_lag\_all | 1.030446 .3464014 0.09 0.929 .533187 1.991456

sp75\_503\_c\_lag\_all | .9980805 .0012326 -1.56 0.120 .9956675 1.000499

sp75\_523\_c\_lag\_all | .9778212 .0135561 -1.62 0.106 .9516094 1.004755

sp75\_523\_3\_c\_lag\_all | .9969297 .0035023 -0.88 0.381 .9900889 1.003818

sp75\_603\_c\_lag\_all | .9949819 .0255919 -0.20 0.845 .946066 1.046427

sp75\_703\_3\_c\_lag\_all | 1.0471 .0365196 1.32 0.187 .977915 1.121181

sp48\_24\_c\_lag\_all | 1 (omitted)

sp48\_4\_c\_lag\_all | 2.98e-06 2.99e-06 -12.67 0.000 4.17e-07 .0000213

sp75\_1404\_c\_lag\_all | 1.0372 .2090825 0.18 0.856 .6986735 1.539752

sp75\_1719\_4\_c\_lag\_all | 1.013777 .0234503 0.59 0.554 .9688418 1.060797

sp75\_204\_c\_lag\_all | 1.003595 .0089732 0.40 0.688 .9861613 1.021337

sp75\_334\_c\_lag\_all | .9677712 .0183462 -1.73 0.084 .9324732 1.004405

sp75\_524\_c\_lag\_all | .9593561 .1319223 -0.30 0.763 .7327064 1.256116

sp75\_604\_c\_lag\_all | 1.001849 .0016912 1.09 0.274 .9985399 1.005169

sp75\_703\_4\_c\_lag\_all | 2.055142 .3118061 4.75 0.000 1.526502 2.766853

sp48\_25\_c\_lag\_all | .8804002 .0355506 -3.15 0.002 .8134082 .9529095

sp48\_5\_c\_lag\_all | 1.077051 .0584616 1.37 0.171 .9683524 1.19795

sp75\_1315\_c\_lag\_all | .8348592 .2672427 -0.56 0.573 .4457992 1.563461

sp75\_1403\_5\_c\_lag\_all | .9938711 .0024824 -2.46 0.014 .9890176 .9987484

sp75\_1405\_c\_lag\_all | 1.009648 .008965 1.08 0.280 .9922294 1.027373

sp75\_155\_c\_lag\_all | .5074742 .1744347 -1.97 0.048 .2587197 .9954019

sp75\_1725\_c\_lag\_all | .9975978 .0013502 -1.78 0.076 .994955 1.000248

sp75\_205\_c\_lag\_all | 1.421572 .1250978 4.00 0.000 1.196365 1.689174

sp75\_215\_c\_lag\_all | .9811481 .2045669 -0.09 0.927 .6520204 1.476413

sp75\_505\_c\_lag\_all | 1.047112 .0983119 0.49 0.624 .8711143 1.258669

sp75\_605\_c\_lag\_all | 1.003308 .0103411 0.32 0.749 .9832429 1.023782

sp48\_26\_c\_lag\_all | 1.019745 .0385535 0.52 0.605 .9469131 1.098178

sp48\_6\_c\_lag\_all | 1.03496 .039834 0.89 0.372 .9597592 1.116054

sp75\_1316\_c\_lag\_all | .9250063 .1009725 -0.71 0.475 .7468419 1.145673

sp75\_1403\_6\_c\_lag\_all | .9997395 .0025547 -0.10 0.919 .9947449 1.004759

sp75\_156\_c\_lag\_all | .4689874 .1219104 -2.91 0.004 .2817712 .7805952

sp75\_1906\_c\_lag\_all | 1.02544 .0159646 1.61 0.107 .9946226 1.057212

sp75\_1916\_c\_lag\_all | .9785585 .020243 -1.05 0.295 .9396766 1.019049

sp75\_606\_c\_lag\_all | .9986317 .0025991 -0.53 0.599 .9935506 1.003739

sp75\_816\_c\_lag\_all | .9973403 .0170282 -0.16 0.876 .964518 1.03128

sp75\_906\_c\_lag\_all | .8672681 .0962139 -1.28 0.199 .6977854 1.077916

sp48\_27\_c\_lag\_all | .9955996 .0393523 -0.11 0.911 .9213825 1.075795

sp48\_7\_c\_lag\_all | .9404038 .0329721 -1.75 0.080 .8779502 1.0073

sp75\_1403\_7\_c\_lag\_all | .9903441 .0194446 -0.49 0.621 .9529574 1.029198

sp75\_207\_c\_lag\_all | 1.323145 .2986792 1.24 0.215 .8500843 2.059457

sp75\_327\_c\_lag\_all | .9176783 .3751742 -0.21 0.834 .4118072 2.04497

sp75\_337\_c\_lag\_all | .9943427 .0247975 -0.23 0.820 .9469092 1.044152

sp75\_507\_c\_lag\_all | 1.038947 .0304305 1.30 0.192 .9809837 1.100335

sp75\_607\_c\_lag\_all | 1.003013 .0216111 0.14 0.889 .9615382 1.046277

sp75\_807\_c\_lag\_all | 1.007989 .0035442 2.26 0.024 1.001066 1.01496

sp75\_817\_c\_lag\_all | .9229103 .1502735 -0.49 0.622 .670752 1.269863

sp48\_28\_c\_lag\_all | .9661337 .0255136 -1.30 0.192 .9174 1.017456

sp48\_8\_c\_lag\_all | 1.039024 .0795129 0.50 0.617 .894306 1.207161

sp75\_1318\_c\_lag\_all | 1.007083 .2150898 0.03 0.974 .6626254 1.530602

sp75\_1403\_8\_c\_lag\_all | .9970784 .002275 -1.28 0.200 .9926295 1.001547

sp75\_208\_c\_lag\_all | 1.005861 .0070648 0.83 0.405 .992109 1.019803

sp75\_388\_c\_lag\_all | 1.069075 .0440847 1.62 0.105 .9860701 1.159067

sp75\_209\_c\_lag\_all | .9850368 .0298692 -0.50 0.619 .9282 1.045354

sp75\_389\_c\_lag\_all | 1.005911 .0980522 0.06 0.952 .8309748 1.217675

sp75\_509\_c\_lag\_all | 1.083376 .0793093 1.09 0.274 .938569 1.250523

sp75\_100\_c\_lag\_all | 1.220532 .1346981 1.81 0.071 .9831289 1.515263

sp75\_1400\_c\_lag\_all | 1.02232 .0146027 1.55 0.122 .9940957 1.051345

sp75\_1403\_10\_c\_lag\_all | 1.012902 .0055481 2.34 0.019 1.002086 1.023834

sp75\_160\_c\_lag\_all | 1.23626 .3002004 0.87 0.382 .7680914 1.989787

sp75\_1720\_c\_lag\_all | 1.012933 .0195186 0.67 0.505 .975391 1.051921

sp75\_340\_c\_lag\_all | .9911292 .0037945 -2.33 0.020 .98372 .9985942

sp75\_500\_c\_lag\_all | 1.040647 .0368319 1.13 0.260 .9709053 1.115399

sp75\_510\_c\_lag\_all | 1.333553 .3216101 1.19 0.233 .8312426 2.139403

sp75\_810\_c\_lag\_all | 1.031606 .0233202 1.38 0.169 .9868969 1.07834

mine\_time | 1.00374 .0024604 1.52 0.128 .9989297 1.008574

onsite\_insp\_hours | .9997064 .0001176 -2.50 0.013 .9994759 .9999369

|

state |

AL | .9385371 .1786027 -0.33 0.739 .6463513 1.362807

CO | .8915081 .1034018 -0.99 0.322 .7102292 1.119057

IL | 1.385889 .123874 3.65 0.000 1.163177 1.651242

IN | 1.202702 .1304509 1.70 0.089 .9723724 1.487591

MD | 1.623888 .3523969 2.23 0.025 1.0613 2.484698

MT | 5.04e-06 5.05e-06 -12.17 0.000 7.07e-07 .0000359

NM | .8237472 .139388 -1.15 0.252 .5912353 1.147698

OH | 1.127418 .1392227 0.97 0.331 .8850582 1.436145

OK | 3.03793 .5758887 5.86 0.000 2.095168 4.404907

PA | 1.463911 .1305557 4.27 0.000 1.229142 1.743521

TN | 1.662981 .206016 4.11 0.000 1.30448 2.120006

UT | .5114292 .084371 -4.06 0.000 .3701365 .7066577

VA | .9739568 .0547509 -0.47 0.639 .8723474 1.087402

WV | 1.314075 .0649011 5.53 0.000 1.192834 1.447639

WY | 1.039552 .1578119 0.26 0.798 .7720176 1.399797

|

time |

2000.25 | 1.188921 .0718976 2.86 0.004 1.056035 1.338528

2000.5 | 1.283671 .081056 3.95 0.000 1.134241 1.452787

2000.75 | .8506513 .0569645 -2.42 0.016 .7460195 .969958

2001 | .890623 .0616946 -1.67 0.094 .7775531 1.020135

2001.25 | .9975976 .076742 -0.03 0.975 .857976 1.15994

2001.5 | 1.174628 .0842973 2.24 0.025 1.020502 1.352032

2001.75 | .9189306 .0667525 -1.16 0.244 .7969851 1.059535

2002 | 1.081305 .138782 0.61 0.542 .8408124 1.390583

2002.25 | .9692588 .0704239 -0.43 0.667 .8406082 1.117599

2002.5 | .9887465 .0691402 -0.16 0.871 .8621104 1.133984

2002.75 | .8216958 .0622314 -2.59 0.010 .7083454 .9531847

2003 | .8231886 .0693339 -2.31 0.021 .6979207 .9709406

2003.25 | .9145504 .0868047 -0.94 0.347 .759304 1.101538

2003.5 | .9408479 .0696014 -0.82 0.410 .8138603 1.08765

2003.75 | .6932704 .0596066 -4.26 0.000 .5857568 .8205177

2004 | .730165 .0622431 -3.69 0.000 .6178174 .8629425

2004.25 | .7795434 .061666 -3.15 0.002 .6675837 .9102798

2004.5 | .8166818 .0645176 -2.56 0.010 .6995329 .9534492

2004.75 | .6439572 .0542133 -5.23 0.000 .5460045 .7594825

2005 | .678586 .0587628 -4.48 0.000 .5726567 .80411

2005.25 | .6861478 .0570844 -4.53 0.000 .58291 .8076698

2005.5 | .8067329 .0652982 -2.65 0.008 .6883862 .9454256

2005.75 | .6429687 .0555977 -5.11 0.000 .542733 .7617167

2006 | .7154667 .0646573 -3.70 0.000 .5993295 .8541087

2006.25 | .6192769 .0518206 -5.73 0.000 .525602 .729647

2006.5 | .7496973 .0624753 -3.46 0.001 .6367251 .8827139

2006.75 | .6286349 .0559832 -5.21 0.000 .5279523 .7485182

2007 | .6100706 .0492543 -6.12 0.000 .5207844 .7146644

2007.25 | .5990809 .0575228 -5.34 0.000 .4963117 .7231301

2007.5 | .7944165 .0898613 -2.03 0.042 .636449 .9915917

2007.75 | .6569691 .0604834 -4.56 0.000 .5485038 .7868832

2008 | .6155661 .0538379 -5.55 0.000 .5185945 .7306703

2008.25 | .5997433 .0528471 -5.80 0.000 .5046157 .7128039

2008.5 | .7108514 .0678337 -3.58 0.000 .5895927 .8570488

2008.75 | .5825781 .0514714 -6.12 0.000 .4899476 .6927216

2009 | .5959332 .0500621 -6.16 0.000 .5054654 .702593

2009.25 | .6270239 .0637116 -4.59 0.000 .5137997 .7651988

2009.5 | .6246394 .0603777 -4.87 0.000 .5168353 .7549299

2009.75 | .5349208 .0460369 -7.27 0.000 .4518897 .6332082

2010 | .4754444 .044184 -8.00 0.000 .3962742 .5704317

2010.25 | .5255856 .059114 -5.72 0.000 .4216058 .6552098

2010.5 | .6855453 .0608914 -4.25 0.000 .5760111 .8159085

2010.75 | .5593345 .0555109 -5.85 0.000 .4604627 .6794362

2011 | .535254 .0504127 -6.64 0.000 .4450305 .643769

2011.25 | .4875917 .0441315 -7.94 0.000 .4083332 .5822344

2011.5 | .5597679 .049026 -6.62 0.000 .4714736 .6645973

2011.75 | .4479242 .0406807 -8.84 0.000 .3748849 .5351938

2012 | .4775038 .0479141 -7.37 0.000 .3922518 .5812845

2012.25 | .4647614 .0439431 -8.10 0.000 .3861438 .5593853

2012.5 | .5490191 .0575671 -5.72 0.000 .4470285 .674279

2012.75 | .3792428 .0388572 -9.46 0.000 .3102439 .4635873

2013 | .4675426 .0537729 -6.61 0.000 .3731839 .5857597

2013.25 | .4105879 .0422649 -8.65 0.000 .3355719 .5023736

2013.5 | .4825644 .0524856 -6.70 0.000 .3899198 .5972214

2013.75 | .360781 .0378123 -9.73 0.000 .2937865 .4430528

2014 | .4256655 .044282 -8.21 0.000 .3471506 .5219379

2014.25 | .4268965 .0500288 -7.26 0.000 .3392881 .5371265

2014.5 | .4543489 .0479343 -7.48 0.000 .3694764 .5587175

2014.75 | .4834951 .0571029 -6.15 0.000 .3835847 .6094285

2015 | .3902755 .0423847 -8.66 0.000 .315449 .4828513

2015.25 | .3409013 .0369188 -9.94 0.000 .2757055 .4215138

2015.5 | .4582373 .0494837 -7.23 0.000 .3708273 .5662512

2015.75 | .3448947 .0419972 -8.74 0.000 .2716673 .4378606

2016 | .3636594 .0491294 -7.49 0.000 .2790614 .4739035

|

\_cons | .0000826 4.74e-06 -163.97 0.000 .0000738 .0000925

ln(hours) | 1 (exposure)

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.

. pause "next"

.

. eststo clear

. eststo: nbreg dv `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

note: sp48\_24\_c\_lag\_all omitted because of collinearity

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -72883.827

Iteration 1: log pseudolikelihood = -37321.375

Iteration 2: log pseudolikelihood = -35871.643

Iteration 3: log pseudolikelihood = -35796.692

Iteration 4: log pseudolikelihood = -35795.324

Iteration 5: log pseudolikelihood = -35795.317

Iteration 6: log pseudolikelihood = -35795.316

Iteration 7: log pseudolikelihood = -35795.316

Iteration 8: log pseudolikelihood = -35795.316

Iteration 9: log pseudolikelihood = -35795.316

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -36163.905

Iteration 1: log pseudolikelihood = -35503.284

Iteration 2: log pseudolikelihood = -35464.22

Iteration 3: log pseudolikelihood = -35464.069

Iteration 4: log pseudolikelihood = -35464.069

Fitting full model:

Iteration 0: log pseudolikelihood = -34063.728

Iteration 1: log pseudolikelihood = -33769.818

Iteration 2: log pseudolikelihood = -33756.861

Iteration 3: log pseudolikelihood = -33756.84

Iteration 4: log pseudolikelihood = -33756.84

Negative binomial regression Number of obs = 19,291

Wald chi2(168) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -33756.84 Pseudo R2 = 0.0481

(Std. Err. adjusted for 1,288 clusters in mineid)

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| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

-----------------------+----------------------------------------------------------------

sp48\_11\_c\_lag\_all | 1.060814 .032781 1.91 0.056 .9984719 1.12705

sp75\_1311\_c\_lag\_all | .9718177 .0838921 -0.33 0.741 .8205497 1.150972

sp75\_1400\_1\_c\_lag\_all | .9217199 .1149052 -0.65 0.513 .721913 1.176828

sp75\_1404\_1\_c\_lag\_all | .6611609 .0670529 -4.08 0.000 .5419772 .8065538

sp75\_1405\_1\_c\_lag\_all | .9288064 .0946114 -0.73 0.468 .7607095 1.134048

sp75\_500\_1\_c\_lag\_all | .8074402 .119054 -1.45 0.147 .6047891 1.077995

sp75\_501\_c\_lag\_all | 1.106281 .051153 2.18 0.029 1.010432 1.211222

sp75\_506\_1\_c\_lag\_all | 1.093 .0411143 2.36 0.018 1.015316 1.176627

sp75\_507\_1\_c\_lag\_all | 1.009812 .0122141 0.81 0.420 .9861545 1.034038

sp75\_508\_1\_c\_lag\_all | .8708539 .1545926 -0.78 0.436 .6149522 1.233245

sp75\_512\_1\_c\_lag\_all | .7731876 .0857807 -2.32 0.020 .6220839 .9609942

sp75\_811\_c\_lag\_all | .9905659 .019442 -0.48 0.629 .953184 1.029414

sp75\_1002\_c\_lag\_all | 1.027657 .0131145 2.14 0.033 1.002272 1.053685

sp75\_1003\_2\_c\_lag\_all | 1.016508 .0574125 0.29 0.772 .9099858 1.135499

sp75\_1322\_c\_lag\_all | 3.076237 .7177481 4.82 0.000 1.94723 4.859843

sp75\_1719\_2\_c\_lag\_all | 1.072225 .0741102 1.01 0.313 .9363808 1.227777

sp75\_212\_c\_lag\_all | 1.017308 .0126548 1.38 0.168 .9928051 1.042416

sp75\_332\_c\_lag\_all | .9266445 .0450657 -1.57 0.117 .8423964 1.019318

sp75\_501\_2\_c\_lag\_all | .9876198 .0545456 -0.23 0.822 .8862954 1.100528

sp75\_502\_c\_lag\_all | .9317577 .0762942 -0.86 0.388 .793606 1.093959

sp75\_602\_c\_lag\_all | 1.003058 .01313 0.23 0.816 .977651 1.029125

sp75\_812\_c\_lag\_all | .8774496 .0739941 -1.55 0.121 .7437749 1.035149

sp75\_1003\_c\_lag\_all | 1.00888 .0069184 1.29 0.197 .9954104 1.022531

sp75\_153\_c\_lag\_all | 1.204922 .1457627 1.54 0.123 .9505754 1.527323

sp75\_203\_c\_lag\_all | .9956941 .0050329 -0.85 0.393 .9858785 1.005607

sp75\_213\_c\_lag\_all | 1.367682 .1014372 4.22 0.000 1.182644 1.581672

sp75\_343\_c\_lag\_all | .9745875 .0366969 -0.68 0.494 .9052528 1.049233

sp75\_373\_c\_lag\_all | 1.013966 .3185326 0.04 0.965 .5478004 1.876827

sp75\_503\_c\_lag\_all | .9982445 .0010577 -1.66 0.097 .9961736 1.00032

sp75\_523\_c\_lag\_all | .9803503 .0122234 -1.59 0.111 .9566832 1.004603

sp75\_523\_3\_c\_lag\_all | .9974168 .0031335 -0.82 0.410 .991294 1.003577

sp75\_603\_c\_lag\_all | .9928967 .023758 -0.30 0.766 .9474068 1.040571

sp75\_703\_3\_c\_lag\_all | 1.054254 .0330102 1.69 0.092 .9915009 1.12098

sp48\_24\_c\_lag\_all | 1 (omitted)

sp48\_4\_c\_lag\_all | 1.08e-08 1.09e-08 -18.26 0.000 1.51e-09 7.75e-08

sp75\_1404\_c\_lag\_all | 1.079933 .1704468 0.49 0.626 .7925946 1.471441

sp75\_1719\_4\_c\_lag\_all | 1.022116 .0187045 1.20 0.232 .9861053 1.059441

sp75\_204\_c\_lag\_all | 1.001449 .0077643 0.19 0.852 .9863463 1.016783

sp75\_334\_c\_lag\_all | .9668567 .0167647 -1.94 0.052 .9345504 1.00028

sp75\_524\_c\_lag\_all | .9912482 .1301084 -0.07 0.947 .7664012 1.282061

sp75\_604\_c\_lag\_all | 1.000818 .001387 0.59 0.555 .9981035 1.00354

sp75\_703\_4\_c\_lag\_all | 1.713398 .2317726 3.98 0.000 1.314363 2.233576

sp48\_25\_c\_lag\_all | .8831346 .0328206 -3.34 0.001 .8210943 .9498625

sp48\_5\_c\_lag\_all | 1.087176 .055611 1.63 0.102 .9834663 1.201823

sp75\_1315\_c\_lag\_all | .922591 .2527519 -0.29 0.769 .539281 1.57835

sp75\_1403\_5\_c\_lag\_all | .9954194 .002256 -2.03 0.043 .9910076 .9998509

sp75\_1405\_c\_lag\_all | 1.007521 .0080856 0.93 0.350 .9917976 1.023494

sp75\_155\_c\_lag\_all | .6404869 .1962585 -1.45 0.146 .351305 1.167713

sp75\_1725\_c\_lag\_all | .9977336 .0011817 -1.92 0.055 .9954202 1.000052

sp75\_205\_c\_lag\_all | 1.368855 .1262133 3.41 0.001 1.142546 1.63999

sp75\_215\_c\_lag\_all | 1.03205 .1475371 0.22 0.825 .7798606 1.365792

sp75\_505\_c\_lag\_all | 1.021341 .0916168 0.24 0.814 .8566743 1.217659

sp75\_605\_c\_lag\_all | .9990097 .0091215 -0.11 0.914 .9812908 1.017049

sp48\_26\_c\_lag\_all | 1.021159 .0396138 0.54 0.589 .9463958 1.101829

sp48\_6\_c\_lag\_all | 1.04572 .034934 1.34 0.181 .979444 1.116481

sp75\_1316\_c\_lag\_all | .9350428 .116753 -0.54 0.591 .732061 1.194306

sp75\_1403\_6\_c\_lag\_all | .9998617 .0023577 -0.06 0.953 .9952513 1.004493

sp75\_156\_c\_lag\_all | .5218856 .1370158 -2.48 0.013 .3119615 .8730713

sp75\_1906\_c\_lag\_all | 1.018598 .0141321 1.33 0.184 .9912723 1.046676

sp75\_1916\_c\_lag\_all | .9889859 .017603 -0.62 0.534 .9550795 1.024096

sp75\_606\_c\_lag\_all | .999393 .0022493 -0.27 0.787 .9949942 1.003811

sp75\_816\_c\_lag\_all | 1.00895 .0153244 0.59 0.557 .9793572 1.039437

sp75\_906\_c\_lag\_all | .8456946 .0816791 -1.74 0.083 .6998461 1.021938

sp48\_27\_c\_lag\_all | .9883639 .0345593 -0.33 0.738 .9228979 1.058474

sp48\_7\_c\_lag\_all | .9396033 .0273845 -2.14 0.033 .8874348 .9948385

sp75\_1403\_7\_c\_lag\_all | .9985822 .0175118 -0.08 0.936 .9648429 1.033501

sp75\_207\_c\_lag\_all | 1.21748 .1367365 1.75 0.080 .976928 1.517264

sp75\_327\_c\_lag\_all | .9065288 .2460731 -0.36 0.718 .5325089 1.54325

sp75\_337\_c\_lag\_all | .9890963 .0203089 -0.53 0.593 .9500819 1.029713

sp75\_507\_c\_lag\_all | 1.0228 .0236611 0.97 0.330 .9774608 1.070242

sp75\_607\_c\_lag\_all | .9998366 .0202827 -0.01 0.994 .9608632 1.040391

sp75\_807\_c\_lag\_all | 1.006927 .0029396 2.36 0.018 1.001182 1.012705

sp75\_817\_c\_lag\_all | .9299217 .1341777 -0.50 0.615 .7008534 1.233859

sp48\_28\_c\_lag\_all | .9646126 .0251502 -1.38 0.167 .9165573 1.015187

sp48\_8\_c\_lag\_all | 1.013473 .0494085 0.27 0.784 .9211167 1.115089

sp75\_1318\_c\_lag\_all | 1.056008 .1780531 0.32 0.747 .7588331 1.469562

sp75\_1403\_8\_c\_lag\_all | .9959243 .0017659 -2.30 0.021 .9924692 .9993914

sp75\_208\_c\_lag\_all | 1.007462 .0064491 1.16 0.245 .9949011 1.020182

sp75\_388\_c\_lag\_all | 1.06028 .0367514 1.69 0.091 .9906406 1.134814

sp75\_209\_c\_lag\_all | .9843221 .0275388 -0.56 0.572 .9318002 1.039804

sp75\_389\_c\_lag\_all | 1.013316 .0882664 0.15 0.879 .8542786 1.20196

sp75\_509\_c\_lag\_all | 1.105856 .0743489 1.50 0.134 .9693275 1.261614

sp75\_100\_c\_lag\_all | 1.194057 .1209801 1.75 0.080 .9789998 1.456356

sp75\_1400\_c\_lag\_all | 1.022745 .0128542 1.79 0.074 .9978592 1.048252

sp75\_1403\_10\_c\_lag\_all | 1.008666 .0045424 1.92 0.055 .9998017 1.017608

sp75\_160\_c\_lag\_all | 1.136848 .2238938 0.65 0.515 .7727956 1.672401

sp75\_1720\_c\_lag\_all | 1.012551 .0186063 0.68 0.497 .9767324 1.049683

sp75\_340\_c\_lag\_all | .9902185 .0031991 -3.04 0.002 .9839681 .9965086

sp75\_500\_c\_lag\_all | 1.039818 .0320532 1.27 0.205 .9788555 1.104578

sp75\_510\_c\_lag\_all | 1.359264 .2645814 1.58 0.115 .9281478 1.99063

sp75\_810\_c\_lag\_all | 1.03343 .0186117 1.83 0.068 .9975884 1.07056

mine\_time | 1.003992 .0023912 1.67 0.094 .9993162 1.00869

onsite\_insp\_hours | .9997821 .0001064 -2.05 0.041 .9995736 .9999907

|

state |

AL | .8754116 .1493495 -0.78 0.435 .626604 1.223014

CO | .8273397 .0967474 -1.62 0.105 .6578792 1.040451

IL | 1.312199 .1051127 3.39 0.001 1.12154 1.535269

IN | 1.202738 .1278139 1.74 0.082 .9765951 1.481247

MD | 1.530122 .2587744 2.52 0.012 1.098426 2.13148

MT | 1.42e-08 1.43e-08 -18.03 0.000 2.00e-09 1.01e-07

NM | .8395796 .1003491 -1.46 0.143 .664238 1.061207

OH | 1.170194 .1316169 1.40 0.162 .9386842 1.458802

OK | 2.837116 .569251 5.20 0.000 1.914646 4.20403

PA | 1.377295 .1186419 3.72 0.000 1.163331 1.630611

TN | 1.640543 .1924979 4.22 0.000 1.303495 2.064742

UT | .4841004 .0721558 -4.87 0.000 .361462 .648348

VA | .9587243 .0519052 -0.78 0.436 .8622036 1.06605

WV | 1.240205 .0603697 4.42 0.000 1.127352 1.364356

WY | .9673281 .1362438 -0.24 0.814 .7339829 1.274858

|

time |

2000.25 | 1.156348 .0611221 2.75 0.006 1.042548 1.282571

2000.5 | 1.265542 .0677945 4.40 0.000 1.139405 1.405642

2000.75 | .8827043 .0525885 -2.09 0.036 .785423 .9920347

2001 | .8924877 .0538704 -1.88 0.060 .7929101 1.004571

2001.25 | .9901124 .0647948 -0.15 0.879 .8709241 1.125612

2001.5 | 1.173825 .0749449 2.51 0.012 1.035755 1.3303

2001.75 | .9092084 .0571527 -1.51 0.130 .8038168 1.028418

2002 | 1.004069 .081953 0.05 0.960 .8556331 1.178255

2002.25 | .9511164 .059068 -0.81 0.420 .8421137 1.074228

2002.5 | .9891682 .0625381 -0.17 0.863 .8738858 1.119658

2002.75 | .842674 .0574078 -2.51 0.012 .7373452 .9630488

2003 | .7898011 .0577627 -3.23 0.001 .6843282 .9115301

2003.25 | .8598216 .064681 -2.01 0.045 .7419519 .9964165

2003.5 | .9114051 .0589774 -1.43 0.152 .8028415 1.034649

2003.75 | .69183 .0522788 -4.88 0.000 .5965922 .8022713

2004 | .7228271 .0548651 -4.28 0.000 .6229099 .8387714

2004.25 | .7884812 .0562537 -3.33 0.001 .6855875 .9068173

2004.5 | .8354706 .0591634 -2.54 0.011 .7271999 .9598613

2004.75 | .6567275 .0498845 -5.54 0.000 .5658856 .7621523

2005 | .665516 .0506144 -5.35 0.000 .5733532 .7724934

2005.25 | .6962219 .0534111 -4.72 0.000 .5990281 .8091857

2005.5 | .8148395 .0596705 -2.80 0.005 .7058928 .9406009

2005.75 | .6615169 .0518385 -5.27 0.000 .5673331 .7713362

2006 | .6977766 .0554443 -4.53 0.000 .5971468 .8153643

2006.25 | .6312354 .0479161 -6.06 0.000 .5439737 .7324952

2006.5 | .7709121 .0576595 -3.48 0.001 .6657945 .8926261

2006.75 | .6333066 .0494144 -5.85 0.000 .5434983 .737955

2007 | .6335864 .0470818 -6.14 0.000 .547713 .7329234

2007.25 | .6131218 .0564123 -5.32 0.000 .5119518 .7342846

2007.5 | .7860994 .0720076 -2.63 0.009 .6569108 .9406942

2007.75 | .6736367 .0545733 -4.88 0.000 .5747347 .7895581

2008 | .6212246 .0485253 -6.09 0.000 .5330393 .7239991

2008.25 | .6057568 .049808 -6.10 0.000 .515595 .711685

2008.5 | .7274856 .0653907 -3.54 0.000 .6099769 .8676318

2008.75 | .5956434 .0485184 -6.36 0.000 .5077517 .6987492

2009 | .5978261 .0445638 -6.90 0.000 .5165635 .6918724

2009.25 | .5995665 .0528726 -5.80 0.000 .5043992 .7126895

2009.5 | .6157026 .0533955 -5.59 0.000 .5194602 .7297762

2009.75 | .529203 .0410846 -8.20 0.000 .4545057 .6161766

2010 | .4786825 .0412666 -8.55 0.000 .4042654 .5667983

2010.25 | .5322512 .0564478 -5.95 0.000 .4323571 .6552253

2010.5 | .6557709 .0532518 -5.20 0.000 .5592815 .7689071

2010.75 | .5397476 .0463111 -7.19 0.000 .4562012 .6385943

2011 | .5249733 .0452639 -7.47 0.000 .4433486 .6216258

2011.25 | .4821771 .0401282 -8.76 0.000 .4096066 .5676049

2011.5 | .556037 .0443626 -7.36 0.000 .4755453 .650153

2011.75 | .4376589 .0359341 -10.06 0.000 .3726041 .5140718

2012 | .4679677 .0415504 -8.55 0.000 .3932227 .5569205

2012.25 | .4474617 .0380687 -9.45 0.000 .3787374 .5286564

2012.5 | .5241234 .048488 -6.98 0.000 .4372066 .6283192

2012.75 | .379867 .0357663 -10.28 0.000 .3158544 .4568527

2013 | .4376264 .0430213 -8.41 0.000 .3609319 .5306177

2013.25 | .3997191 .0371664 -9.86 0.000 .3331264 .4796239

2013.5 | .4671269 .0454163 -7.83 0.000 .3860798 .5651877

2013.75 | .3632356 .0345808 -10.64 0.000 .3014061 .4377485

2014 | .4146502 .0412507 -8.85 0.000 .3411942 .5039206

2014.25 | .4122699 .044626 -8.19 0.000 .3334599 .5097059

2014.5 | .4458673 .0431951 -8.34 0.000 .3687587 .5390995

2014.75 | .444958 .046833 -7.69 0.000 .3620159 .546903

2015 | .3830139 .0393808 -9.33 0.000 .313109 .4685259

2015.25 | .3371589 .0339412 -10.80 0.000 .2767871 .4106989

2015.5 | .4571591 .0468069 -7.64 0.000 .3740382 .5587517

2015.75 | .3379367 .0395227 -9.28 0.000 .2687106 .4249971

2016 | .3616147 .0452221 -8.13 0.000 .2830076 .4620554

|

\_cons | .0000833 4.31e-06 -181.40 0.000 .0000752 .0000921

ln(hours) | 1 (exposure)

-----------------------+----------------------------------------------------------------

/lnalpha | -1.245123 .080148 -1.40221 -1.088035

-----------------------+----------------------------------------------------------------

alpha | .2879056 .0230751 .2460526 .3368777

----------------------------------------------------------------------------------------

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.C.V.4.csv"', replace plain wide p eform

(note: file C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.SP.C.V.4.csv not found)

(output written to C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.SP.C.V.4.csv)

. est store nbin

.

. pause "next"

.

. // test for over-dispersion

. lrtest pois nbin, stats force

Likelihood-ratio test LR chi2(2) = 4076.95

(Assumption: pois nested in nbin) Prob > chi2 = 0.0000

Akaike's information criterion and Bayesian information criterion

-----------------------------------------------------------------------------

Model | Obs ll(null) ll(model) df AIC BIC

-------------+---------------------------------------------------------------

pois | 19,291 -40650.43 -35795.32 168 71926.63 73248.35

nbin | 19,291 -35464.07 -33756.84 170 67853.68 69191.14

-----------------------------------------------------------------------------

Note: N=Obs used in calculating BIC; see [R] BIC note.

.

. pause "next"

.

. // final model + diagnostics/assessment

. quietly nbreg dv `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

. predict cv4\_yhat

(option n assumed; predicted number of events)

(10,998 missing values generated)

. gen cv4\_res = dv - cv4\_yhat

(10,998 missing values generated)

.

. summ dv cv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

-------------+---------------------------------------------------------

dv | 30,289 2.177721 3.851734 0 71

cv4\_yhat | 19,291 2.922108 4.116023 1.28e-09 52.00314

. /\*

> pause "next"

>

> scatter dv cv4\_yhat

>

> pause "next"

>

> scatter cv4\_res dv

>

> pause "next"

>

> scatter cv4\_res cv4\_yhat

> \*/

. pause "complete: C.V.4"

.