. // Model C.PP.3

.

. // poisson model

. glm dv `pp\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, family(poisson) link(log) vce(cl mineid) exposure(hours) iter(50) eform

Iteration 0: log pseudolikelihood = -44311.599

Iteration 1: log pseudolikelihood = -41265.309

Iteration 2: log pseudolikelihood = -41247.933

Iteration 3: log pseudolikelihood = -41247.88

Iteration 4: log pseudolikelihood = -41247.868

Iteration 5: log pseudolikelihood = -41247.865

Iteration 6: log pseudolikelihood = -41247.864

Iteration 7: log pseudolikelihood = -41247.864

Iteration 8: log pseudolikelihood = -41247.864

Iteration 9: log pseudolikelihood = -41247.864

Generalized linear models No. of obs = 22,446

Optimization : ML Residual df = 22,281

Scale parameter = 1

Deviance = 41411.89722 (1/df) Deviance = 1.858619

Pearson = 1001351.77 (1/df) Pearson = 44.94196

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

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

AIC = 3.689999

Log pseudolikelihood = -41247.86426 BIC = -181818.5

(Std. Err. adjusted for 1,293 clusters in mineid)

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

| Robust

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

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

sp48\_11\_pp\_c\_4lag | .9998558 .0003811 -0.38 0.705 .9991091 1.000603

sp48\_24\_pp\_c\_4lag | .9999385 .000136 -0.45 0.651 .9996719 1.000205

sp48\_25\_pp\_c\_4lag | .9996973 .0006744 -0.45 0.654 .9983763 1.00102

sp48\_26\_pp\_c\_4lag | 1.001256 .0006932 1.81 0.070 .9998987 1.002616

sp48\_27\_pp\_c\_4lag | .9995121 .0006156 -0.79 0.428 .9983063 1.000719

sp48\_28\_pp\_c\_4lag | .997784 .0008045 -2.75 0.006 .9962084 .9993621

sp48\_4\_pp\_c\_4lag | 1.003385 .0014199 2.39 0.017 1.000606 1.006172

sp48\_5\_pp\_c\_4lag | 1.000036 .0010696 0.03 0.973 .997942 1.002135

sp48\_6\_pp\_c\_4lag | 1.00038 .0005176 0.73 0.463 .9993655 1.001395

sp48\_7\_pp\_c\_4lag | 1.000379 .0003397 1.11 0.265 .999713 1.001045

sp48\_8\_pp\_c\_4lag | 1.00077 .0008711 0.88 0.377 .9990637 1.002478

sp75\_100\_pp\_c\_4lag | 1.003421 .0012981 2.64 0.008 1.00088 1.005969

sp75\_1002\_pp\_c\_4lag | 1.000108 .0001958 0.55 0.581 .9997245 1.000492

sp75\_1003\_pp\_c\_4lag | .9997773 .0001954 -1.14 0.254 .9993943 1.00016

sp75\_1003\_2\_pp\_c\_4lag | .998786 .0003717 -3.26 0.001 .9980577 .9995148

sp75\_1311\_pp\_c\_4lag | .9991988 .0009162 -0.87 0.382 .9974047 1.000996

sp75\_1315\_pp\_c\_4lag | .982932 .007875 -2.15 0.032 .9676178 .9984886

sp75\_1316\_pp\_c\_4lag | .9989216 .0014156 -0.76 0.446 .9961509 1.0017

sp75\_1318\_pp\_c\_4lag | .6091777 .0234693 -12.87 0.000 .5648726 .6569579

sp75\_1400\_pp\_c\_4lag | .9986458 .0006013 -2.25 0.024 .997468 .999825

sp75\_1400\_1\_pp\_c\_4lag | .9994769 .0018653 -0.28 0.779 .9958277 1.00314

sp75\_1403\_10\_pp\_c\_4lag | 1.000443 .0001367 3.24 0.001 1.000175 1.000711

sp75\_1403\_5\_pp\_c\_4lag | .9997192 .0000922 -3.05 0.002 .9995385 .9998999

sp75\_1403\_6\_pp\_c\_4lag | 1.000007 .0000734 0.09 0.927 .9998629 1.00015

sp75\_1403\_7\_pp\_c\_4lag | 1.000284 .0003693 0.77 0.442 .9995602 1.001008

sp75\_1403\_8\_pp\_c\_4lag | .9997606 .0000885 -2.71 0.007 .9995872 .999934

sp75\_1404\_pp\_c\_4lag | 1.000605 .0018385 0.33 0.742 .9970079 1.004215

sp75\_1404\_1\_pp\_c\_4lag | .9991564 .0015759 -0.54 0.593 .9960725 1.00225

sp75\_1405\_pp\_c\_4lag | .9996463 .0001195 -2.96 0.003 .9994121 .9998806

sp75\_1405\_1\_pp\_c\_4lag | .9991306 .0010747 -0.81 0.419 .9970264 1.001239

sp75\_153\_pp\_c\_4lag | 1.001949 .0018467 1.06 0.291 .9983362 1.005575

sp75\_156\_pp\_c\_4lag | .9965005 .0014067 -2.48 0.013 .9937472 .9992615

sp75\_160\_pp\_c\_4lag | 1.006998 .006166 1.14 0.255 .9949848 1.019156

sp75\_1719\_2\_pp\_c\_4lag | .9994708 .0007927 -0.67 0.505 .9979183 1.001026

sp75\_1719\_4\_pp\_c\_4lag | 1.000276 .0003157 0.87 0.382 .9996574 1.000895

sp75\_1720\_pp\_c\_4lag | 1.000183 .0003112 0.59 0.557 .9995731 1.000793

sp75\_1725\_pp\_c\_4lag | .9999861 .000031 -0.45 0.654 .9999254 1.000047

sp75\_1906\_pp\_c\_4lag | 1.00002 .0005193 0.04 0.970 .9990024 1.001038

sp75\_1916\_pp\_c\_4lag | 1.000267 .0004675 0.57 0.569 .9993506 1.001183

sp75\_203\_pp\_c\_4lag | 1.000186 .0001116 1.67 0.095 .9999677 1.000405

sp75\_204\_pp\_c\_4lag | 1.00018 .0001713 1.05 0.292 .9998448 1.000516

sp75\_205\_pp\_c\_4lag | 1.002809 .0042575 0.66 0.509 .994499 1.011188

sp75\_207\_pp\_c\_4lag | 1.003046 .0014288 2.13 0.033 1.000249 1.00585

sp75\_208\_pp\_c\_4lag | 1.000168 .0001475 1.14 0.256 .9998784 1.000457

sp75\_209\_pp\_c\_4lag | .9982909 .0007789 -2.19 0.028 .9967655 .9998186

sp75\_212\_pp\_c\_4lag | 1.001156 .0005317 2.17 0.030 1.000114 1.002198

sp75\_213\_pp\_c\_4lag | 1.002779 .0004975 5.59 0.000 1.001804 1.003754

sp75\_215\_pp\_c\_4lag | 1.000046 .0018154 0.03 0.980 .9964944 1.003611

sp75\_332\_pp\_c\_4lag | .9986432 .0009749 -1.39 0.164 .9967343 1.000556

sp75\_334\_pp\_c\_4lag | 1.000146 .0003386 0.43 0.666 .9994828 1.00081

sp75\_337\_pp\_c\_4lag | .9993551 .0002572 -2.51 0.012 .9988511 .9998593

sp75\_340\_pp\_c\_4lag | .9998614 .0001076 -1.29 0.198 .9996506 1.000072

sp75\_343\_pp\_c\_4lag | 1.00079 .0007485 1.06 0.291 .9993238 1.002258

sp75\_373\_pp\_c\_4lag | 1.020836 .0109441 1.92 0.054 .9996102 1.042513

sp75\_388\_pp\_c\_4lag | .9995639 .0007622 -0.57 0.567 .9980712 1.001059

sp75\_389\_pp\_c\_4lag | 1.000664 .0015242 0.44 0.663 .9976815 1.003656

sp75\_500\_pp\_c\_4lag | 1.000132 .0007009 0.19 0.850 .9987597 1.001507

sp75\_500\_1\_pp\_c\_4lag | .997331 .0034952 -0.76 0.446 .990504 1.004205

sp75\_501\_pp\_c\_4lag | .999028 .0007562 -1.28 0.199 .997547 1.000511

sp75\_501\_2\_pp\_c\_4lag | .9982925 .0014929 -1.14 0.253 .9953708 1.001223

sp75\_502\_pp\_c\_4lag | 1.003834 .0016469 2.33 0.020 1.000612 1.007067

sp75\_503\_pp\_c\_4lag | 1.000009 .000027 0.33 0.745 .999956 1.000062

sp75\_505\_pp\_c\_4lag | 1.000026 .0021451 0.01 0.990 .9958305 1.004239

sp75\_506\_1\_pp\_c\_4lag | 1.001214 .0006526 1.86 0.063 .999936 1.002494

sp75\_507\_pp\_c\_4lag | 1.000154 .0004003 0.39 0.700 .9993699 1.000939

sp75\_507\_1\_pp\_c\_4lag | 1.000325 .0003224 1.01 0.313 .9996935 1.000957

sp75\_508\_1\_pp\_c\_4lag | .9910776 .0009908 -8.96 0.000 .9891376 .9930215

sp75\_509\_pp\_c\_4lag | 1.002343 .0013382 1.75 0.080 .9997234 1.004969

sp75\_510\_pp\_c\_4lag | 1.003537 .0024699 1.43 0.151 .9987075 1.008389

sp75\_512\_1\_pp\_c\_4lag | 1.000743 .002604 0.29 0.775 .9956524 1.00586

sp75\_523\_pp\_c\_4lag | .9997301 .0003356 -0.80 0.421 .9990725 1.000388

sp75\_523\_3\_pp\_c\_4lag | .9996676 .0000887 -3.75 0.000 .9994937 .9998415

sp75\_524\_pp\_c\_4lag | 1.002363 .0013526 1.75 0.080 .999715 1.005017

sp75\_602\_pp\_c\_4lag | 1.000107 .0003117 0.34 0.731 .9994965 1.000718

sp75\_603\_pp\_c\_4lag | 1.000301 .0003806 0.79 0.429 .9995555 1.001048

sp75\_604\_pp\_c\_4lag | 1.000005 .0000499 0.09 0.926 .9999068 1.000102

sp75\_605\_pp\_c\_4lag | 1.000058 .0001603 0.36 0.717 .9997441 1.000372

sp75\_606\_pp\_c\_4lag | .9999631 .0001169 -0.32 0.752 .999734 1.000192

sp75\_607\_pp\_c\_4lag | .9995629 .0004381 -1.00 0.319 .9987046 1.000422

sp75\_703\_3\_pp\_c\_4lag | 1.000417 .0007647 0.55 0.585 .9989197 1.001917

sp75\_703\_4\_pp\_c\_4lag | .9978132 .0031906 -0.68 0.494 .9915793 1.004086

sp75\_807\_pp\_c\_4lag | 1.000136 .0000945 1.44 0.150 .999951 1.000321

sp75\_810\_pp\_c\_4lag | 1.000969 .0002905 3.34 0.001 1.0004 1.001539

sp75\_811\_pp\_c\_4lag | 1.000451 .0006399 0.71 0.481 .9991978 1.001706

sp75\_812\_pp\_c\_4lag | .9986897 .001447 -0.90 0.365 .9958576 1.00153

sp75\_816\_pp\_c\_4lag | .9999894 .000216 -0.05 0.961 .9995661 1.000413

sp75\_817\_pp\_c\_4lag | .9972172 .0016729 -1.66 0.097 .9939437 1.000501

sp75\_906\_pp\_c\_4lag | .994301 .0022229 -2.56 0.011 .9899538 .9986673

mine\_time | 1.001178 .0015112 0.78 0.436 .9982202 1.004144

onsite\_insp\_hours | .9996548 .0001244 -2.78 0.006 .999411 .9998986

|

state |

AL | .9491153 .0739387 -0.67 0.503 .8147194 1.105681

AR | 1.795758 .0968502 10.85 0.000 1.615624 1.995977

CO | .646536 .0700658 -4.02 0.000 .5228139 .7995365

IL | 1.231198 .0989631 2.59 0.010 1.051741 1.441275

IN | 1.084456 .1261337 0.70 0.486 .863392 1.362121

MD | 1.138297 .1440111 1.02 0.306 .8883136 1.45863

MT | .5323333 .0284247 -11.81 0.000 .4794381 .5910643

NM | .7018796 .0319253 -7.78 0.000 .6420154 .7673259

OH | 1.02519 .0837818 0.30 0.761 .8734572 1.203282

OK | 1.575069 .2577992 2.78 0.006 1.142824 2.1708

PA | 1.00986 .1067172 0.09 0.926 .8209379 1.242259

TN | 1.568875 .1805339 3.91 0.000 1.252099 1.965794

UT | .4312129 .0676082 -5.36 0.000 .3171284 .5863383

VA | .859596 .064725 -2.01 0.045 .7416543 .9962935

WV | 1.075931 .0549864 1.43 0.152 .9733814 1.189285

WY | .7229907 .0395942 -5.92 0.000 .6494072 .8049118

|

time |

2000.75 | 1.512472 .1120836 5.58 0.000 1.308001 1.748907

2001 | 1.495054 .1140256 5.27 0.000 1.28747 1.736108

2001.25 | 1.575864 .1236072 5.80 0.000 1.351302 1.837744

2001.5 | 1.930145 .1557577 8.15 0.000 1.647784 2.260892

2001.75 | 1.518062 .1174855 5.39 0.000 1.304408 1.766711

2002 | 1.578514 .1110181 6.49 0.000 1.375253 1.811816

2002.25 | 1.562912 .1167734 5.98 0.000 1.35001 1.809391

2002.5 | 1.684347 .1323278 6.64 0.000 1.443971 1.964739

2002.75 | 1.524474 .113723 5.65 0.000 1.31711 1.764486

2003 | 1.311528 .0909166 3.91 0.000 1.14491 1.502394

2003.25 | 1.428814 .1076064 4.74 0.000 1.232736 1.656079

2003.5 | 1.558083 .106901 6.46 0.000 1.362037 1.782346

2003.75 | 1.239607 .0893964 2.98 0.003 1.076213 1.427809

2004 | 1.244739 .0913879 2.98 0.003 1.077913 1.437384

2004.25 | 1.367517 .0934586 4.58 0.000 1.196079 1.563527

2004.5 | 1.505702 .1083663 5.69 0.000 1.307607 1.733806

2004.75 | 1.21623 .093488 2.55 0.011 1.046132 1.413986

2005 | 1.16245 .0774845 2.26 0.024 1.020085 1.324683

2005.25 | 1.288904 .0857794 3.81 0.000 1.131283 1.468486

2005.5 | 1.407376 .0960893 5.01 0.000 1.231101 1.60889

2005.75 | 1.192542 .0856169 2.45 0.014 1.036008 1.372728

2006 | 1.182712 .0790536 2.51 0.012 1.03749 1.348262

2006.25 | 1.140708 .0765725 1.96 0.050 1.000082 1.301107

2006.5 | 1.423906 .0863837 5.83 0.000 1.264276 1.603692

2006.75 | 1.090137 .0694138 1.36 0.175 .9622355 1.23504

2007 | 1.118635 .0689104 1.82 0.069 .9914077 1.262188

2007.25 | 1.154197 .0897437 1.84 0.065 .99105 1.344202

2007.5 | 1.364172 .0812459 5.21 0.000 1.213876 1.533077

2007.75 | 1.19877 .0714605 3.04 0.002 1.066583 1.34734

2008 | 1.074151 .0632485 1.21 0.224 .9570722 1.205552

2008.25 | 1.049371 .0694919 0.73 0.467 .9216381 1.194807

2008.5 | 1.250821 .0698707 4.01 0.000 1.121107 1.395543

2009 | 1.002753 .0549957 0.05 0.960 .9005552 1.11655

2009.25 | .939552 .056844 -1.03 0.303 .8344918 1.057839

2009.5 | 1.060567 .0563324 1.11 0.268 .9557103 1.176928

2009.75 | .9101983 .0566599 -1.51 0.131 .8056542 1.028308

2010 | .9122099 .0660265 -1.27 0.204 .7915605 1.051249

2010.25 | .9096151 .0641258 -1.34 0.179 .7922275 1.044396

2010.5 | 1.078729 .0649001 1.26 0.208 .9587408 1.213735

2010.75 | .8957372 .0547936 -1.80 0.072 .794532 1.009834

2011 | .8868201 .0550158 -1.94 0.053 .7852889 1.001478

2011.25 | .8322218 .0512406 -2.98 0.003 .7376152 .9389627

2011.5 | .9721992 .0599766 -0.46 0.648 .8614761 1.097153

2011.75 | .7402095 .0450882 -4.94 0.000 .6569095 .8340723

2012 | .8180034 .0550412 -2.99 0.003 .7169355 .9333189

2012.25 | .7285112 .0481838 -4.79 0.000 .6399378 .8293441

2012.5 | .8304625 .0614892 -2.51 0.012 .7182825 .9601626

2012.75 | .6540276 .051822 -5.36 0.000 .5599523 .7639082

2013 | .7095604 .0530413 -4.59 0.000 .6128583 .8215211

2013.25 | .6895127 .0554498 -4.62 0.000 .5889652 .8072256

2013.5 | .7886943 .0673114 -2.78 0.005 .66721 .9322982

2013.75 | .6235038 .0539568 -5.46 0.000 .5262326 .738755

2014 | .687779 .0536833 -4.80 0.000 .5902145 .8014712

2014.25 | .7311844 .0670368 -3.41 0.001 .6109233 .8751192

2014.5 | .7950055 .0622499 -2.93 0.003 .681899 .9268729

2014.75 | .7258867 .0555033 -4.19 0.000 .6248614 .8432454

2015 | .6663304 .0569737 -4.75 0.000 .5635193 .7878988

2015.25 | .6115014 .046059 -6.53 0.000 .5275748 .7087791

2015.5 | .8185637 .0694477 -2.36 0.018 .6931637 .9666499

2015.75 | .6210034 .0608071 -4.87 0.000 .5125621 .7523873

2016 | .6919335 .0666452 -3.82 0.000 .5729 .835699

|

\_cons | .0000556 3.82e-06 -142.67 0.000 .0000486 .0000636

ln(hours) | 1 (exposure)

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

.

. quietly poisson dv `pp\_lag\_4\_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 = 41411.9

Prob > chi2(22285) = 0.0000

Pearson goodness-of-fit = 1001346

Prob > chi2(22285) = 0.0000

.

. pause "next"

.

. // negative binomial model

. glm dv `pp\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, family(nbinomial) link(log) vce(cl mineid) exposure(hours) iter(50) eform

Iteration 0: log pseudolikelihood = -40147.198

Iteration 1: log pseudolikelihood = -39716.179

Iteration 2: log pseudolikelihood = -39713.481

Iteration 3: log pseudolikelihood = -39713.451

Iteration 4: log pseudolikelihood = -39713.446

Iteration 5: log pseudolikelihood = -39713.445

Iteration 6: log pseudolikelihood = -39713.444

Iteration 7: log pseudolikelihood = -39713.444

Iteration 8: log pseudolikelihood = -39713.444

Generalized linear models No. of obs = 22,446

Optimization : ML Residual df = 22,283

Scale parameter = 1

Deviance = 17248.3333 (1/df) Deviance = .7740579

Pearson = 726715.1438 (1/df) Pearson = 32.61298

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

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

AIC = 3.5531

Log pseudolikelihood = -39713.44418 BIC = -206002.1

(Std. Err. adjusted for 1,293 clusters in mineid)

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

| Robust

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

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

sp48\_11\_pp\_c\_4lag | 1.000685 .0005954 1.15 0.250 .9995189 1.001853

sp48\_24\_pp\_c\_4lag | .9996246 .0001683 -2.23 0.026 .9992949 .9999544

sp48\_25\_pp\_c\_4lag | .9993879 .0006392 -0.96 0.338 .9981359 1.000641

sp48\_26\_pp\_c\_4lag | 1.001502 .0007374 2.04 0.041 1.000058 1.002948

sp48\_27\_pp\_c\_4lag | .9986961 .0006832 -1.91 0.056 .997358 1.000036

sp48\_28\_pp\_c\_4lag | .9974324 .0009727 -2.64 0.008 .9955278 .9993407

sp48\_4\_pp\_c\_4lag | 1.00446 .0018919 2.36 0.018 1.000759 1.008175

sp48\_5\_pp\_c\_4lag | 1.000431 .001242 0.35 0.728 .9980001 1.002869

sp48\_6\_pp\_c\_4lag | .9999128 .0006401 -0.14 0.892 .998659 1.001168

sp48\_7\_pp\_c\_4lag | 1.000452 .0004818 0.94 0.348 .9995086 1.001397

sp48\_8\_pp\_c\_4lag | 1.001745 .000977 1.79 0.074 .9998324 1.003662

sp75\_100\_pp\_c\_4lag | 1.00361 .001667 2.17 0.030 1.000348 1.006882

sp75\_1002\_pp\_c\_4lag | .9997464 .0002489 -1.02 0.308 .9992586 1.000234

sp75\_1003\_pp\_c\_4lag | .9997708 .0002487 -0.92 0.357 .9992835 1.000258

sp75\_1003\_2\_pp\_c\_4lag | .9984853 .0003266 -4.63 0.000 .9978454 .9991256

sp75\_1311\_pp\_c\_4lag | .9982029 .0010786 -1.66 0.096 .9960911 1.000319

sp75\_1315\_pp\_c\_4lag | .9793508 .0085847 -2.38 0.017 .9626689 .9963219

sp75\_1316\_pp\_c\_4lag | .9969577 .0023872 -1.27 0.203 .9922899 1.001647

sp75\_1318\_pp\_c\_4lag | .6074316 .0234077 -12.94 0.000 .5632432 .6550868

sp75\_1400\_pp\_c\_4lag | .9991744 .0006492 -1.27 0.204 .9979028 1.000448

sp75\_1400\_1\_pp\_c\_4lag | .9985783 .0017481 -0.81 0.416 .9951579 1.00201

sp75\_1403\_10\_pp\_c\_4lag | 1.000419 .0001325 3.16 0.002 1.00016 1.000679

sp75\_1403\_5\_pp\_c\_4lag | .9997376 .0001281 -2.05 0.040 .9994866 .9999886

sp75\_1403\_6\_pp\_c\_4lag | 1.000047 .000092 0.51 0.609 .9998667 1.000227

sp75\_1403\_7\_pp\_c\_4lag | .9999491 .0004684 -0.11 0.913 .9990315 1.000868

sp75\_1403\_8\_pp\_c\_4lag | .9997742 .0001016 -2.22 0.026 .999575 .9999734

sp75\_1404\_pp\_c\_4lag | 1.000291 .0032943 0.09 0.930 .9938553 1.006769

sp75\_1404\_1\_pp\_c\_4lag | .9971849 .0013611 -2.07 0.039 .9945208 .9998561

sp75\_1405\_pp\_c\_4lag | .9995936 .0001538 -2.64 0.008 .9992922 .9998951

sp75\_1405\_1\_pp\_c\_4lag | 1.000221 .0018749 0.12 0.906 .9965525 1.003902

sp75\_153\_pp\_c\_4lag | 1.001271 .0033737 0.38 0.706 .9946805 1.007905

sp75\_156\_pp\_c\_4lag | .995907 .0016893 -2.42 0.016 .9926015 .9992234

sp75\_160\_pp\_c\_4lag | 1.018226 .0094588 1.94 0.052 .9998548 1.036934

sp75\_1719\_2\_pp\_c\_4lag | .9997209 .0014358 -0.19 0.846 .9969107 1.002539

sp75\_1719\_4\_pp\_c\_4lag | .9998893 .0003242 -0.34 0.733 .9992542 1.000525

sp75\_1720\_pp\_c\_4lag | 1.00041 .0003719 1.10 0.271 .9996809 1.001139

sp75\_1725\_pp\_c\_4lag | 1.000034 .0000389 0.87 0.386 .9999575 1.00011

sp75\_1906\_pp\_c\_4lag | 1.001152 .0005217 2.21 0.027 1.00013 1.002175

sp75\_1916\_pp\_c\_4lag | 1.000336 .0005342 0.63 0.530 .9992892 1.001383

sp75\_203\_pp\_c\_4lag | 1.000112 .0001326 0.85 0.398 .9998522 1.000372

sp75\_204\_pp\_c\_4lag | 1.00039 .0001864 2.09 0.036 1.000025 1.000755

sp75\_205\_pp\_c\_4lag | 1.011533 .0055558 2.09 0.037 1.000702 1.022481

sp75\_207\_pp\_c\_4lag | 1.003817 .0028119 1.36 0.174 .9983212 1.009344

sp75\_208\_pp\_c\_4lag | 1.000067 .0001785 0.38 0.707 .9997174 1.000417

sp75\_209\_pp\_c\_4lag | .9988405 .0008346 -1.39 0.165 .9972061 1.000478

sp75\_212\_pp\_c\_4lag | 1.001375 .0005286 2.60 0.009 1.00034 1.002412

sp75\_213\_pp\_c\_4lag | 1.00217 .0006781 3.20 0.001 1.000842 1.0035

sp75\_215\_pp\_c\_4lag | .9960171 .0033795 -1.18 0.240 .9894154 1.002663

sp75\_332\_pp\_c\_4lag | .9992737 .0009755 -0.74 0.457 .9973636 1.001188

sp75\_334\_pp\_c\_4lag | 1.000016 .0004166 0.04 0.969 .9991998 1.000833

sp75\_337\_pp\_c\_4lag | .9995823 .0003083 -1.35 0.176 .9989782 1.000187

sp75\_340\_pp\_c\_4lag | .9997911 .0001242 -1.68 0.092 .9995477 1.000034

sp75\_343\_pp\_c\_4lag | 1.00078 .0006553 1.19 0.234 .9994965 1.002065

sp75\_373\_pp\_c\_4lag | 1.021798 .012339 1.79 0.074 .9978978 1.04627

sp75\_388\_pp\_c\_4lag | 1.000131 .0008107 0.16 0.871 .9985435 1.001721

sp75\_389\_pp\_c\_4lag | 1.000076 .0020228 0.04 0.970 .9961197 1.004049

sp75\_500\_pp\_c\_4lag | 1.000798 .0009909 0.81 0.420 .9988579 1.002742

sp75\_500\_1\_pp\_c\_4lag | .9965674 .0037301 -0.92 0.358 .9892834 1.003905

sp75\_501\_pp\_c\_4lag | .9984516 .0009203 -1.68 0.093 .9966495 1.000257

sp75\_501\_2\_pp\_c\_4lag | .9989358 .0015582 -0.68 0.495 .9958864 1.001995

sp75\_502\_pp\_c\_4lag | 1.002872 .0021185 1.36 0.175 .9987287 1.007033

sp75\_503\_pp\_c\_4lag | 1.000006 .0000353 0.17 0.866 .9999369 1.000075

sp75\_505\_pp\_c\_4lag | 1.000827 .0015481 0.53 0.593 .9977976 1.003866

sp75\_506\_1\_pp\_c\_4lag | 1.001169 .0009895 1.18 0.237 .9992318 1.003111

sp75\_507\_pp\_c\_4lag | 1.000069 .0004918 0.14 0.889 .9991052 1.001033

sp75\_507\_1\_pp\_c\_4lag | 1.000242 .0002881 0.84 0.401 .9996774 1.000807

sp75\_508\_1\_pp\_c\_4lag | .9890736 .0008696 -12.50 0.000 .9873707 .9907795

sp75\_509\_pp\_c\_4lag | 1.002513 .0014747 1.71 0.088 .9996273 1.005408

sp75\_510\_pp\_c\_4lag | 1.003744 .0030819 1.22 0.224 .9977214 1.009802

sp75\_512\_1\_pp\_c\_4lag | .9985016 .00216 -0.69 0.488 .9942771 1.002744

sp75\_523\_pp\_c\_4lag | .9995949 .0003571 -1.13 0.257 .9988952 1.000295

sp75\_523\_3\_pp\_c\_4lag | .9997454 .0000984 -2.59 0.010 .9995526 .9999382

sp75\_524\_pp\_c\_4lag | 1.001509 .0014768 1.02 0.306 .9986188 1.004408

sp75\_602\_pp\_c\_4lag | 1.000167 .0004539 0.37 0.713 .9992776 1.001057

sp75\_603\_pp\_c\_4lag | 1.00063 .0004881 1.29 0.196 .9996741 1.001588

sp75\_604\_pp\_c\_4lag | 1.000073 .0000529 1.38 0.167 .9999694 1.000177

sp75\_605\_pp\_c\_4lag | 1.000054 .0002012 0.27 0.788 .9996598 1.000449

sp75\_606\_pp\_c\_4lag | .9999762 .0001103 -0.22 0.829 .99976 1.000192

sp75\_607\_pp\_c\_4lag | .9992901 .0004024 -1.76 0.078 .9985018 1.000079

sp75\_703\_3\_pp\_c\_4lag | 1.000505 .0006704 0.75 0.451 .9991919 1.00182

sp75\_703\_4\_pp\_c\_4lag | .9924782 .0040751 -1.84 0.066 .9845233 1.000497

sp75\_807\_pp\_c\_4lag | 1.000193 .0001179 1.64 0.102 .9999619 1.000424

sp75\_810\_pp\_c\_4lag | 1.000795 .0004314 1.84 0.065 .9999501 1.001641

sp75\_811\_pp\_c\_4lag | 1.000457 .0005204 0.88 0.380 .9994376 1.001478

sp75\_812\_pp\_c\_4lag | .9987662 .0019304 -0.64 0.523 .9949898 1.002557

sp75\_816\_pp\_c\_4lag | .9999484 .0002723 -0.19 0.850 .9994147 1.000482

sp75\_817\_pp\_c\_4lag | .9985886 .0029894 -0.47 0.637 .9927467 1.004465

sp75\_906\_pp\_c\_4lag | .9949292 .0020546 -2.46 0.014 .9909104 .9989643

mine\_time | 1.001378 .0014571 0.95 0.344 .9985257 1.004237

onsite\_insp\_hours | .9995351 .0001217 -3.82 0.000 .9992965 .9997737

|

state |

AL | 1.053199 .1140717 0.48 0.632 .8517596 1.302278

AR | 1.725276 .0922287 10.20 0.000 1.553659 1.915851

CO | .8024389 .1066012 -1.66 0.098 .6184901 1.041097

IL | 1.305003 .0812265 4.28 0.000 1.15513 1.474322

IN | 1.052876 .0858821 0.63 0.528 .8973164 1.235404

MD | 1.337762 .2591501 1.50 0.133 .9151345 1.955568

MT | .6013456 .032337 -9.46 0.000 .5411918 .6681854

NM | .7818737 .0360966 -5.33 0.000 .7142321 .8559213

OH | 1.080058 .1114321 0.75 0.455 .8823212 1.32211

OK | 1.713018 .2791573 3.30 0.001 1.244653 2.35763

PA | 1.377235 .1092565 4.03 0.000 1.178913 1.608919

TN | 1.767853 .2116743 4.76 0.000 1.398065 2.23545

UT | .5290758 .1043809 -3.23 0.001 .3594057 .7788445

VA | .9473753 .0505789 -1.01 0.311 .8532528 1.051881

WV | 1.298148 .0622153 5.44 0.000 1.18176 1.425998

WY | .8221759 .0426072 -3.78 0.000 .7427683 .9100728

|

time |

2000.75 | 1.553598 .1265774 5.41 0.000 1.324306 1.822591

2001 | 1.626832 .1337978 5.92 0.000 1.384638 1.91139

2001.25 | 1.821273 .1632299 6.69 0.000 1.527872 2.171017

2001.5 | 2.083553 .1730505 8.84 0.000 1.770548 2.451893

2001.75 | 1.712546 .1470791 6.26 0.000 1.447233 2.026499

2002 | 1.969929 .2644214 5.05 0.000 1.51424 2.562751

2002.25 | 1.847498 .1806953 6.28 0.000 1.525218 2.237877

2002.5 | 1.951873 .1951425 6.69 0.000 1.604541 2.374391

2002.75 | 1.56991 .1271514 5.57 0.000 1.339472 1.839992

2003 | 1.523108 .1296534 4.94 0.000 1.289059 1.799652

2003.25 | 1.712881 .1711919 5.38 0.000 1.408169 2.083529

2003.5 | 1.825157 .1505874 7.29 0.000 1.552639 2.145507

2003.75 | 1.350242 .1155543 3.51 0.000 1.141735 1.596827

2004 | 1.406717 .1189479 4.04 0.000 1.191878 1.660283

2004.25 | 1.471798 .1195642 4.76 0.000 1.25516 1.725826

2004.5 | 1.609733 .1283537 5.97 0.000 1.376837 1.882024

2004.75 | 1.312612 .1117965 3.19 0.001 1.110807 1.55108

2005 | 1.315761 .1073999 3.36 0.001 1.121236 1.544035

2005.25 | 1.387347 .1077055 4.22 0.000 1.191524 1.615353

2005.5 | 1.525088 .117791 5.46 0.000 1.310847 1.774344

2005.75 | 1.242503 .1015559 2.66 0.008 1.058582 1.458378

2006 | 1.366472 .1106658 3.86 0.000 1.165909 1.601535

2006.25 | 1.30991 .1042919 3.39 0.001 1.120652 1.53113

2006.5 | 1.553064 .1178299 5.80 0.000 1.338472 1.802061

2006.75 | 1.216629 .0974106 2.45 0.014 1.039934 1.423346

2007 | 1.164057 .0848971 2.08 0.037 1.009007 1.342932

2007.25 | 1.212733 .0947704 2.47 0.014 1.040512 1.41346

2007.5 | 1.499299 .127132 4.78 0.000 1.26973 1.770375

2007.75 | 1.241893 .0877737 3.07 0.002 1.081244 1.426412

2008 | 1.116226 .0796371 1.54 0.123 .9705621 1.283752

2008.25 | 1.097873 .0773429 1.33 0.185 .9562833 1.260426

2008.5 | 1.218996 .0775423 3.11 0.002 1.076109 1.380857

2009 | .9940688 .0650676 -0.09 0.928 .8743802 1.130141

2009.25 | 1.001856 .0742336 0.03 0.980 .8664324 1.158447

2009.5 | 1.126047 .0763872 1.75 0.080 .9858567 1.286172

2009.75 | .9426731 .0684715 -0.81 0.416 .8175865 1.086897

2010 | .9473068 .0729224 -0.70 0.482 .8146412 1.101577

2010.25 | .9383639 .0792865 -0.75 0.451 .7951508 1.107371

2010.5 | 1.210143 .0894247 2.58 0.010 1.046975 1.39874

2010.75 | .9510181 .073883 -0.65 0.518 .8166959 1.107432

2011 | .9406665 .0699126 -0.82 0.411 .8131531 1.088176

2011.25 | .8966584 .0657635 -1.49 0.137 .7766001 1.035277

2011.5 | 1.024098 .0695895 0.35 0.726 .8963974 1.169991

2011.75 | .7958871 .0597368 -3.04 0.002 .6870098 .9220193

2012 | .8881616 .0718756 -1.47 0.143 .7578922 1.040822

2012.25 | .7841733 .0590398 -3.23 0.001 .6765902 .908863

2012.5 | .9221719 .0804823 -0.93 0.353 .7771833 1.094209

2012.75 | .6816053 .0598722 -4.36 0.000 .5738038 .8096595

2013 | .7916309 .069489 -2.66 0.008 .6665068 .9402446

2013.25 | .7278319 .062712 -3.69 0.000 .6147368 .8617334

2013.5 | .8591636 .0753617 -1.73 0.084 .7234567 1.020326

2013.75 | .6392768 .0594685 -4.81 0.000 .5327289 .7671346

2014 | .7299317 .0626622 -3.67 0.000 .6168924 .8636844

2014.25 | .7722872 .0711125 -2.81 0.005 .6447627 .9250341

2014.5 | .8065042 .0728905 -2.38 0.017 .6755795 .9628014

2014.75 | .801458 .0736647 -2.41 0.016 .6693357 .9596603

2015 | .6923849 .0605034 -4.21 0.000 .5833997 .8217297

2015.25 | .6573138 .057657 -4.78 0.000 .5534885 .7806149

2015.5 | .8676105 .0780136 -1.58 0.114 .7274223 1.034816

2015.75 | .6905316 .0696708 -3.67 0.000 .5666333 .8415211

2016 | .7023112 .0722869 -3.43 0.001 .5740078 .8592933

|

\_cons | .0000477 3.39e-06 -139.86 0.000 .0000415 .0000548

ln(hours) | 1 (exposure)

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

.

. pause "next"

.

. eststo clear

. eststo: nbreg dv `pp\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -314658.37

Iteration 1: log pseudolikelihood = -127828.65

Iteration 2: log pseudolikelihood = -110215.72

Iteration 3: log pseudolikelihood = -46572.448

Iteration 4: log pseudolikelihood = -42449.559

Iteration 5: log pseudolikelihood = -41309.785

Iteration 6: log pseudolikelihood = -41249.129

Iteration 7: log pseudolikelihood = -41247.866

Iteration 8: log pseudolikelihood = -41247.864

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -40773.93

Iteration 1: log pseudolikelihood = -40071.319

Iteration 2: log pseudolikelihood = -40040.125

Iteration 3: log pseudolikelihood = -40040.039

Iteration 4: log pseudolikelihood = -40040.039

Fitting full model:

Iteration 0: log pseudolikelihood = -38770.983

Iteration 1: log pseudolikelihood = -38525.328

Iteration 2: log pseudolikelihood = -38518.56

Iteration 3: log pseudolikelihood = -38518.555

Iteration 4: log pseudolikelihood = -38518.555

Negative binomial regression Number of obs = 22,446

Wald chi2(160) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -38518.555 Pseudo R2 = 0.0380

(Std. Err. adjusted for 1,293 clusters in mineid)

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

| Robust

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

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

sp48\_11\_pp\_c\_4lag | 1.000378 .0004889 0.77 0.439 .9994206 1.001337

sp48\_24\_pp\_c\_4lag | .9997801 .000148 -1.49 0.137 .9994901 1.00007

sp48\_25\_pp\_c\_4lag | .9994888 .0006275 -0.81 0.415 .9982597 1.000719

sp48\_26\_pp\_c\_4lag | 1.001487 .0006999 2.13 0.034 1.000116 1.00286

sp48\_27\_pp\_c\_4lag | .9989951 .0006383 -1.57 0.116 .9977449 1.000247

sp48\_28\_pp\_c\_4lag | .9973686 .0008538 -3.08 0.002 .9956965 .9990435

sp48\_4\_pp\_c\_4lag | 1.003816 .0015982 2.39 0.017 1.000689 1.006954

sp48\_5\_pp\_c\_4lag | 1.000363 .001189 0.31 0.760 .9980351 1.002696

sp48\_6\_pp\_c\_4lag | 1.000111 .0006001 0.19 0.853 .9989356 1.001288

sp48\_7\_pp\_c\_4lag | 1.000382 .0004222 0.90 0.365 .9995549 1.00121

sp48\_8\_pp\_c\_4lag | 1.001397 .0009269 1.51 0.131 .9995823 1.003216

sp75\_100\_pp\_c\_4lag | 1.003408 .0014721 2.32 0.020 1.000527 1.006297

sp75\_1002\_pp\_c\_4lag | .9998799 .0002216 -0.54 0.588 .9994457 1.000314

sp75\_1003\_pp\_c\_4lag | .999775 .000229 -0.98 0.326 .9993262 1.000224

sp75\_1003\_2\_pp\_c\_4lag | .9986332 .0003197 -4.27 0.000 .9980067 .9992601

sp75\_1311\_pp\_c\_4lag | .9987134 .0010871 -1.18 0.237 .9965851 1.000846

sp75\_1315\_pp\_c\_4lag | .9808492 .0078157 -2.43 0.015 .9656497 .996288

sp75\_1316\_pp\_c\_4lag | .9980123 .001969 -1.01 0.313 .9941606 1.001879

sp75\_1318\_pp\_c\_4lag | .4866182 .0187474 -18.70 0.000 .4512269 .5247854

sp75\_1400\_pp\_c\_4lag | .9990007 .0006174 -1.62 0.106 .9977913 1.000211

sp75\_1400\_1\_pp\_c\_4lag | .9987651 .001727 -0.71 0.475 .995386 1.002156

sp75\_1403\_10\_pp\_c\_4lag | 1.000389 .0001133 3.43 0.001 1.000167 1.000611

sp75\_1403\_5\_pp\_c\_4lag | .9997219 .0001153 -2.41 0.016 .999496 .9999478

sp75\_1403\_6\_pp\_c\_4lag | 1.000041 .0000848 0.49 0.627 .999875 1.000207

sp75\_1403\_7\_pp\_c\_4lag | 1.000146 .0004307 0.34 0.735 .999302 1.00099

sp75\_1403\_8\_pp\_c\_4lag | .9997724 .0000953 -2.39 0.017 .9995856 .9999592

sp75\_1404\_pp\_c\_4lag | 1.000725 .0028366 0.26 0.798 .995181 1.0063

sp75\_1404\_1\_pp\_c\_4lag | .9976717 .0013486 -1.72 0.085 .9950321 1.000318

sp75\_1405\_pp\_c\_4lag | .9996122 .0001346 -2.88 0.004 .9993484 .999876

sp75\_1405\_1\_pp\_c\_4lag | .999789 .0013349 -0.16 0.874 .997176 1.002409

sp75\_153\_pp\_c\_4lag | 1.001167 .0026 0.45 0.653 .9960842 1.006276

sp75\_156\_pp\_c\_4lag | .9965809 .0015037 -2.27 0.023 .993638 .9995325

sp75\_160\_pp\_c\_4lag | 1.014348 .0099632 1.45 0.147 .9950068 1.034064

sp75\_1719\_2\_pp\_c\_4lag | .9996283 .001219 -0.30 0.760 .9972419 1.00202

sp75\_1719\_4\_pp\_c\_4lag | 1.000045 .0003127 0.14 0.886 .999432 1.000658

sp75\_1720\_pp\_c\_4lag | 1.00035 .0003413 1.03 0.304 .9996817 1.00102

sp75\_1725\_pp\_c\_4lag | 1.000012 .0000346 0.35 0.729 .9999441 1.00008

sp75\_1906\_pp\_c\_4lag | 1.000995 .0005131 1.94 0.052 .99999 1.002001

sp75\_1916\_pp\_c\_4lag | 1.000425 .0004956 0.86 0.391 .9994544 1.001397

sp75\_203\_pp\_c\_4lag | 1.000149 .000124 1.20 0.231 .9999054 1.000392

sp75\_204\_pp\_c\_4lag | 1.000317 .0001798 1.76 0.078 .9999647 1.000669

sp75\_205\_pp\_c\_4lag | 1.009087 .0065277 1.40 0.162 .996374 1.021963

sp75\_207\_pp\_c\_4lag | 1.003005 .0017036 1.77 0.077 .9996718 1.00635

sp75\_208\_pp\_c\_4lag | 1.000118 .0001599 0.74 0.460 .9998047 1.000432

sp75\_209\_pp\_c\_4lag | .9985394 .0007719 -1.89 0.059 .9970277 1.000054

sp75\_212\_pp\_c\_4lag | 1.001311 .0005112 2.57 0.010 1.00031 1.002314

sp75\_213\_pp\_c\_4lag | 1.00251 .0005563 4.52 0.000 1.00142 1.003601

sp75\_215\_pp\_c\_4lag | .9976941 .0028215 -0.82 0.414 .9921794 1.003239

sp75\_332\_pp\_c\_4lag | .9992452 .0009489 -0.80 0.427 .9973872 1.001107

sp75\_334\_pp\_c\_4lag | 1.000019 .0003734 0.05 0.958 .9992878 1.000752

sp75\_337\_pp\_c\_4lag | .9995465 .0002625 -1.73 0.084 .9990321 1.000061

sp75\_340\_pp\_c\_4lag | .9997933 .0001179 -1.75 0.080 .9995622 1.000025

sp75\_343\_pp\_c\_4lag | 1.000924 .0006354 1.45 0.146 .9996793 1.00217

sp75\_373\_pp\_c\_4lag | 1.021433 .0117156 1.85 0.064 .998727 1.044655

sp75\_388\_pp\_c\_4lag | .9998883 .0007156 -0.16 0.876 .9984867 1.001292

sp75\_389\_pp\_c\_4lag | 1.000281 .0017375 0.16 0.872 .9968811 1.003692

sp75\_500\_pp\_c\_4lag | 1.000481 .000823 0.58 0.559 .998869 1.002095

sp75\_500\_1\_pp\_c\_4lag | .9969984 .0036931 -0.81 0.417 .9897863 1.004263

sp75\_501\_pp\_c\_4lag | .9986498 .0008411 -1.60 0.109 .9970026 1.0003

sp75\_501\_2\_pp\_c\_4lag | .9986765 .0015397 -0.86 0.390 .9956633 1.001699

sp75\_502\_pp\_c\_4lag | 1.002703 .0018396 1.47 0.141 .9991034 1.006315

sp75\_503\_pp\_c\_4lag | 1.000006 .0000314 0.20 0.839 .9999448 1.000068

sp75\_505\_pp\_c\_4lag | 1.000744 .0015191 0.49 0.624 .9977708 1.003726

sp75\_506\_1\_pp\_c\_4lag | 1.001084 .0009084 1.19 0.232 .9993053 1.002866

sp75\_507\_pp\_c\_4lag | 1.000074 .0004587 0.16 0.871 .9991756 1.000974

sp75\_507\_1\_pp\_c\_4lag | 1.000252 .0002834 0.89 0.374 .9996968 1.000808

sp75\_508\_1\_pp\_c\_4lag | .989791 .0008693 -11.68 0.000 .9880887 .9914961

sp75\_509\_pp\_c\_4lag | 1.002366 .0014195 1.67 0.095 .9995877 1.005152

sp75\_510\_pp\_c\_4lag | 1.003558 .0027862 1.28 0.201 .9981121 1.009034

sp75\_512\_1\_pp\_c\_4lag | .9993894 .0021329 -0.29 0.775 .9952176 1.003579

sp75\_523\_pp\_c\_4lag | .9996431 .0003344 -1.07 0.286 .9989879 1.000299

sp75\_523\_3\_pp\_c\_4lag | .9997389 .000092 -2.84 0.005 .9995586 .9999192

sp75\_524\_pp\_c\_4lag | 1.001826 .0014207 1.29 0.198 .9990456 1.004615

sp75\_602\_pp\_c\_4lag | 1.000121 .0003887 0.31 0.755 .9993598 1.000883

sp75\_603\_pp\_c\_4lag | 1.000528 .0004464 1.18 0.236 .9996538 1.001404

sp75\_604\_pp\_c\_4lag | 1.000057 .0000499 1.14 0.256 .9999589 1.000154

sp75\_605\_pp\_c\_4lag | 1.000046 .0001808 0.25 0.800 .9996914 1.0004

sp75\_606\_pp\_c\_4lag | .9999975 .0001098 -0.02 0.982 .9997823 1.000213

sp75\_607\_pp\_c\_4lag | .9994031 .0003998 -1.49 0.136 .9986199 1.000187

sp75\_703\_3\_pp\_c\_4lag | 1.000608 .000615 0.99 0.323 .9994033 1.001814

sp75\_703\_4\_pp\_c\_4lag | .9945536 .0044032 -1.23 0.217 .9859608 1.003221

sp75\_807\_pp\_c\_4lag | 1.000168 .0001071 1.57 0.116 .9999585 1.000378

sp75\_810\_pp\_c\_4lag | 1.000906 .00036 2.52 0.012 1.000201 1.001612

sp75\_811\_pp\_c\_4lag | 1.000415 .0005206 0.80 0.425 .9993954 1.001436

sp75\_812\_pp\_c\_4lag | .9988242 .001724 -0.68 0.495 .995451 1.002209

sp75\_816\_pp\_c\_4lag | .9999729 .0002495 -0.11 0.913 .999484 1.000462

sp75\_817\_pp\_c\_4lag | .9982951 .0027155 -0.63 0.530 .9929869 1.003632

sp75\_906\_pp\_c\_4lag | .9949435 .0019945 -2.53 0.011 .9910419 .9988603

mine\_time | 1.001172 .0014056 0.83 0.404 .9984212 1.003931

onsite\_insp\_hours | .9995718 .0001178 -3.63 0.000 .9993409 .9998027

|

state |

AL | 1.03652 .0981398 0.38 0.705 .8609623 1.247875

AR | 1.792426 .0923168 11.33 0.000 1.620321 1.982811

CO | .7461473 .093162 -2.35 0.019 .5841787 .9530231

IL | 1.268461 .077114 3.91 0.000 1.125977 1.428974

IN | 1.056669 .0913592 0.64 0.524 .8919578 1.251796

MD | 1.26591 .1993131 1.50 0.134 .929788 1.72354

MT | .5800377 .0300216 -10.52 0.000 .5240825 .6419672

NM | .7727037 .0343049 -5.81 0.000 .7083095 .842952

OH | 1.081742 .1001929 0.85 0.396 .9021609 1.297071

OK | 1.672253 .2662638 3.23 0.001 1.223967 2.284726

PA | 1.304587 .1077678 3.22 0.001 1.109579 1.533869

TN | 1.70709 .1966933 4.64 0.000 1.362008 2.139602

UT | .4886236 .087744 -3.99 0.000 .3436537 .6947489

VA | .9331663 .0519236 -1.24 0.214 .8367508 1.040691

WV | 1.233968 .0586873 4.42 0.000 1.124142 1.354525

WY | .7961669 .0413859 -4.39 0.000 .7190472 .8815578

|

time |

2000.75 | 1.549471 .1193566 5.68 0.000 1.332339 1.801988

2001 | 1.565885 .1177981 5.96 0.000 1.35122 1.814655

2001.25 | 1.738867 .1467119 6.56 0.000 1.473834 2.051559

2001.5 | 2.020749 .1594507 8.92 0.000 1.731198 2.358728

2001.75 | 1.627032 .1300961 6.09 0.000 1.391025 1.903082

2002 | 1.783697 .1687083 6.12 0.000 1.481874 2.146993

2002.25 | 1.737018 .1471927 6.52 0.000 1.471209 2.05085

2002.5 | 1.844729 .1588834 7.11 0.000 1.558189 2.183963

2002.75 | 1.554973 .1176998 5.83 0.000 1.340582 1.803651

2003 | 1.432368 .1083779 4.75 0.000 1.234952 1.661344

2003.25 | 1.569036 .1286272 5.49 0.000 1.336142 1.842523

2003.5 | 1.712744 .1288196 7.15 0.000 1.47799 1.984784

2003.75 | 1.308961 .1044983 3.37 0.001 1.119368 1.530667

2004 | 1.359849 .1087221 3.84 0.000 1.162614 1.590543

2004.25 | 1.444114 .1063781 4.99 0.000 1.249969 1.668414

2004.5 | 1.58714 .1189399 6.16 0.000 1.370334 1.838248

2004.75 | 1.29694 .107049 3.15 0.002 1.10322 1.524677

2005 | 1.257078 .0948421 3.03 0.002 1.084281 1.457412

2005.25 | 1.353084 .0972541 4.21 0.000 1.175287 1.557778

2005.5 | 1.483497 .1063638 5.50 0.000 1.289012 1.707324

2005.75 | 1.235778 .0961231 2.72 0.006 1.061039 1.439295

2006 | 1.297385 .0959054 3.52 0.000 1.122396 1.499655

2006.25 | 1.260914 .094452 3.09 0.002 1.08874 1.460316

2006.5 | 1.516264 .1060935 5.95 0.000 1.321953 1.739136

2006.75 | 1.168954 .0853489 2.14 0.033 1.013091 1.348796

2007 | 1.157657 .0796384 2.13 0.033 1.011634 1.324758

2007.25 | 1.198771 .0942749 2.31 0.021 1.027532 1.398548

2007.5 | 1.448371 .1037837 5.17 0.000 1.258597 1.66676

2007.75 | 1.223673 .0789193 3.13 0.002 1.078371 1.388554

2008 | 1.095422 .0704536 1.42 0.156 .9656848 1.24259

2008.25 | 1.068587 .0711805 1.00 0.319 .9377988 1.217615

2008.5 | 1.228366 .0727581 3.47 0.001 1.093729 1.379577

2009 | .9723309 .0556143 -0.49 0.624 .8692165 1.087678

2009.25 | .9640017 .0648902 -0.54 0.586 .8448518 1.099955

2009.5 | 1.092419 .0673549 1.43 0.152 .9680703 1.23274

2009.75 | .9207212 .0619403 -1.23 0.220 .8069836 1.050489

2010 | .9233193 .067413 -1.09 0.275 .8002106 1.065368

2010.25 | .9227702 .0746766 -0.99 0.321 .7874242 1.08138

2010.5 | 1.153461 .0785521 2.10 0.036 1.009334 1.318168

2010.75 | .9210569 .064867 -1.17 0.243 .8023043 1.057387

2011 | .9131446 .061665 -1.35 0.178 .7999403 1.042369

2011.25 | .8616299 .0580088 -2.21 0.027 .7551165 .9831675

2011.5 | 1.002656 .0634021 0.04 0.967 .8857821 1.134951

2011.75 | .7689767 .052562 -3.84 0.000 .6725598 .8792158

2012 | .8533132 .062177 -2.18 0.029 .7397506 .9843092

2012.25 | .7503648 .0512914 -4.20 0.000 .6562786 .8579394

2012.5 | .8677954 .0667387 -1.84 0.065 .7463711 1.008974

2012.75 | .6644606 .053409 -5.09 0.000 .56761 .7778366

2013 | .747135 .0571243 -3.81 0.000 .6431586 .8679207

2013.25 | .704352 .0560583 -4.40 0.000 .6026204 .8232573

2013.5 | .8166198 .066123 -2.50 0.012 .6967817 .9570686

2013.75 | .626037 .0539009 -5.44 0.000 .5288259 .7411179

2014 | .7029631 .0562239 -4.41 0.000 .6009694 .8222667

2014.25 | .7443075 .0641488 -3.43 0.001 .6286238 .8812802

2014.5 | .7906802 .0642599 -2.89 0.004 .6742521 .9272127

2014.75 | .7607305 .061595 -3.38 0.001 .6490984 .8915611

2015 | .6784506 .0560597 -4.70 0.000 .5770113 .7977231

2015.25 | .636532 .0514643 -5.59 0.000 .5432499 .7458318

2015.5 | .8492911 .0710409 -1.95 0.051 .7208682 1.000593

2015.75 | .6597213 .0633221 -4.33 0.000 .5465872 .7962721

2016 | .6991522 .068217 -3.67 0.000 .5774563 .8464948

|

\_cons | .0000501 3.44e-06 -144.16 0.000 .0000438 .0000573

ln(hours) | 1 (exposure)

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

/lnalpha | -1.111407 .073737 -1.255929 -.9668849

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

alpha | .3290957 .0242665 .2848113 .3802658

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.C.PP.3.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.PP.3.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.PP.3.csv)

. est store nbin

.

. pause "next"

.

. // test for over-dispersion

. lrtest pois nbin, stats force

Likelihood-ratio test LR chi2(1) = 5458.62

(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 | 22,446 -45450.16 -41247.86 161 82817.73 84108.77

nbin | 22,446 -40040.04 -38518.56 162 77361.11 78660.17

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

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

.

. pause "next"

.

. // final model + diagnostics/assessment

. quietly nbreg dv `pp\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

. predict cpp3\_yhat

(option n assumed; predicted number of events)

(7,843 missing values generated)

. gen cpp3\_res = dv - cpp3\_yhat

(7,843 missing values generated)

.

. summ dv cpp3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv | 30,289 2.177721 3.851734 0 71

cpp3\_yhat | 22,446 2.71982 3.868568 3.81e-09 79.3483

. /\*

> pause "next"

>

> scatter dv cpp3\_yhat

>

> pause "next"

>

> scatter cpp3\_res dv

>

> pause "next"

>

> scatter cpp3\_res cpp3\_yhat

> \*/

. pause "complete: C.PP.3"