. // Model C.V.3

.

. // poisson model

. glm dv `count\_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 = -43972.366

Iteration 1: log pseudolikelihood = -41022.731

Iteration 2: log pseudolikelihood = -41007.292

Iteration 3: log pseudolikelihood = -41007.283

Iteration 4: log pseudolikelihood = -41007.283

Generalized linear models No. of obs = 22,446

Optimization : ML Residual df = 22,281

Scale parameter = 1

Deviance = 40930.7351 (1/df) Deviance = 1.837024

Pearson = 1045529.927 (1/df) Pearson = 46.92473

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

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

AIC = 3.668563

Log pseudolikelihood = -41007.2832 BIC = -182299.7

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

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| Robust

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

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

sp48\_11\_c\_4lag | .9999792 .0286301 -0.00 0.999 .9454107 1.057697

sp75\_1311\_c\_4lag | .9844836 .0880213 -0.17 0.861 .8262353 1.173041

sp75\_1400\_1\_c\_4lag | 1.089257 .1783662 0.52 0.602 .7902163 1.501464

sp75\_1404\_1\_c\_4lag | .9521029 .0834064 -0.56 0.575 .8018935 1.130449

sp75\_1405\_1\_c\_4lag | 1.135548 .0536152 2.69 0.007 1.035179 1.245647

sp75\_500\_1\_c\_4lag | .7702713 .176706 -1.14 0.255 .4913283 1.207579

sp75\_501\_c\_4lag | 1.114077 .0979163 1.23 0.219 .9377845 1.32351

sp75\_506\_1\_c\_4lag | 1.040912 .0432728 0.96 0.335 .9594618 1.129276

sp75\_507\_1\_c\_4lag | 1.013179 .0181806 0.73 0.466 .9781652 1.049447

sp75\_508\_1\_c\_4lag | .5704648 .0393006 -8.15 0.000 .498411 .6529352

sp75\_512\_1\_c\_4lag | 1.047607 .100553 0.48 0.628 .8679549 1.264445

sp75\_811\_c\_4lag | 1.014906 .0358964 0.42 0.676 .9469331 1.087757

sp75\_1002\_c\_4lag | 1.004779 .0139227 0.34 0.731 .9778584 1.032441

sp75\_1003\_2\_c\_4lag | .9510308 .0389109 -1.23 0.220 .8777445 1.030436

sp75\_1322\_c\_4lag | 1.665635 .2875399 2.96 0.003 1.187507 2.336272

sp75\_1719\_2\_c\_4lag | .9616583 .0433513 -0.87 0.386 .8803368 1.050492

sp75\_212\_c\_4lag | 1.057828 .026477 2.25 0.025 1.007186 1.111016

sp75\_332\_c\_4lag | .9598212 .0576996 -0.68 0.495 .8531402 1.079842

sp75\_501\_2\_c\_4lag | .9067437 .0613548 -1.45 0.148 .7941234 1.035335

sp75\_502\_c\_4lag | 1.12312 .1120181 1.16 0.244 .9236951 1.3656

sp75\_602\_c\_4lag | .9995773 .0169832 -0.02 0.980 .9668389 1.033424

sp75\_812\_c\_4lag | 1.03335 .1051001 0.32 0.747 .8465908 1.26131

sp75\_1003\_c\_4lag | .9706261 .0111221 -2.60 0.009 .9490701 .9926716

sp75\_153\_c\_4lag | 1.231013 .1898532 1.35 0.178 .9098837 1.665479

sp75\_203\_c\_4lag | 1.010617 .0080345 1.33 0.184 .9949921 1.026488

sp75\_213\_c\_4lag | 1.212514 .0532492 4.39 0.000 1.112513 1.321504

sp75\_343\_c\_4lag | 1.036473 .045757 0.81 0.417 .9505612 1.130149

sp75\_373\_c\_4lag | 1.297899 .2621873 1.29 0.197 .8735552 1.928374

sp75\_503\_c\_4lag | 1.000948 .0017733 0.53 0.593 .9974784 1.00443

sp75\_523\_c\_4lag | .9801988 .0167206 -1.17 0.241 .9479688 1.013525

sp75\_523\_3\_c\_4lag | .9849924 .0051494 -2.89 0.004 .9749512 .995137

sp75\_603\_c\_4lag | 1.023752 .027002 0.89 0.373 .9721734 1.078066

sp75\_703\_3\_c\_4lag | 1.01001 .0407073 0.25 0.805 .9332953 1.093031

sp48\_24\_c\_4lag | .9902093 .0088951 -1.10 0.273 .9729278 1.007798

sp48\_4\_c\_4lag | .7046489 .3775542 -0.65 0.514 .2465443 2.013959

sp75\_1404\_c\_4lag | .9950506 .1057325 -0.05 0.963 .8079749 1.225441

sp75\_1719\_4\_c\_4lag | 1.027123 .0188947 1.45 0.146 .9907497 1.064832

sp75\_204\_c\_4lag | 1.004933 .0108655 0.46 0.649 .9838613 1.026457

sp75\_334\_c\_4lag | 1.013042 .0213222 0.62 0.538 .9721013 1.055707

sp75\_524\_c\_4lag | 1.181932 .163489 1.21 0.227 .9012628 1.550007

sp75\_604\_c\_4lag | 1.006785 .0033335 2.04 0.041 1.000273 1.01334

sp75\_703\_4\_c\_4lag | .8055486 .128957 -1.35 0.177 .5886083 1.102445

sp48\_25\_c\_4lag | .9576799 .0360951 -1.15 0.251 .8894846 1.031104

sp48\_5\_c\_4lag | 1.04452 .0530021 0.86 0.391 .9456364 1.153743

sp75\_1315\_c\_4lag | .451296 .153257 -2.34 0.019 .2319526 .8780588

sp75\_1403\_5\_c\_4lag | .9957231 .0052691 -0.81 0.418 .9854492 1.006104

sp75\_1405\_c\_4lag | .9852335 .009044 -1.62 0.105 .9676661 1.00312

sp75\_155\_c\_4lag | 1.238899 .3478958 0.76 0.446 .7145124 2.148138

sp75\_1725\_c\_4lag | .9974292 .0022668 -1.13 0.257 .9929962 1.001882

sp75\_205\_c\_4lag | 1.242175 .2325236 1.16 0.247 .8606877 1.79275

sp75\_215\_c\_4lag | 1.028087 .0876584 0.32 0.745 .8698679 1.215084

sp75\_505\_c\_4lag | .927496 .0938999 -0.74 0.457 .7605648 1.131066

sp75\_605\_c\_4lag | .9928168 .0102689 -0.70 0.486 .9728927 1.013149

sp48\_26\_c\_4lag | 1.082653 .0364098 2.36 0.018 1.013592 1.156419

sp48\_6\_c\_4lag | 1.026053 .0372847 0.71 0.479 .9555182 1.101795

sp75\_1316\_c\_4lag | .7719404 .1286579 -1.55 0.120 .556821 1.070168

sp75\_1403\_6\_c\_4lag | .994779 .0031899 -1.63 0.103 .9885466 1.001051

sp75\_156\_c\_4lag | .8519459 .077552 -1.76 0.078 .7127345 1.018348

sp75\_1906\_c\_4lag | 1.058295 .0270186 2.22 0.026 1.006642 1.112597

sp75\_1916\_c\_4lag | .9929389 .0166335 -0.42 0.672 .9608673 1.026081

sp75\_606\_c\_4lag | 1.001225 .0059641 0.21 0.837 .9896032 1.012982

sp75\_816\_c\_4lag | 1.013433 .0139092 0.97 0.331 .9865351 1.041065

sp75\_906\_c\_4lag | .7829354 .0656441 -2.92 0.004 .6642906 .9227706

sp48\_27\_c\_4lag | .9589834 .0399624 -1.01 0.315 .8837717 1.040596

sp48\_7\_c\_4lag | 1.004092 .0250617 0.16 0.870 .9561543 1.054434

sp75\_1403\_7\_c\_4lag | 1.020657 .0191218 1.09 0.275 .9838583 1.058831

sp75\_207\_c\_4lag | 1.104554 .0962633 1.14 0.254 .9311153 1.310298

sp75\_327\_c\_4lag | .9898042 .1319326 -0.08 0.939 .7622392 1.285308

sp75\_337\_c\_4lag | .974718 .0184969 -1.35 0.177 .9391306 1.011654

sp75\_507\_c\_4lag | 1.009963 .0251372 0.40 0.690 .9618777 1.060453

sp75\_607\_c\_4lag | .9662192 .0253003 -1.31 0.189 .9178825 1.017101

sp75\_807\_c\_4lag | 1.010612 .0060679 1.76 0.079 .9987885 1.022575

sp75\_817\_c\_4lag | .8067117 .0641589 -2.70 0.007 .6902734 .9427914

sp48\_28\_c\_4lag | .9488344 .0508591 -0.98 0.327 .8542098 1.053941

sp48\_8\_c\_4lag | 1.052066 .054241 0.98 0.325 .9509506 1.163933

sp75\_1318\_c\_4lag | 1.23067 .1937189 1.32 0.187 .903971 1.675439

sp75\_1403\_8\_c\_4lag | .9890581 .0039251 -2.77 0.006 .9813948 .9967812

sp75\_208\_c\_4lag | 1.001718 .011606 0.15 0.882 .9792269 1.024725

sp75\_388\_c\_4lag | 1.01777 .0411589 0.44 0.663 .9402143 1.101723

sp75\_209\_c\_4lag | .9641049 .0459813 -0.77 0.443 .878067 1.058573

sp75\_389\_c\_4lag | 1.158703 .1117716 1.53 0.127 .9590978 1.399849

sp75\_509\_c\_4lag | 1.225492 .0808609 3.08 0.002 1.076828 1.394681

sp75\_100\_c\_4lag | 1.205097 .0891226 2.52 0.012 1.042489 1.393068

sp75\_1400\_c\_4lag | .9891898 .0272424 -0.39 0.693 .9372111 1.044051

sp75\_1403\_10\_c\_4lag | 1.006789 .0068223 1.00 0.318 .9935057 1.020249

sp75\_160\_c\_4lag | .9781256 .1521657 -0.14 0.887 .7210649 1.326829

sp75\_1720\_c\_4lag | 1.026003 .0227762 1.16 0.248 .9823201 1.071629

sp75\_340\_c\_4lag | .9792834 .0062987 -3.25 0.001 .9670156 .9917068

sp75\_500\_c\_4lag | .9816373 .0367304 -0.50 0.620 .9122234 1.056333

sp75\_510\_c\_4lag | .9795698 .0962172 -0.21 0.834 .8080292 1.187528

sp75\_810\_c\_4lag | 1.062544 .0189702 3.40 0.001 1.026006 1.100383

mine\_time | 1.001394 .0014356 0.97 0.331 .9985839 1.004212

onsite\_insp\_hours | .9996338 .0001019 -3.59 0.000 .9994341 .9998335

|

state |

AL | 1.003068 .0894544 0.03 0.973 .8422086 1.194652

AR | 1.851746 .0975286 11.70 0.000 1.670129 2.053113

CO | .6660769 .0700698 -3.86 0.000 .5419758 .8185945

IL | 1.158188 .0854211 1.99 0.046 1.002304 1.338316

IN | 1.045918 .0868847 0.54 0.589 .8887674 1.230856

MD | 1.205094 .1538006 1.46 0.144 .9383958 1.54759

MT | .5458933 .0301875 -10.95 0.000 .4898205 .6083852

NM | .7155333 .0351606 -6.81 0.000 .6498344 .7878744

OH | 1.11426 .1124823 1.07 0.284 .9142387 1.358044

OK | 1.592782 .2680888 2.77 0.006 1.145213 2.215267

PA | 1.123945 .1075828 1.22 0.222 .9316844 1.355879

TN | 1.587185 .1785675 4.11 0.000 1.2731 1.978758

UT | .4468358 .0704354 -5.11 0.000 .328074 .608589

VA | .880673 .0644584 -1.74 0.083 .7629803 1.01652

WV | 1.142097 .0551125 2.75 0.006 1.039029 1.255388

WY | .7546185 .0400572 -5.30 0.000 .6800539 .8373587

|

time |

2000.75 | 1.542147 .1130118 5.91 0.000 1.335819 1.780342

2001 | 1.527524 .1155795 5.60 0.000 1.316989 1.771715

2001.25 | 1.612289 .1293283 5.95 0.000 1.377732 1.88678

2001.5 | 1.972749 .1582337 8.47 0.000 1.685766 2.308589

2001.75 | 1.536201 .1152227 5.72 0.000 1.326184 1.779477

2002 | 1.593563 .1113746 6.67 0.000 1.389564 1.827511

2002.25 | 1.575816 .1157424 6.19 0.000 1.364538 1.819808

2002.5 | 1.69864 .1365211 6.59 0.000 1.451074 1.988443

2002.75 | 1.545357 .1181847 5.69 0.000 1.330244 1.795256

2003 | 1.334489 .0888394 4.33 0.000 1.171248 1.520481

2003.25 | 1.459332 .1069736 5.16 0.000 1.264033 1.684806

2003.5 | 1.59713 .1093323 6.84 0.000 1.396596 1.826458

2003.75 | 1.263415 .0901317 3.28 0.001 1.098554 1.453017

2004 | 1.260494 .0917157 3.18 0.001 1.092964 1.453703

2004.25 | 1.386017 .0939712 4.81 0.000 1.21355 1.582995

2004.5 | 1.523866 .1071094 5.99 0.000 1.327754 1.748945

2004.75 | 1.251639 .0997162 2.82 0.005 1.070693 1.463164

2005 | 1.19197 .0820947 2.55 0.011 1.041455 1.364239

2005.25 | 1.294794 .0853666 3.92 0.000 1.137838 1.473401

2005.5 | 1.389801 .0945568 4.84 0.000 1.216298 1.588053

2005.75 | 1.150388 .0794338 2.03 0.042 1.004776 1.317103

2006 | 1.157608 .0754972 2.24 0.025 1.018703 1.315453

2006.25 | 1.135031 .0783196 1.84 0.066 .9914545 1.299398

2006.5 | 1.421176 .0861971 5.80 0.000 1.261888 1.600571

2006.75 | 1.106014 .0704409 1.58 0.114 .9762217 1.253062

2007 | 1.126365 .0700512 1.91 0.056 .9971056 1.272382

2007.25 | 1.157533 .088903 1.90 0.057 .9957671 1.345578

2007.5 | 1.360124 .0797124 5.25 0.000 1.21253 1.525684

2007.75 | 1.18802 .0693319 2.95 0.003 1.059616 1.331985

2008 | 1.07616 .0621242 1.27 0.204 .9610348 1.205077

2008.25 | 1.048958 .0694266 0.72 0.470 .9213408 1.194252

2008.5 | 1.260418 .0713081 4.09 0.000 1.128127 1.408222

2009 | .9904238 .0514715 -0.19 0.853 .8945093 1.096623

2009.25 | .9283273 .0540927 -1.28 0.202 .8281375 1.040638

2009.5 | 1.055263 .0541209 1.05 0.294 .954345 1.166853

2009.75 | .9101077 .0540722 -1.59 0.113 .8100659 1.022504

2010 | .9131352 .0662323 -1.25 0.210 .7921273 1.052629

2010.25 | .9110272 .0639461 -1.33 0.184 .7939341 1.04539

2010.5 | 1.069306 .0615281 1.16 0.244 .9552643 1.196962

2010.75 | .8727754 .0518488 -2.29 0.022 .7768466 .9805499

2011 | .867782 .051914 -2.37 0.018 .7717712 .9757369

2011.25 | .8132213 .0485562 -3.46 0.001 .7234105 .9141819

2011.5 | .9590727 .0565178 -0.71 0.478 .8544576 1.076496

2011.75 | .7384526 .0439747 -5.09 0.000 .6571034 .8298727

2012 | .8165781 .0526621 -3.14 0.002 .7196191 .9266011

2012.25 | .7292608 .0457051 -5.04 0.000 .6449638 .8245755

2012.5 | .8270615 .057989 -2.71 0.007 .7208688 .9488975

2012.75 | .6520548 .051225 -5.44 0.000 .5590031 .7605958

2013 | .7064097 .0517688 -4.74 0.000 .611895 .8155235

2013.25 | .6864473 .0562055 -4.59 0.000 .5846714 .8059397

2013.5 | .7878228 .0657928 -2.86 0.004 .6688717 .927928

2013.75 | .6202662 .0543809 -5.45 0.000 .5223365 .7365562

2014 | .6893694 .0536203 -4.78 0.000 .5918942 .8028972

2014.25 | .7375418 .0657245 -3.42 0.001 .6193464 .8782934

2014.5 | .8092068 .0618445 -2.77 0.006 .6966354 .939969

2014.75 | .742282 .0566157 -3.91 0.000 .6392131 .86197

2015 | .6848111 .0563793 -4.60 0.000 .5827643 .8047273

2015.25 | .6278218 .0470558 -6.21 0.000 .5420485 .7271679

2015.5 | .8180916 .0686205 -2.39 0.017 .6940715 .9642723

2015.75 | .616307 .0583312 -5.11 0.000 .5119575 .7419255

2016 | .6843136 .0662504 -3.92 0.000 .5660409 .827299

|

\_cons | .0000531 3.64e-06 -143.48 0.000 .0000464 .0000608

ln(hours) | 1 (exposure)

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

.

. quietly poisson dv `count\_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 = 40930.74

Prob > chi2(22281) = 0.0000

Pearson goodness-of-fit = 1045530

Prob > chi2(22281) = 0.0000

.

. pause "next"

.

. // negative binomial model

. glm dv `count\_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 = -40103.853

Iteration 1: log pseudolikelihood = -39679.218

Iteration 2: log pseudolikelihood = -39676.885

Iteration 3: log pseudolikelihood = -39676.883

Generalized linear models No. of obs = 22,446

Optimization : ML Residual df = 22,281

Scale parameter = 1

Deviance = 17175.21169 (1/df) Deviance = .7708456

Pearson = 770262.5189 (1/df) Pearson = 34.57037

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

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

AIC = 3.550021

Log pseudolikelihood = -39676.88338 BIC = -206055.2

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

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| Robust

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

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

sp48\_11\_c\_4lag | 1.04877 .0410827 1.22 0.224 .9712629 1.132462

sp75\_1311\_c\_4lag | .9013572 .0936487 -1.00 0.318 .7352911 1.10493

sp75\_1400\_1\_c\_4lag | .9941749 .1600208 -0.04 0.971 .7251949 1.362921

sp75\_1404\_1\_c\_4lag | .9683475 .2209393 -0.14 0.888 .6191845 1.514406

sp75\_1405\_1\_c\_4lag | 1.086405 .0938482 0.96 0.337 .9171948 1.286833

sp75\_500\_1\_c\_4lag | .8075064 .1818144 -0.95 0.342 .5193898 1.255448

sp75\_501\_c\_4lag | 1.161457 .1175515 1.48 0.139 .9524727 1.416294

sp75\_506\_1\_c\_4lag | 1.038026 .04718 0.82 0.412 .9495538 1.134741

sp75\_507\_1\_c\_4lag | 1.018441 .0192663 0.97 0.334 .981371 1.056911

sp75\_508\_1\_c\_4lag | .5346853 .0395912 -8.46 0.000 .4624558 .618196

sp75\_512\_1\_c\_4lag | .9369946 .0936937 -0.65 0.515 .7702331 1.139861

sp75\_811\_c\_4lag | 1.028646 .0325452 0.89 0.372 .9667966 1.094453

sp75\_1002\_c\_4lag | .9774707 .0172808 -1.29 0.197 .944181 1.011934

sp75\_1003\_2\_c\_4lag | .8979868 .0374725 -2.58 0.010 .8274653 .9745187

sp75\_1322\_c\_4lag | 2.08254 .9099873 1.68 0.093 .884407 4.903821

sp75\_1719\_2\_c\_4lag | .9649653 .0682944 -0.50 0.614 .8399797 1.108548

sp75\_212\_c\_4lag | 1.054522 .0238778 2.34 0.019 1.008746 1.102376

sp75\_332\_c\_4lag | .9290753 .0557117 -1.23 0.220 .8260549 1.044944

sp75\_501\_2\_c\_4lag | .8851206 .0682889 -1.58 0.114 .7609052 1.029614

sp75\_502\_c\_4lag | .9989643 .1037639 -0.01 0.992 .8149564 1.224519

sp75\_602\_c\_4lag | 1.011427 .0243226 0.47 0.637 .9648617 1.06024

sp75\_812\_c\_4lag | 1.013559 .139868 0.10 0.922 .7733674 1.328349

sp75\_1003\_c\_4lag | .959803 .0147984 -2.66 0.008 .9312325 .98925

sp75\_153\_c\_4lag | 1.115923 .2676723 0.46 0.647 .6973641 1.785701

sp75\_203\_c\_4lag | 1.00764 .0084596 0.91 0.365 .9911947 1.024357

sp75\_213\_c\_4lag | 1.14989 .0581553 2.76 0.006 1.041375 1.269713

sp75\_343\_c\_4lag | 1.032752 .0446598 0.75 0.456 .9488275 1.1241

sp75\_373\_c\_4lag | 1.429029 .4576965 1.11 0.265 .7628059 2.677122

sp75\_503\_c\_4lag | 1.002004 .0026553 0.76 0.450 .9968137 1.007222

sp75\_523\_c\_4lag | .9686906 .017673 -1.74 0.081 .9346641 1.003956

sp75\_523\_3\_c\_4lag | .9833093 .0059012 -2.80 0.005 .971811 .9949436

sp75\_603\_c\_4lag | 1.027702 .0325915 0.86 0.389 .9657681 1.093607

sp75\_703\_3\_c\_4lag | 1.014241 .0386896 0.37 0.711 .9411761 1.092978

sp48\_24\_c\_4lag | .9721537 .0110012 -2.50 0.013 .9508291 .9939566

sp48\_4\_c\_4lag | .6771207 .3737954 -0.71 0.480 .2294942 1.997839

sp75\_1404\_c\_4lag | .8963978 .1840967 -0.53 0.594 .599358 1.34065

sp75\_1719\_4\_c\_4lag | .9977334 .019148 -0.12 0.906 .960901 1.035978

sp75\_204\_c\_4lag | 1.017564 .0117569 1.51 0.132 .99478 1.04087

sp75\_334\_c\_4lag | .99911 .0235774 -0.04 0.970 .9539515 1.046406

sp75\_524\_c\_4lag | 1.033636 .1485651 0.23 0.818 .7798733 1.369971

sp75\_604\_c\_4lag | 1.008156 .003712 2.21 0.027 1.000907 1.015458

sp75\_703\_4\_c\_4lag | .69084 .1470059 -1.74 0.082 .4552477 1.048352

sp48\_25\_c\_4lag | .9647618 .0472527 -0.73 0.464 .8764546 1.061966

sp48\_5\_c\_4lag | 1.053024 .0591351 0.92 0.358 .9432721 1.175546

sp75\_1315\_c\_4lag | .3866965 .1439488 -2.55 0.011 .1864268 .8021068

sp75\_1403\_5\_c\_4lag | .9884602 .0061062 -1.88 0.060 .9765645 1.000501

sp75\_1405\_c\_4lag | .9732419 .012123 -2.18 0.029 .9497691 .9972949

sp75\_155\_c\_4lag | 1.136995 .3137674 0.47 0.642 .6620018 1.9528

sp75\_1725\_c\_4lag | 1.00266 .0029238 0.91 0.362 .9969457 1.008407

sp75\_205\_c\_4lag | 1.548899 .1911662 3.55 0.000 1.216094 1.972782

sp75\_215\_c\_4lag | .7711045 .1272085 -1.58 0.115 .5580733 1.065455

sp75\_505\_c\_4lag | 1.010497 .0914863 0.12 0.908 .8461951 1.2067

sp75\_605\_c\_4lag | .9910908 .0115412 -0.77 0.442 .9687267 1.013971

sp48\_26\_c\_4lag | 1.089027 .0429393 2.16 0.031 1.008037 1.176524

sp48\_6\_c\_4lag | .9940397 .0415161 -0.14 0.886 .915911 1.078833

sp75\_1316\_c\_4lag | .770808 .1032629 -1.94 0.052 .5928068 1.002257

sp75\_1403\_6\_c\_4lag | .9976112 .0045983 -0.52 0.604 .9886392 1.006665

sp75\_156\_c\_4lag | .7710059 .0817338 -2.45 0.014 .6263577 .9490584

sp75\_1906\_c\_4lag | 1.094978 .0308922 3.22 0.001 1.036074 1.157231

sp75\_1916\_c\_4lag | .9803367 .0259829 -0.75 0.454 .9307113 1.032608

sp75\_606\_c\_4lag | .9992607 .0066445 -0.11 0.911 .9863222 1.012369

sp75\_816\_c\_4lag | 1.01423 .0191538 0.75 0.454 .9773754 1.052474

sp75\_906\_c\_4lag | .7377971 .0732728 -3.06 0.002 .6072976 .896339

sp48\_27\_c\_4lag | .9532452 .0466542 -0.98 0.328 .8660534 1.049215

sp48\_7\_c\_4lag | 1.019475 .0373949 0.53 0.599 .9487547 1.095466

sp75\_1403\_7\_c\_4lag | .9874908 .0261781 -0.47 0.635 .9374929 1.040155

sp75\_207\_c\_4lag | 1.157973 .1684198 1.01 0.313 .8707564 1.539928

sp75\_327\_c\_4lag | .918111 .1275638 -0.61 0.539 .6992427 1.205487

sp75\_337\_c\_4lag | .9835045 .0274692 -0.60 0.551 .9311128 1.038844

sp75\_507\_c\_4lag | 1.031225 .0345381 0.92 0.359 .9657056 1.10119

sp75\_607\_c\_4lag | .975139 .0275394 -0.89 0.373 .9226295 1.030637

sp75\_807\_c\_4lag | 1.018915 .0070053 2.73 0.006 1.005277 1.032738

sp75\_817\_c\_4lag | .814673 .1218892 -1.37 0.171 .6076154 1.09229

sp48\_28\_c\_4lag | .9469084 .0625648 -0.83 0.409 .8318917 1.077827

sp48\_8\_c\_4lag | 1.211565 .1105856 2.10 0.036 1.013103 1.448906

sp75\_1318\_c\_4lag | 1.318057 .4772523 0.76 0.446 .6482234 2.680056

sp75\_1403\_8\_c\_4lag | .9913394 .0051799 -1.66 0.096 .9812388 1.001544

sp75\_208\_c\_4lag | .9981552 .0117677 -0.16 0.876 .9753553 1.021488

sp75\_388\_c\_4lag | 1.032246 .0476201 0.69 0.491 .9430072 1.129929

sp75\_209\_c\_4lag | .9859467 .0433296 -0.32 0.747 .9045769 1.074636

sp75\_389\_c\_4lag | 1.077352 .139199 0.58 0.564 .8363316 1.387832

sp75\_509\_c\_4lag | 1.23586 .093637 2.79 0.005 1.065311 1.433712

sp75\_100\_c\_4lag | 1.31251 .1324586 2.69 0.007 1.07696 1.59958

sp75\_1400\_c\_4lag | .9849359 .0309266 -0.48 0.629 .9261484 1.047455

sp75\_1403\_10\_c\_4lag | 1.006871 .0085092 0.81 0.418 .9903304 1.023687

sp75\_160\_c\_4lag | 1.226238 .395003 0.63 0.527 .6521998 2.30552

sp75\_1720\_c\_4lag | 1.033874 .0264337 1.30 0.193 .9833412 1.087003

sp75\_340\_c\_4lag | .9870787 .0081196 -1.58 0.114 .9712922 1.003122

sp75\_500\_c\_4lag | 1.021011 .0453418 0.47 0.640 .9359 1.113861

sp75\_510\_c\_4lag | 1.060247 .1383901 0.45 0.654 .8209235 1.369339

sp75\_810\_c\_4lag | 1.041474 .0277986 1.52 0.128 .98839 1.097408

mine\_time | 1.001747 .0014324 1.22 0.222 .9989431 1.004558

onsite\_insp\_hours | .9995127 .0001118 -4.36 0.000 .9992936 .9997317

|

state |

AL | 1.071564 .1265495 0.59 0.558 .8501445 1.350651

AR | 1.726342 .0902112 10.45 0.000 1.558285 1.912525

CO | .7910455 .106287 -1.74 0.081 .6078994 1.029369

IL | 1.253803 .0877961 3.23 0.001 1.093012 1.438248

IN | 1.015493 .0718935 0.22 0.828 .8839241 1.166647

MD | 1.356712 .264818 1.56 0.118 .9254239 1.988999

MT | .5906527 .0329249 -9.45 0.000 .5295213 .6588414

NM | .7628597 .0360671 -5.73 0.000 .695346 .8369287

OH | 1.133864 .129756 1.10 0.272 .9060492 1.418959

OK | 1.701758 .2860062 3.16 0.002 1.224167 2.365675

PA | 1.412598 .1077446 4.53 0.000 1.216449 1.640375

TN | 1.767666 .2068063 4.87 0.000 1.405448 2.223237

UT | .536227 .1061974 -3.15 0.002 .363724 .7905427

VA | .952166 .050618 -0.92 0.357 .8579501 1.056728

WV | 1.321509 .0617719 5.96 0.000 1.205819 1.448299

WY | .8382032 .0417827 -3.54 0.000 .7601839 .9242298

|

time |

2000.75 | 1.535527 .1238162 5.32 0.000 1.311056 1.79843

2001 | 1.622578 .1332776 5.89 0.000 1.381301 1.905999

2001.25 | 1.786891 .1577128 6.58 0.000 1.503038 2.124349

2001.5 | 2.062017 .1689727 8.83 0.000 1.756064 2.421276

2001.75 | 1.677103 .1406389 6.17 0.000 1.422916 1.976696

2002 | 1.937394 .2577789 4.97 0.000 1.492663 2.51463

2002.25 | 1.820244 .1762529 6.19 0.000 1.505596 2.20065

2002.5 | 1.91312 .1893263 6.56 0.000 1.575817 2.322624

2002.75 | 1.553551 .1239633 5.52 0.000 1.328633 1.816544

2003 | 1.516665 .1282186 4.93 0.000 1.285077 1.789988

2003.25 | 1.69127 .1682378 5.28 0.000 1.391683 2.055349

2003.5 | 1.812625 .1484485 7.26 0.000 1.543821 2.128231

2003.75 | 1.339877 .1137293 3.45 0.001 1.134526 1.582396

2004 | 1.387555 .1171837 3.88 0.000 1.175881 1.637333

2004.25 | 1.458126 .1161399 4.74 0.000 1.247374 1.704486

2004.5 | 1.585769 .123085 5.94 0.000 1.361981 1.846328

2004.75 | 1.304633 .1074907 3.23 0.001 1.110086 1.533275

2005 | 1.299376 .1024369 3.32 0.001 1.113346 1.516491

2005.25 | 1.361543 .1021284 4.11 0.000 1.175393 1.577173

2005.5 | 1.48181 .1102133 5.29 0.000 1.280803 1.714363

2005.75 | 1.211112 .0967149 2.40 0.016 1.035645 1.41631

2006 | 1.32431 .1038361 3.58 0.000 1.135662 1.544296

2006.25 | 1.276192 .0999797 3.11 0.002 1.094539 1.487994

2006.5 | 1.50867 .11007 5.64 0.000 1.307652 1.74059

2006.75 | 1.180695 .0923908 2.12 0.034 1.012815 1.376402

2007 | 1.133451 .0806515 1.76 0.078 .9859046 1.303078

2007.25 | 1.184548 .0883866 2.27 0.023 1.023385 1.371091

2007.5 | 1.486488 .1250938 4.71 0.000 1.260461 1.753046

2007.75 | 1.238091 .0882914 2.99 0.003 1.076592 1.423816

2008 | 1.116636 .0800966 1.54 0.124 .9701858 1.285194

2008.25 | 1.099678 .0776268 1.35 0.178 .9575881 1.262851

2008.5 | 1.220409 .0782549 3.11 0.002 1.076279 1.383841

2009 | .9871151 .0646703 -0.20 0.843 .868164 1.122364

2009.25 | .9879745 .0731833 -0.16 0.870 .854464 1.142346

2009.5 | 1.116377 .0757893 1.62 0.105 .9772912 1.275257

2009.75 | .9402828 .0685354 -0.84 0.398 .8151097 1.084678

2010 | .946915 .0740891 -0.70 0.486 .8122893 1.103853

2010.25 | .9344276 .0789099 -0.80 0.422 .7918883 1.102624

2010.5 | 1.201524 .0884616 2.49 0.013 1.040072 1.388039

2010.75 | .9382576 .0727402 -0.82 0.411 .8059926 1.092228

2011 | .9330775 .0689024 -0.94 0.348 .8073492 1.078386

2011.25 | .887333 .0650089 -1.63 0.103 .7686433 1.02435

2011.5 | 1.015878 .0686195 0.23 0.816 .8899091 1.159679

2011.75 | .7912975 .0591726 -3.13 0.002 .6834199 .9162034

2012 | .88892 .0708061 -1.48 0.139 .7604331 1.039117

2012.25 | .7860483 .0583531 -3.24 0.001 .6796095 .9091573

2012.5 | .9238858 .0797529 -0.92 0.359 .7800811 1.0942

2012.75 | .6835763 .0598029 -4.35 0.000 .5758633 .8114366

2013 | .7918669 .0695876 -2.66 0.008 .6665771 .9407062

2013.25 | .7312546 .0627472 -3.65 0.000 .6180577 .8651833

2013.5 | .8613671 .0749156 -1.72 0.086 .7263682 1.021456

2013.75 | .6389161 .0593207 -4.83 0.000 .5326149 .7664334

2014 | .7300625 .0630167 -3.65 0.000 .6164346 .8646355

2014.25 | .7754887 .0700768 -2.81 0.005 .6496163 .9257506

2014.5 | .8144813 .0725222 -2.30 0.021 .6840523 .9697794

2014.75 | .8059407 .0729177 -2.38 0.017 .6749792 .9623117

2015 | .6995684 .0603106 -4.14 0.000 .5908091 .8283488

2015.25 | .6609476 .0577677 -4.74 0.000 .5568918 .7844463

2015.5 | .8691512 .0782466 -1.56 0.119 .7285589 1.036874

2015.75 | .690866 .0692611 -3.69 0.000 .5676213 .8408701

2016 | .7038279 .0723724 -3.42 0.001 .5753605 .8609796

|

\_cons | .0000464 3.35e-06 -138.16 0.000 .0000403 .0000535

ln(hours) | 1 (exposure)

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

.

. pause "next"

.

. eststo clear

. eststo: nbreg dv `count\_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 = -254758.08

Iteration 1: log pseudolikelihood = -114479.9

Iteration 2: log pseudolikelihood = -73370.05

Iteration 3: log pseudolikelihood = -45908.5

Iteration 4: log pseudolikelihood = -41511.866

Iteration 5: log pseudolikelihood = -41025.409

Iteration 6: log pseudolikelihood = -41007.317

Iteration 7: log pseudolikelihood = -41007.283

Iteration 8: log pseudolikelihood = -41007.283

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 = -38684.166

Iteration 1: log pseudolikelihood = -38445.946

Iteration 2: log pseudolikelihood = -38439.616

Iteration 3: log pseudolikelihood = -38439.612

Iteration 4: log pseudolikelihood = -38439.612

Negative binomial regression Number of obs = 22,446

Wald chi2(164) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -38439.612 Pseudo R2 = 0.0400

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

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| Robust

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

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

sp48\_11\_c\_4lag | 1.028766 .0327104 0.89 0.372 .9666114 1.094917

sp75\_1311\_c\_4lag | .9514527 .09667 -0.49 0.624 .7796558 1.161105

sp75\_1400\_1\_c\_4lag | 1.022024 .1607701 0.14 0.890 .750866 1.391105

sp75\_1404\_1\_c\_4lag | .9240206 .1581211 -0.46 0.644 .6607263 1.292236

sp75\_1405\_1\_c\_4lag | 1.108297 .0783025 1.46 0.146 .964979 1.272901

sp75\_500\_1\_c\_4lag | .7995276 .1867529 -0.96 0.338 .505837 1.263736

sp75\_501\_c\_4lag | 1.1479 .1064206 1.49 0.137 .9571717 1.376632

sp75\_506\_1\_c\_4lag | 1.035412 .0448726 0.80 0.422 .9510956 1.127204

sp75\_507\_1\_c\_4lag | 1.018346 .0192686 0.96 0.337 .9812723 1.056821

sp75\_508\_1\_c\_4lag | .5429757 .0329551 -10.06 0.000 .4820787 .6115653

sp75\_512\_1\_c\_4lag | .9606762 .0845742 -0.46 0.649 .8084266 1.141599

sp75\_811\_c\_4lag | 1.024468 .0320242 0.77 0.439 .9635857 1.089197

sp75\_1002\_c\_4lag | .9869192 .0151796 -0.86 0.392 .9576117 1.017124

sp75\_1003\_2\_c\_4lag | .9219159 .0375729 -1.99 0.046 .8511387 .9985786

sp75\_1322\_c\_4lag | 1.824831 .4446451 2.47 0.014 1.13192 2.941911

sp75\_1719\_2\_c\_4lag | .9670851 .059277 -0.55 0.585 .8576118 1.090533

sp75\_212\_c\_4lag | 1.054766 .0232891 2.41 0.016 1.010093 1.101414

sp75\_332\_c\_4lag | .9500797 .0552079 -0.88 0.378 .8478087 1.064688

sp75\_501\_2\_c\_4lag | .8891071 .0643139 -1.62 0.104 .7715819 1.024533

sp75\_502\_c\_4lag | 1.016312 .0981435 0.17 0.867 .8410622 1.228079

sp75\_602\_c\_4lag | 1.005389 .0200779 0.27 0.788 .9667973 1.045521

sp75\_812\_c\_4lag | 1.023334 .1288918 0.18 0.855 .7994778 1.309872

sp75\_1003\_c\_4lag | .9640021 .0131716 -2.68 0.007 .9385287 .9901668

sp75\_153\_c\_4lag | 1.132885 .2107097 0.67 0.502 .7868059 1.631188

sp75\_203\_c\_4lag | 1.009979 .0079461 1.26 0.207 .9945244 1.025674

sp75\_213\_c\_4lag | 1.188008 .0578091 3.54 0.000 1.07994 1.306891

sp75\_343\_c\_4lag | 1.040336 .0443774 0.93 0.354 .9568951 1.131054

sp75\_373\_c\_4lag | 1.331577 .3491371 1.09 0.275 .7964943 2.226126

sp75\_503\_c\_4lag | 1.001511 .0022412 0.67 0.500 .9971278 1.005913

sp75\_523\_c\_4lag | .9704984 .0167223 -1.74 0.082 .9382705 1.003833

sp75\_523\_3\_c\_4lag | .9846268 .0054487 -2.80 0.005 .9740053 .9953641

sp75\_603\_c\_4lag | 1.029447 .0306344 0.98 0.329 .9711216 1.091274

sp75\_703\_3\_c\_4lag | 1.022025 .0367163 0.61 0.544 .9525376 1.096582

sp48\_24\_c\_4lag | .9823479 .0097073 -1.80 0.072 .963505 1.001559

sp48\_4\_c\_4lag | .6801021 .3738804 -0.70 0.483 .2315439 1.99763

sp75\_1404\_c\_4lag | .9491331 .1560305 -0.32 0.751 .6876949 1.309961

sp75\_1719\_4\_c\_4lag | 1.011114 .0182699 0.61 0.541 .9759327 1.047564

sp75\_204\_c\_4lag | 1.01392 .0112909 1.24 0.214 .9920305 1.036293

sp75\_334\_c\_4lag | 1.001567 .021592 0.07 0.942 .9601295 1.044794

sp75\_524\_c\_4lag | 1.094855 .1511966 0.66 0.512 .8352334 1.435176

sp75\_604\_c\_4lag | 1.007787 .0034356 2.28 0.023 1.001076 1.014543

sp75\_703\_4\_c\_4lag | .7393552 .1339098 -1.67 0.095 .5184252 1.054436

sp48\_25\_c\_4lag | .9649623 .0425177 -0.81 0.418 .8851261 1.052

sp48\_5\_c\_4lag | 1.057842 .0555125 1.07 0.284 .9544477 1.172437

sp75\_1315\_c\_4lag | .413901 .1434216 -2.55 0.011 .2098674 .8162963

sp75\_1403\_5\_c\_4lag | .9902213 .0053679 -1.81 0.070 .9797561 1.000798

sp75\_1405\_c\_4lag | .9768392 .0109393 -2.09 0.036 .9556322 .9985168

sp75\_155\_c\_4lag | 1.176904 .3318094 0.58 0.563 .6772648 2.045144

sp75\_1725\_c\_4lag | 1.000589 .0024704 0.24 0.812 .9957588 1.005443

sp75\_205\_c\_4lag | 1.498965 .2339806 2.59 0.010 1.103884 2.035446

sp75\_215\_c\_4lag | .867762 .1113043 -1.11 0.269 .6748705 1.115786

sp75\_505\_c\_4lag | .9853605 .0889742 -0.16 0.870 .8255339 1.17613

sp75\_605\_c\_4lag | .9907136 .0106371 -0.87 0.385 .9700832 1.011783

sp48\_26\_c\_4lag | 1.088698 .0377992 2.45 0.014 1.017077 1.165361

sp48\_6\_c\_4lag | 1.006659 .0389762 0.17 0.864 .9330937 1.086024

sp75\_1316\_c\_4lag | .802398 .1128055 -1.57 0.117 .6091487 1.056955

sp75\_1403\_6\_c\_4lag | .996953 .0039867 -0.76 0.445 .9891699 1.004797

sp75\_156\_c\_4lag | .8091274 .0772679 -2.22 0.027 .6710133 .9756695

sp75\_1906\_c\_4lag | 1.091667 .029334 3.26 0.001 1.035661 1.150701

sp75\_1916\_c\_4lag | .9848817 .0231854 -0.65 0.518 .9404716 1.031389

sp75\_606\_c\_4lag | 1.000657 .0062744 0.10 0.917 .9884351 1.013031

sp75\_816\_c\_4lag | 1.015228 .0174529 0.88 0.379 .9815906 1.050017

sp75\_906\_c\_4lag | .7516021 .0708209 -3.03 0.002 .6248592 .9040529

sp48\_27\_c\_4lag | .9589277 .0434294 -0.93 0.354 .8774762 1.04794

sp48\_7\_c\_4lag | 1.010705 .0313284 0.34 0.731 .95113 1.074011

sp75\_1403\_7\_c\_4lag | 1.001659 .0235617 0.07 0.944 .9565272 1.04892

sp75\_207\_c\_4lag | 1.114857 .1053549 1.15 0.250 .92636 1.341709

sp75\_327\_c\_4lag | .9577552 .1376896 -0.30 0.764 .7225758 1.269479

sp75\_337\_c\_4lag | .9779294 .0227719 -0.96 0.338 .9343004 1.023596

sp75\_507\_c\_4lag | 1.02328 .0300612 0.78 0.433 .966025 1.083928

sp75\_607\_c\_4lag | .9758505 .0259073 -0.92 0.357 .9263716 1.027972

sp75\_807\_c\_4lag | 1.016004 .0065021 2.48 0.013 1.00334 1.028829

sp75\_817\_c\_4lag | .8202992 .1023764 -1.59 0.112 .6423018 1.047624

sp48\_28\_c\_4lag | .9461744 .0642747 -0.81 0.415 .8282245 1.080922

sp48\_8\_c\_4lag | 1.124748 .0780817 1.69 0.090 .9816658 1.288686

sp75\_1318\_c\_4lag | 1.253639 .3279733 0.86 0.388 .7507301 2.093444

sp75\_1403\_8\_c\_4lag | .9907067 .0044247 -2.09 0.037 .9820723 .999417

sp75\_208\_c\_4lag | 1.002309 .0110445 0.21 0.834 .9808942 1.024191

sp75\_388\_c\_4lag | 1.023703 .0422772 0.57 0.571 .9441062 1.110011

sp75\_209\_c\_4lag | .9788228 .0414996 -0.50 0.614 .9007729 1.063636

sp75\_389\_c\_4lag | 1.110587 .1285753 0.91 0.365 .8851295 1.393472

sp75\_509\_c\_4lag | 1.224767 .0880897 2.82 0.005 1.063732 1.410181

sp75\_100\_c\_4lag | 1.266348 .1125659 2.66 0.008 1.063873 1.507359

sp75\_1400\_c\_4lag | .9851769 .0287255 -0.51 0.609 .9304545 1.043118

sp75\_1403\_10\_c\_4lag | 1.005278 .0075854 0.70 0.485 .9905199 1.020255

sp75\_160\_c\_4lag | 1.110514 .2926568 0.40 0.691 .6625289 1.861416

sp75\_1720\_c\_4lag | 1.032488 .0245594 1.34 0.179 .9854576 1.081764

sp75\_340\_c\_4lag | .982916 .00702 -2.41 0.016 .9692529 .9967717

sp75\_500\_c\_4lag | 1.008594 .0388787 0.22 0.824 .9352004 1.087747

sp75\_510\_c\_4lag | 1.031688 .1185777 0.27 0.786 .8235971 1.292354

sp75\_810\_c\_4lag | 1.052147 .0234229 2.28 0.022 1.007226 1.099072

mine\_time | 1.001472 .0013712 1.07 0.283 .9987884 1.004163

onsite\_insp\_hours | .9995637 .0001065 -4.09 0.000 .9993549 .9997725

|

state |

AL | 1.067157 .1090975 0.64 0.525 .8733905 1.303912

AR | 1.809998 .0912462 11.77 0.000 1.63971 1.997971

CO | .7422995 .0926943 -2.39 0.017 .5811466 .9481403

IL | 1.216795 .0811432 2.94 0.003 1.067712 1.386694

IN | 1.01672 .0732341 0.23 0.818 .8828552 1.170882

MD | 1.291816 .2044381 1.62 0.106 .9473113 1.761606

MT | .5821398 .031219 -10.09 0.000 .5240576 .6466592

NM | .7609569 .0344436 -6.04 0.000 .6963566 .8315501

OH | 1.154359 .123537 1.34 0.180 .9359386 1.423753

OK | 1.668047 .2711175 3.15 0.002 1.212991 2.293819

PA | 1.354915 .1047605 3.93 0.000 1.164389 1.576616

TN | 1.710524 .1919523 4.78 0.000 1.372805 2.131325

UT | .4973986 .0893102 -3.89 0.000 .3498383 .7071991

VA | .9416071 .051975 -1.09 0.276 .8450549 1.049191

WV | 1.266062 .0576886 5.18 0.000 1.157896 1.384332

WY | .8201152 .0399921 -4.07 0.000 .7453613 .9023663

|

time |

2000.75 | 1.542034 .1168428 5.72 0.000 1.32922 1.78892

2001 | 1.572531 .1180629 6.03 0.000 1.357352 1.821822

2001.25 | 1.723774 .1375743 6.82 0.000 1.474164 2.015648

2001.5 | 2.015028 .1541849 9.16 0.000 1.7344 2.341062

2001.75 | 1.606033 .1248069 6.10 0.000 1.379134 1.870262

2002 | 1.766316 .1631176 6.16 0.000 1.473876 2.116782

2002.25 | 1.719769 .1430768 6.52 0.000 1.461013 2.024352

2002.5 | 1.819728 .1556372 7.00 0.000 1.538882 2.15183

2002.75 | 1.548079 .1152901 5.87 0.000 1.337832 1.791368

2003 | 1.434187 .1070227 4.83 0.000 1.239045 1.660063

2003.25 | 1.559422 .1256285 5.52 0.000 1.33165 1.826154

2003.5 | 1.711499 .1265469 7.27 0.000 1.480606 1.978399

2003.75 | 1.307319 .1031462 3.40 0.001 1.120011 1.525951

2004 | 1.346311 .1073211 3.73 0.000 1.151574 1.573979

2004.25 | 1.44061 .1037233 5.07 0.000 1.251008 1.658947

2004.5 | 1.575994 .1145521 6.26 0.000 1.366735 1.817292

2004.75 | 1.30206 .1036309 3.32 0.001 1.113997 1.521872

2005 | 1.256592 .090761 3.16 0.002 1.090721 1.447687

2005.25 | 1.338025 .0922701 4.22 0.000 1.168868 1.531662

2005.5 | 1.449143 .0996698 5.39 0.000 1.266388 1.658271

2005.75 | 1.207652 .0914912 2.49 0.013 1.04101 1.400968

2006 | 1.26381 .0901858 3.28 0.001 1.098854 1.453529

2006.25 | 1.235043 .0908996 2.87 0.004 1.069137 1.426694

2006.5 | 1.4836 .0987891 5.92 0.000 1.30208 1.690426

2006.75 | 1.146858 .0808679 1.94 0.052 .998825 1.316831

2007 | 1.140641 .07636 1.97 0.049 1.000381 1.300567

2007.25 | 1.181524 .0890712 2.21 0.027 1.019232 1.369657

2007.5 | 1.43842 .1025226 5.10 0.000 1.250883 1.654073

2007.75 | 1.219659 .0788474 3.07 0.002 1.07451 1.384414

2008 | 1.098546 .0703357 1.47 0.142 .9689896 1.245425

2008.25 | 1.073568 .0713736 1.07 0.286 .9424093 1.222981

2008.5 | 1.230312 .0731038 3.49 0.000 1.095059 1.382269

2009 | .9693164 .0550685 -0.55 0.583 .8671762 1.083487

2009.25 | .9559172 .0637044 -0.68 0.499 .8388694 1.089297

2009.5 | 1.086109 .0659942 1.36 0.174 .9641677 1.223472

2009.75 | .9199862 .0614083 -1.25 0.212 .8071687 1.048572

2010 | .922212 .0678081 -1.10 0.271 .798443 1.065167

2010.25 | .9218717 .0739328 -1.01 0.310 .7877807 1.078787

2010.5 | 1.144597 .0766917 2.02 0.044 1.003736 1.305226

2010.75 | .9086036 .0634953 -1.37 0.170 .7923016 1.041978

2011 | .905731 .0604577 -1.48 0.138 .7946601 1.032326

2011.25 | .8523915 .0570643 -2.39 0.017 .7475745 .971905

2011.5 | .9963888 .0623661 -0.06 0.954 .8813539 1.126438

2011.75 | .7671122 .0519716 -3.91 0.000 .671723 .8760473

2012 | .8549865 .0609846 -2.20 0.028 .7434378 .9832725

2012.25 | .7536409 .0503893 -4.23 0.000 .6610771 .8591653

2012.5 | .8708883 .0658818 -1.83 0.068 .750879 1.010078

2012.75 | .6679409 .0535929 -5.03 0.000 .5707436 .7816909

2013 | .7466412 .0567223 -3.85 0.000 .6433483 .8665182

2013.25 | .7076868 .0561301 -4.36 0.000 .6057984 .8267117

2013.5 | .820039 .0657001 -2.48 0.013 .7008704 .9594697

2013.75 | .6280369 .0539638 -5.41 0.000 .5306962 .7432318

2014 | .7051728 .056411 -4.37 0.000 .6028411 .8248752

2014.25 | .7498264 .0630195 -3.43 0.001 .6359473 .8840979

2014.5 | .8001144 .0640723 -2.78 0.005 .683894 .9360853

2014.75 | .7664421 .0610447 -3.34 0.001 .6556677 .8959318

2015 | .6868213 .0557265 -4.63 0.000 .5858413 .8052069

2015.25 | .6422889 .0516252 -5.51 0.000 .5486728 .7518781

2015.5 | .8496433 .071073 -1.95 0.051 .7211627 1.001014

2015.75 | .6574269 .0625395 -4.41 0.000 .5456003 .7921735

2016 | .6983288 .0680676 -3.68 0.000 .576888 .8453341

|

\_cons | .0000485 3.36e-06 -143.54 0.000 .0000423 .0000555

ln(hours) | 1 (exposure)

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

/lnalpha | -1.144287 .0697762 -1.281046 -1.007528

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

alpha | .3184508 .0222203 .2777466 .3651203

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

(est1 stored)

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

. est store nbin

.

. pause "next"

.

. // test for over-dispersion

. lrtest pois nbin, stats force

Likelihood-ratio test LR chi2(1) = 5135.34

(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 -41007.28 165 82344.57 83667.68

nbin | 22,446 -40040.04 -38439.61 166 77211.22 78542.36

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

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

.

. pause "next"

.

. // final model + diagnostics/assessment

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

. predict cv3\_yhat

(option n assumed; predicted number of events)

(7,843 missing values generated)

. gen cv3\_res = dv - cv3\_yhat

(7,843 missing values generated)

.

. summ dv cv3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv | 30,289 2.177721 3.851734 0 71

cv3\_yhat | 22,446 2.707637 3.851027 .0001007 87.24033

.

. pause "next"

. /\*

> scatter dv cv3\_yhat

>

> pause "next"

>

> scatter cv3\_res dv

>

> pause "next"

>

> scatter cv3\_res cv3\_yhat

> \*/

. pause "complete: C.V.3"