. // Model C.SSV.4

.

. // poisson model

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

note: sp48\_4\_ss\_c\_lag\_all omitted because of collinearity

note: sp75\_1322\_ss\_c\_lag\_all omitted because of collinearity

Iteration 0: log pseudolikelihood = -38989.807

Iteration 1: log pseudolikelihood = -35967.331

Iteration 2: log pseudolikelihood = -35944.772

Iteration 3: log pseudolikelihood = -35944.611

Iteration 4: log pseudolikelihood = -35944.58

Iteration 5: log pseudolikelihood = -35944.573

Iteration 6: log pseudolikelihood = -35944.571

Iteration 7: log pseudolikelihood = -35944.571

Iteration 8: log pseudolikelihood = -35944.571

Iteration 9: log pseudolikelihood = -35944.571

Generalized linear models No. of obs = 19,291

Optimization : ML Residual df = 19,131

Scale parameter = 1

Deviance = 35542.66651 (1/df) Deviance = 1.857857

Pearson = 737479.9596 (1/df) Pearson = 38.54895

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

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

AIC = 3.743152

Log pseudolikelihood = -35944.57062 BIC = -153230.4

(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\_ss\_c\_lag\_all | 1.055603 .0404916 1.41 0.158 .9791503 1.138024

sp48\_25\_ss\_c\_lag\_all | .8721851 .02551 -4.68 0.000 .8235926 .9236446

sp48\_26\_ss\_c\_lag\_all | 1.105322 .0851829 1.30 0.194 .9503643 1.285546

sp48\_27\_ss\_c\_lag\_all | 1.059071 .0588667 1.03 0.302 .9497567 1.180967

sp48\_28\_ss\_c\_lag\_all | .9562023 .0541204 -0.79 0.429 .8558002 1.068384

sp48\_4\_ss\_c\_lag\_all | 1 (omitted)

sp48\_5\_ss\_c\_lag\_all | .9913643 .0845061 -0.10 0.919 .8388319 1.171633

sp48\_6\_ss\_c\_lag\_all | 1.078704 .0723079 1.13 0.258 .9458978 1.230156

sp48\_7\_ss\_c\_lag\_all | .9802398 .0446165 -0.44 0.661 .8965802 1.071706

sp48\_8\_ss\_c\_lag\_all | 1.113226 .0887294 1.35 0.178 .9522225 1.301452

sp75\_100\_ss\_c\_lag\_all | 1.200332 .1871776 1.17 0.242 .8842329 1.629432

sp75\_1002\_ss\_c\_lag\_all | 1.091802 .0388618 2.47 0.014 1.018231 1.17069

sp75\_1003\_ss\_c\_lag\_all | 1.009367 .0088894 1.06 0.290 .9920935 1.026941

sp75\_1003\_2\_ss\_c\_lag\_all | 1.021036 .0469835 0.45 0.651 .9329805 1.117402

sp75\_1311\_ss\_c\_lag\_all | 1.029874 .1079258 0.28 0.779 .8386534 1.264696

sp75\_1315\_ss\_c\_lag\_all | 1.036569 .2701789 0.14 0.890 .6219202 1.727673

sp75\_1316\_ss\_c\_lag\_all | .9775016 .0730539 -0.30 0.761 .8443115 1.131702

sp75\_1318\_ss\_c\_lag\_all | .6549705 .0368422 -7.52 0.000 .5865993 .7313107

sp75\_1322\_ss\_c\_lag\_all | 1 (omitted)

sp75\_1400\_ss\_c\_lag\_all | 1.014153 .0275317 0.52 0.605 .9616027 1.069576

sp75\_1400\_1\_ss\_c\_lag\_all | .8943586 .1378937 -0.72 0.469 .6611074 1.209905

sp75\_1403\_10\_ss\_c\_lag\_all | 1.008795 .0081862 1.08 0.281 .9928771 1.024968

sp75\_1403\_5\_ss\_c\_lag\_all | .9935496 .0026036 -2.47 0.014 .9884596 .9986657

sp75\_1403\_6\_ss\_c\_lag\_all | 1.012879 .005523 2.35 0.019 1.002112 1.023762

sp75\_1403\_7\_ss\_c\_lag\_all | .9260509 .0269982 -2.64 0.008 .8746189 .9805074

sp75\_1403\_8\_ss\_c\_lag\_all | .990443 .0037726 -2.52 0.012 .9830763 .9978649

sp75\_1404\_ss\_c\_lag\_all | 1.087031 .1303097 0.70 0.486 .859415 1.374932

sp75\_1404\_1\_ss\_c\_lag\_all | .7603679 .0669077 -3.11 0.002 .6399165 .9034918

sp75\_1405\_ss\_c\_lag\_all | 1.002117 .0097314 0.22 0.828 .9832241 1.021373

sp75\_1405\_1\_ss\_c\_lag\_all | 1.394304 .2430547 1.91 0.057 .9907776 1.962179

sp75\_153\_ss\_c\_lag\_all | 1.295562 .2460257 1.36 0.173 .8929269 1.879751

sp75\_155\_ss\_c\_lag\_all | .5649986 .1330611 -2.42 0.015 .3561095 .8964193

sp75\_156\_ss\_c\_lag\_all | .3272428 .0372764 -9.81 0.000 .2617636 .4091013

sp75\_1719\_2\_ss\_c\_lag\_all | 1.589489 .3944881 1.87 0.062 .9772408 2.585314

sp75\_1719\_4\_ss\_c\_lag\_all | .9428547 .0537354 -1.03 0.302 .8432044 1.054282

sp75\_1720\_ss\_c\_lag\_all | 1.036969 .0196898 1.91 0.056 .9990866 1.076287

sp75\_1725\_ss\_c\_lag\_all | .9982719 .0015501 -1.11 0.265 .9952384 1.001315

sp75\_1906\_ss\_c\_lag\_all | 1.467741 .2813729 2.00 0.045 1.008022 2.13712

sp75\_1916\_ss\_c\_lag\_all | .8840895 .0431106 -2.53 0.012 .8035065 .9727542

sp75\_203\_ss\_c\_lag\_all | .9872606 .0071528 -1.77 0.077 .9733405 1.00138

sp75\_204\_ss\_c\_lag\_all | 1.018967 .0169186 1.13 0.258 .9863406 1.052672

sp75\_205\_ss\_c\_lag\_all | 1.409574 .0833134 5.81 0.000 1.255386 1.582699

sp75\_207\_ss\_c\_lag\_all | 1.249622 .1436621 1.94 0.053 .9975182 1.565441

sp75\_208\_ss\_c\_lag\_all | 1.009972 .0095138 1.05 0.292 .9914967 1.028792

sp75\_209\_ss\_c\_lag\_all | .9890222 .0498091 -0.22 0.827 .8960615 1.091627

sp75\_212\_ss\_c\_lag\_all | 1.040773 .0168373 2.47 0.013 1.008291 1.074302

sp75\_213\_ss\_c\_lag\_all | 1.086149 .0529645 1.69 0.090 .9871472 1.195081

sp75\_215\_ss\_c\_lag\_all | 1.182148 .182996 1.08 0.280 .8727827 1.60117

sp75\_332\_ss\_c\_lag\_all | .8768948 .0638623 -1.80 0.071 .7602499 1.011437

sp75\_334\_ss\_c\_lag\_all | .9905113 .0269909 -0.35 0.726 .9389979 1.044851

sp75\_337\_ss\_c\_lag\_all | .9869929 .0225206 -0.57 0.566 .9438257 1.032134

sp75\_340\_ss\_c\_lag\_all | .9836739 .0083862 -1.93 0.054 .9673738 1.000249

sp75\_343\_ss\_c\_lag\_all | .9695367 .0853324 -0.35 0.725 .8159188 1.152077

sp75\_373\_ss\_c\_lag\_all | 4.15e-06 4.16e-06 -12.36 0.000 5.81e-07 .0000296

sp75\_388\_ss\_c\_lag\_all | 1.072282 .0565702 1.32 0.186 .9669462 1.189093

sp75\_389\_ss\_c\_lag\_all | .8425237 .1396096 -1.03 0.301 .608884 1.165815

sp75\_500\_ss\_c\_lag\_all | 1.078673 .0944997 0.86 0.387 .9084865 1.280741

sp75\_500\_1\_ss\_c\_lag\_all | .8079236 .2546184 -0.68 0.499 .435625 1.4984

sp75\_501\_ss\_c\_lag\_all | 1.385299 .0930636 4.85 0.000 1.214396 1.580253

sp75\_501\_2\_ss\_c\_lag\_all | .9770746 .1764452 -0.13 0.898 .6858251 1.392009

sp75\_502\_ss\_c\_lag\_all | 1.054299 .1630177 0.34 0.732 .7786629 1.427507

sp75\_503\_ss\_c\_lag\_all | .9978109 .0014857 -1.47 0.141 .9949031 1.000727

sp75\_505\_ss\_c\_lag\_all | .9056179 .1484053 -0.60 0.545 .656836 1.248628

sp75\_506\_1\_ss\_c\_lag\_all | 1.319528 .1490533 2.45 0.014 1.057468 1.646531

sp75\_507\_ss\_c\_lag\_all | 1.080557 .044793 1.87 0.062 .996236 1.172015

sp75\_507\_1\_ss\_c\_lag\_all | 1.022828 .0253182 0.91 0.362 .9743896 1.073674

sp75\_509\_ss\_c\_lag\_all | 1.125336 .0738993 1.80 0.072 .9894298 1.27991

sp75\_512\_1\_ss\_c\_lag\_all | 1.126791 .1839201 0.73 0.465 .8182886 1.551603

sp75\_523\_ss\_c\_lag\_all | .9948041 .0147678 -0.35 0.726 .9662767 1.024174

sp75\_523\_3\_ss\_c\_lag\_all | 1.000049 .0050408 0.01 0.992 .990218 1.009978

sp75\_524\_ss\_c\_lag\_all | 1.274415 .0869514 3.55 0.000 1.114897 1.456757

sp75\_602\_ss\_c\_lag\_all | 1.007115 .0332389 0.21 0.830 .9440298 1.074415

sp75\_603\_ss\_c\_lag\_all | .9598218 .0221088 -1.78 0.075 .917453 1.004147

sp75\_604\_ss\_c\_lag\_all | .9966455 .0017742 -1.89 0.059 .9931741 1.000129

sp75\_605\_ss\_c\_lag\_all | .9858947 .0179862 -0.78 0.436 .9512651 1.021785

sp75\_606\_ss\_c\_lag\_all | 1.00709 .0055631 1.28 0.201 .9962456 1.018053

sp75\_607\_ss\_c\_lag\_all | .9891615 .0335462 -0.32 0.748 .9255497 1.057145

sp75\_703\_3\_ss\_c\_lag\_all | 1.212378 .0725693 3.22 0.001 1.078171 1.36329

sp75\_807\_ss\_c\_lag\_all | 1.010362 .0101891 1.02 0.307 .9905882 1.030532

sp75\_810\_ss\_c\_lag\_all | 1.011604 .0397426 0.29 0.769 .9366337 1.092576

sp75\_811\_ss\_c\_lag\_all | .8929005 .088574 -1.14 0.253 .7351323 1.084528

sp75\_812\_ss\_c\_lag\_all | .9637239 .0870476 -0.41 0.682 .8073624 1.150368

sp75\_816\_ss\_c\_lag\_all | 1.056695 .0476744 1.22 0.222 .9672666 1.154391

sp75\_817\_ss\_c\_lag\_all | .8187871 .2624029 -0.62 0.533 .4368979 1.534483

sp75\_906\_ss\_c\_lag\_all | .6027295 .0943746 -3.23 0.001 .4434477 .8192236

mine\_time | 1.002207 .0021986 1.01 0.315 .9979075 1.006526

onsite\_insp\_hours | .9997398 .0001112 -2.34 0.019 .9995219 .9999577

|

state |

AL | .999927 .1014973 -0.00 0.999 .8195346 1.220027

CO | .7664503 .0780305 -2.61 0.009 .6278056 .9357133

IL | 1.328057 .0957124 3.94 0.000 1.15311 1.529545

IN | 1.143161 .1160274 1.32 0.187 .9369429 1.394768

MD | 1.424592 .1888963 2.67 0.008 1.09856 1.847384

MT | 3.71e-06 3.72e-06 -12.47 0.000 5.21e-07 .0000265

NM | .7388367 .0544836 -4.10 0.000 .6394091 .8537251

OH | 1.144145 .1301087 1.18 0.236 .9155562 1.429806

OK | 3.399485 .3936112 10.57 0.000 2.709295 4.2655

PA | 1.077427 .119868 0.67 0.503 .8663397 1.339946

TN | 1.594239 .1819524 4.09 0.000 1.274691 1.993894

UT | .4827948 .0627049 -5.61 0.000 .374291 .6227528

VA | .9321748 .0572851 -1.14 0.253 .8263962 1.051493

WV | 1.107232 .0593812 1.90 0.058 .9967548 1.229954

WY | .7401088 .1526159 -1.46 0.144 .4940507 1.108714

|

time |

2000.25 | 1.120579 .0510487 2.50 0.012 1.024862 1.225235

2000.5 | 1.268984 .0569573 5.31 0.000 1.162119 1.385676

2000.75 | .9330782 .0503485 -1.28 0.199 .839436 1.037166

2001 | .9250204 .0528115 -1.37 0.172 .8270929 1.034543

2001.25 | .97553 .0564339 -0.43 0.668 .8709618 1.092653

2001.5 | 1.198057 .083457 2.59 0.009 1.045159 1.373322

2001.75 | .9154837 .0591804 -1.37 0.172 .8065396 1.039143

2002 | .9639701 .0578362 -0.61 0.541 .8570245 1.084261

2002.25 | .945423 .0549197 -0.97 0.334 .843684 1.059431

2002.5 | 1.013865 .0703736 0.20 0.843 .8849057 1.161617

2002.75 | .9209565 .0652516 -1.16 0.245 .8015484 1.058153

2003 | .7881427 .0577735 -3.25 0.001 .682667 .909915

2003.25 | .8584786 .0683171 -1.92 0.055 .7344994 1.003385

2003.5 | .9181265 .0604963 -1.30 0.195 .8068931 1.044694

2003.75 | .7261719 .051045 -4.55 0.000 .6327116 .8334377

2004 | .728102 .0536919 -4.30 0.000 .6301191 .8413211

2004.25 | .795257 .0573284 -3.18 0.001 .6904722 .9159438

2004.5 | .8682936 .0596985 -2.05 0.040 .7588279 .9935505

2004.75 | .6888643 .0498389 -5.15 0.000 .5977916 .7938119

2005 | .6697046 .0489272 -5.49 0.000 .5803586 .7728056

2005.25 | .7292606 .0557391 -4.13 0.000 .6278031 .8471144

2005.5 | .8331808 .0604788 -2.51 0.012 .7226906 .9605636

2005.75 | .7026486 .0531601 -4.66 0.000 .6058136 .814962

2006 | .6988482 .0526522 -4.76 0.000 .6029096 .8100532

2006.25 | .6599371 .0490139 -5.60 0.000 .5705364 .7633466

2006.5 | .8242741 .0608113 -2.62 0.009 .7133026 .95251

2006.75 | .6628891 .0476637 -5.72 0.000 .5757539 .7632114

2007 | .6762246 .0491446 -5.38 0.000 .5864485 .779744

2007.25 | .6508127 .0572534 -4.88 0.000 .5477393 .7732824

2007.5 | .7937072 .0592068 -3.10 0.002 .6857482 .9186624

2007.75 | .7165731 .05335 -4.48 0.000 .6192802 .8291514

2008 | .6537457 .0482397 -5.76 0.000 .5657166 .7554727

2008.25 | .6509582 .051805 -5.39 0.000 .5569449 .760841

2008.5 | .7953865 .0685744 -2.66 0.008 .6717252 .9418131

2008.75 | .6372915 .0494772 -5.80 0.000 .5473356 .7420319

2009 | .6488273 .0471642 -5.95 0.000 .5626704 .7481766

2009.25 | .6069045 .0468453 -6.47 0.000 .5216972 .7060285

2009.5 | .6516464 .0521866 -5.35 0.000 .5569859 .7623945

2009.75 | .5646098 .0413967 -7.80 0.000 .489034 .6518651

2010 | .5293503 .0458142 -7.35 0.000 .446759 .6272099

2010.25 | .5717991 .0519838 -6.15 0.000 .4784741 .6833268

2010.5 | .6671819 .0520096 -5.19 0.000 .5726504 .7773184

2010.75 | .5554443 .0433823 -7.53 0.000 .4766048 .6473253

2011 | .5502655 .0447084 -7.35 0.000 .4692597 .645255

2011.25 | .5049465 .0400459 -8.62 0.000 .4322539 .5898639

2011.5 | .5772398 .0450252 -7.04 0.000 .4954067 .6725904

2011.75 | .4555733 .0362978 -9.87 0.000 .3897075 .5325714

2012 | .4892812 .0393573 -8.89 0.000 .4179158 .5728334

2012.25 | .458918 .0366402 -9.76 0.000 .3924413 .5366552

2012.5 | .5250378 .0476709 -7.10 0.000 .4394461 .6273004

2012.75 | .4044621 .0362977 -10.09 0.000 .3392254 .4822446

2013 | .4392061 .0398565 -9.07 0.000 .3676416 .5247011

2013.25 | .4283026 .0425086 -8.54 0.000 .3525899 .5202732

2013.5 | .5048877 .0483771 -7.13 0.000 .4184415 .6091928

2013.75 | .3989921 .037799 -9.70 0.000 .3313787 .4804011

2014 | .4405054 .0463263 -7.80 0.000 .3584541 .5413385

2014.25 | .4490825 .0512032 -7.02 0.000 .3591488 .5615363

2014.5 | .4874893 .0472157 -7.42 0.000 .4032013 .5893973

2014.75 | .4514559 .0449864 -7.98 0.000 .3713601 .5488269

2015 | .4206675 .0446211 -8.16 0.000 .3417041 .5178784

2015.25 | .3743068 .0395349 -9.30 0.000 .3043143 .4603975

2015.5 | .5087276 .0557667 -6.17 0.000 .410371 .630658

2015.75 | .3793286 .0478191 -7.69 0.000 .2962859 .4856465

2016 | .4128996 .0504584 -7.24 0.000 .3249552 .5246449

|

\_cons | .0000822 4.59e-06 -168.53 0.000 .0000737 .0000917

ln(hours) | 1 (exposure)

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

.

. quietly poisson dv `ss\_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 = 35542.67

Prob > chi2(19130) = 0.0000

Pearson goodness-of-fit = 737473.6

Prob > chi2(19130) = 0.0000

.

. pause "next"

.

. // negative binomial model

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

note: sp48\_4\_ss\_c\_lag\_all omitted because of collinearity

note: sp75\_1322\_ss\_c\_lag\_all omitted because of collinearity

Iteration 0: log pseudolikelihood = -35398.726

Iteration 1: log pseudolikelihood = -34956.421

Iteration 2: log pseudolikelihood = -34954.547

Iteration 3: log pseudolikelihood = -34954.461

Iteration 4: log pseudolikelihood = -34954.441

Iteration 5: log pseudolikelihood = -34954.437

Iteration 6: log pseudolikelihood = -34954.436

Iteration 7: log pseudolikelihood = -34954.436

Iteration 8: log pseudolikelihood = -34954.436

Iteration 9: log pseudolikelihood = -34954.436

Generalized linear models No. of obs = 19,291

Optimization : ML Residual df = 19,127

Scale parameter = 1

Deviance = 14720.19876 (1/df) Deviance = .7696031

Pearson = 433041.9441 (1/df) Pearson = 22.64035

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

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

AIC = 3.640914

Log pseudolikelihood = -34954.4359 BIC = -174013.4

(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\_ss\_c\_lag\_all | 1.081363 .0605119 1.40 0.162 .9690349 1.206713

sp48\_25\_ss\_c\_lag\_all | .8546879 .0335863 -4.00 0.000 .7913312 .9231172

sp48\_26\_ss\_c\_lag\_all | 1.157475 .0725634 2.33 0.020 1.023644 1.308803

sp48\_27\_ss\_c\_lag\_all | 1.054813 .0521302 1.08 0.280 .9574324 1.162099

sp48\_28\_ss\_c\_lag\_all | .9121824 .0616066 -1.36 0.174 .799086 1.041285

sp48\_4\_ss\_c\_lag\_all | 1 (omitted)

sp48\_5\_ss\_c\_lag\_all | 1.037418 .0768155 0.50 0.620 .8972773 1.199447

sp48\_6\_ss\_c\_lag\_all | 1.087166 .0832658 1.09 0.275 .9356262 1.263249

sp48\_7\_ss\_c\_lag\_all | .9223356 .0408209 -1.83 0.068 .8457 1.005916

sp48\_8\_ss\_c\_lag\_all | 1.130783 .1652529 0.84 0.400 .8491503 1.505824

sp75\_100\_ss\_c\_lag\_all | 1.191879 .223373 0.94 0.349 .8254797 1.720909

sp75\_1002\_ss\_c\_lag\_all | 1.126654 .0707758 1.90 0.058 .9961362 1.274274

sp75\_1003\_ss\_c\_lag\_all | 1.015204 .0103198 1.48 0.138 .9951779 1.035633

sp75\_1003\_2\_ss\_c\_lag\_all | 1.038582 .075734 0.52 0.604 .900266 1.19815

sp75\_1311\_ss\_c\_lag\_all | 1.155488 .1668705 1.00 0.317 .8706405 1.53353

sp75\_1315\_ss\_c\_lag\_all | .7790114 .2384064 -0.82 0.414 .4276067 1.419198

sp75\_1316\_ss\_c\_lag\_all | .9407552 .086581 -0.66 0.507 .7854844 1.126719

sp75\_1318\_ss\_c\_lag\_all | .7024439 .0418387 -5.93 0.000 .6250471 .7894245

sp75\_1322\_ss\_c\_lag\_all | 1 (omitted)

sp75\_1400\_ss\_c\_lag\_all | 1.035463 .0283213 1.27 0.203 .9814163 1.092487

sp75\_1400\_1\_ss\_c\_lag\_all | .7177298 .1244 -1.91 0.056 .5110073 1.00808

sp75\_1403\_10\_ss\_c\_lag\_all | 1.020122 .0106491 1.91 0.056 .9994622 1.041209

sp75\_1403\_5\_ss\_c\_lag\_all | .9911237 .003311 -2.67 0.008 .9846555 .9976344

sp75\_1403\_6\_ss\_c\_lag\_all | 1.011685 .0053089 2.21 0.027 1.001333 1.022144

sp75\_1403\_7\_ss\_c\_lag\_all | .9231659 .0298543 -2.47 0.013 .8664684 .9835734

sp75\_1403\_8\_ss\_c\_lag\_all | .9921498 .0049223 -1.59 0.112 .9825489 1.001844

sp75\_1404\_ss\_c\_lag\_all | 1.099449 .167645 0.62 0.534 .8154228 1.482405

sp75\_1404\_1\_ss\_c\_lag\_all | .5829552 .0728759 -4.32 0.000 .4562738 .7448088

sp75\_1405\_ss\_c\_lag\_all | 1.008449 .0128676 0.66 0.510 .983542 1.033987

sp75\_1405\_1\_ss\_c\_lag\_all | 1.38396 .3224229 1.39 0.163 .8766338 2.184887

sp75\_153\_ss\_c\_lag\_all | 1.291968 .2551763 1.30 0.195 .8772657 1.902709

sp75\_155\_ss\_c\_lag\_all | .502037 .1930988 -1.79 0.073 .2362314 1.066925

sp75\_156\_ss\_c\_lag\_all | .2824167 .0384321 -9.29 0.000 .2162999 .3687436

sp75\_1719\_2\_ss\_c\_lag\_all | 2.083839 .5586991 2.74 0.006 1.232106 3.52436

sp75\_1719\_4\_ss\_c\_lag\_all | .8629815 .0823291 -1.54 0.122 .7158074 1.040415

sp75\_1720\_ss\_c\_lag\_all | 1.049893 .025114 2.04 0.042 1.001807 1.100288

sp75\_1725\_ss\_c\_lag\_all | .9982372 .0017541 -1.00 0.315 .9948051 1.001681

sp75\_1906\_ss\_c\_lag\_all | 1.605685 .3935381 1.93 0.053 .9932052 2.595863

sp75\_1916\_ss\_c\_lag\_all | .8466593 .0475905 -2.96 0.003 .7583381 .9452671

sp75\_203\_ss\_c\_lag\_all | .9817794 .0082784 -2.18 0.029 .9656874 .9981397

sp75\_204\_ss\_c\_lag\_all | 1.03984 .0200899 2.02 0.043 1.001201 1.079971

sp75\_205\_ss\_c\_lag\_all | 1.778624 .16228 6.31 0.000 1.487377 2.126899

sp75\_207\_ss\_c\_lag\_all | 1.564566 .5179892 1.35 0.176 .8176777 2.993683

sp75\_208\_ss\_c\_lag\_all | 1.016873 .010967 1.55 0.121 .9956034 1.038597

sp75\_209\_ss\_c\_lag\_all | 1.021878 .0542655 0.41 0.684 .9208673 1.133968

sp75\_212\_ss\_c\_lag\_all | 1.029025 .0198639 1.48 0.138 .9908196 1.068703

sp75\_213\_ss\_c\_lag\_all | 1.110853 .0836103 1.40 0.162 .958494 1.28743

sp75\_215\_ss\_c\_lag\_all | 1.062667 .2020476 0.32 0.749 .7320757 1.542547

sp75\_332\_ss\_c\_lag\_all | .8331769 .0712162 -2.14 0.033 .7046611 .9851313

sp75\_334\_ss\_c\_lag\_all | .9506342 .0288106 -1.67 0.095 .8958108 1.008813

sp75\_337\_ss\_c\_lag\_all | 1.012585 .0277974 0.46 0.649 .9595427 1.068559

sp75\_340\_ss\_c\_lag\_all | .9759967 .0088716 -2.67 0.008 .9587627 .9935405

sp75\_343\_ss\_c\_lag\_all | .9098717 .0908835 -0.95 0.344 .7480954 1.106632

sp75\_373\_ss\_c\_lag\_all | 1.44e-06 1.45e-06 -13.42 0.000 2.03e-07 .0000103

sp75\_388\_ss\_c\_lag\_all | 1.107995 .0660934 1.72 0.086 .9857401 1.245412

sp75\_389\_ss\_c\_lag\_all | .8729 .1580263 -0.75 0.453 .6121621 1.244694

sp75\_500\_ss\_c\_lag\_all | 1.221266 .139839 1.75 0.081 .9757638 1.528536

sp75\_500\_1\_ss\_c\_lag\_all | 1.108758 .422269 0.27 0.786 .525603 2.338922

sp75\_501\_ss\_c\_lag\_all | 1.328594 .1398044 2.70 0.007 1.080992 1.632909

sp75\_501\_2\_ss\_c\_lag\_all | 1.03979 .19397 0.21 0.834 .7213666 1.49877

sp75\_502\_ss\_c\_lag\_all | .8718223 .1703361 -0.70 0.483 .5944574 1.278602

sp75\_503\_ss\_c\_lag\_all | .9975538 .001664 -1.47 0.142 .9942978 1.00082

sp75\_505\_ss\_c\_lag\_all | .8531153 .1479168 -0.92 0.360 .6073272 1.198375

sp75\_506\_1\_ss\_c\_lag\_all | 1.047916 .1664309 0.29 0.768 .7676056 1.43059

sp75\_507\_ss\_c\_lag\_all | 1.022311 .0537946 0.42 0.675 .9221299 1.133375

sp75\_507\_1\_ss\_c\_lag\_all | 1.037229 .0351346 1.08 0.281 .970603 1.108429

sp75\_509\_ss\_c\_lag\_all | 1.068451 .0795239 0.89 0.374 .9234223 1.236257

sp75\_512\_1\_ss\_c\_lag\_all | .9577851 .2843429 -0.15 0.884 .5352629 1.713835

sp75\_523\_ss\_c\_lag\_all | .9858194 .0159858 -0.88 0.378 .9549805 1.017654

sp75\_523\_3\_ss\_c\_lag\_all | .9930668 .0053335 -1.30 0.195 .982668 1.003576

sp75\_524\_ss\_c\_lag\_all | 1.221714 .0715794 3.42 0.001 1.089176 1.370379

sp75\_602\_ss\_c\_lag\_all | 1.080882 .0709813 1.18 0.236 .9503421 1.229353

sp75\_603\_ss\_c\_lag\_all | .9797658 .0303293 -0.66 0.509 .9220888 1.04105

sp75\_604\_ss\_c\_lag\_all | .9993398 .0026132 -0.25 0.801 .9942311 1.004475

sp75\_605\_ss\_c\_lag\_all | .9990591 .0216507 -0.04 0.965 .9575132 1.042408

sp75\_606\_ss\_c\_lag\_all | 1.007055 .0070951 1.00 0.318 .9932446 1.021058

sp75\_607\_ss\_c\_lag\_all | .9827245 .0349882 -0.49 0.625 .9164869 1.053749

sp75\_703\_3\_ss\_c\_lag\_all | 1.225806 .0877995 2.84 0.004 1.065255 1.410554

sp75\_807\_ss\_c\_lag\_all | 1.019025 .0126371 1.52 0.129 .9945556 1.044097

sp75\_810\_ss\_c\_lag\_all | 1.064002 .0623328 1.06 0.290 .9485848 1.193462

sp75\_811\_ss\_c\_lag\_all | .9709892 .0852887 -0.34 0.737 .8174242 1.153404

sp75\_812\_ss\_c\_lag\_all | .8650216 .0918003 -1.37 0.172 .702576 1.065027

sp75\_816\_ss\_c\_lag\_all | 1.01414 .06055 0.24 0.814 .9021448 1.140039

sp75\_817\_ss\_c\_lag\_all | .800461 .2728088 -0.65 0.514 .4104292 1.561141

sp75\_906\_ss\_c\_lag\_all | .6778199 .1395535 -1.89 0.059 .4527558 1.014763

mine\_time | 1.001424 .0022888 0.62 0.534 .9969481 1.00592

onsite\_insp\_hours | .9996446 .0001218 -2.92 0.004 .9994059 .9998833

|

state |

AL | 1.08388 .1583567 0.55 0.581 .8139903 1.443255

CO | .9394162 .0879889 -0.67 0.505 .7818648 1.128715

IL | 1.510837 .1142406 5.46 0.000 1.302731 1.752187

IN | 1.202071 .1318958 1.68 0.093 .9694672 1.490484

MD | 1.82285 .3309445 3.31 0.001 1.277063 2.601892

MT | 1.48e-06 1.49e-06 -13.39 0.000 2.08e-07 .0000106

NM | .8014547 .0820034 -2.16 0.031 .6558213 .9794278

OH | 1.111867 .1590129 0.74 0.458 .8400764 1.47159

OK | 4.010348 .5023097 11.09 0.000 3.137373 5.126228

PA | 1.431596 .1343284 3.82 0.000 1.191108 1.720639

TN | 1.759623 .2308541 4.31 0.000 1.360649 2.275586

UT | .5182465 .079261 -4.30 0.000 .3840193 .6993906

VA | .9901134 .0577397 -0.17 0.865 .8831736 1.110002

WV | 1.330666 .0691199 5.50 0.000 1.201861 1.473274

WY | .8510014 .1581053 -0.87 0.385 .5912726 1.224821

|

time |

2000.25 | 1.186987 .0719992 2.83 0.005 1.053936 1.336833

2000.5 | 1.283457 .0815071 3.93 0.000 1.133248 1.453576

2000.75 | .8392138 .0565268 -2.60 0.009 .7354249 .9576502

2001 | .8818667 .0618758 -1.79 0.073 .7685617 1.011876

2001.25 | .9846863 .0760105 -0.20 0.842 .8464307 1.145524

2001.5 | 1.152429 .0835187 1.96 0.050 .9998297 1.328319

2001.75 | .9046112 .0663521 -1.37 0.172 .7834791 1.044471

2002 | 1.072419 .1381441 0.54 0.587 .8331369 1.380423

2002.25 | .959715 .0701806 -0.56 0.574 .8315662 1.107612

2002.5 | .9770025 .0692605 -0.33 0.743 .8502631 1.122634

2002.75 | .8108338 .0615043 -2.76 0.006 .6988203 .9408019

2003 | .8139881 .0679971 -2.46 0.014 .6910545 .9587906

2003.25 | .9073598 .0851285 -1.04 0.300 .7549529 1.090534

2003.5 | .9304501 .0689748 -0.97 0.331 .8046241 1.075953

2003.75 | .6790175 .0581427 -4.52 0.000 .5741093 .8030958

2004 | .7247128 .0602447 -3.87 0.000 .6157527 .8529538

2004.25 | .7631189 .0601158 -3.43 0.001 .6539395 .8905266

2004.5 | .7962515 .063044 -2.88 0.004 .6817978 .9299187

2004.75 | .6288642 .0542895 -5.37 0.000 .5309738 .7448017

2005 | .668981 .0581824 -4.62 0.000 .5641354 .7933123

2005.25 | .6745191 .0561305 -4.73 0.000 .5730085 .7940127

2005.5 | .7984508 .0650279 -2.76 0.006 .6806504 .9366391

2005.75 | .6363509 .0558927 -5.15 0.000 .5357139 .7558931

2006 | .7065557 .0637534 -3.85 0.000 .5920269 .8432405

2006.25 | .6173229 .0507971 -5.86 0.000 .5253761 .7253614

2006.5 | .7597458 .0635246 -3.29 0.001 .6449067 .8950346

2006.75 | .6312499 .0548138 -5.30 0.000 .5324616 .7483664

2007 | .6100296 .0483722 -6.23 0.000 .5222218 .7126017

2007.25 | .5998142 .0558854 -5.49 0.000 .4996999 .7199863

2007.5 | .7927561 .0919996 -2.00 0.045 .6314768 .9952262

2007.75 | .6621517 .059326 -4.60 0.000 .5555119 .7892628

2008 | .6155271 .0525596 -5.68 0.000 .520671 .727664

2008.25 | .6039396 .0524021 -5.81 0.000 .5094919 .7158957

2008.5 | .7131359 .0664738 -3.63 0.000 .5940581 .8560826

2008.75 | .5802662 .0500771 -6.31 0.000 .4899687 .6872047

2009 | .6033749 .0501518 -6.08 0.000 .5126681 .7101305

2009.25 | .6309762 .0615468 -4.72 0.000 .5211765 .7639081

2009.5 | .6316103 .0594917 -4.88 0.000 .5251388 .7596689

2009.75 | .540205 .0457299 -7.27 0.000 .4576168 .6376983

2010 | .4904305 .0450297 -7.76 0.000 .4096595 .5871268

2010.25 | .5267129 .0557905 -6.05 0.000 .4279697 .6482386

2010.5 | .703895 .0632967 -3.90 0.000 .5901533 .8395584

2010.75 | .5668835 .0565592 -5.69 0.000 .4661949 .6893187

2011 | .5399639 .0504995 -6.59 0.000 .4495284 .6485931

2011.25 | .4862067 .0437276 -8.02 0.000 .4076309 .579929

2011.5 | .5533597 .0484422 -6.76 0.000 .4661135 .6569365

2011.75 | .44673 .0403729 -8.92 0.000 .3742125 .5333004

2012 | .4702933 .0470021 -7.55 0.000 .386632 .5720575

2012.25 | .4597266 .042826 -8.34 0.000 .383006 .5518153

2012.5 | .5433273 .0567402 -5.84 0.000 .4427614 .6667351

2012.75 | .3753405 .0388692 -9.46 0.000 .306392 .4598047

2013 | .4665497 .0530953 -6.70 0.000 .3732739 .5831339

2013.25 | .4078629 .0419689 -8.72 0.000 .3333695 .4990022

2013.5 | .4726542 .0505418 -7.01 0.000 .383286 .5828598

2013.75 | .3622748 .0385783 -9.53 0.000 .294032 .4463564

2014 | .4295285 .0441895 -8.21 0.000 .3510922 .525488

2014.25 | .4227265 .0490734 -7.42 0.000 .3367018 .53073

2014.5 | .4532682 .0476442 -7.53 0.000 .3688784 .5569642

2014.75 | .4885298 .0566037 -6.18 0.000 .3892836 .6130783

2015 | .3948022 .0414739 -8.85 0.000 .3213372 .4850631

2015.25 | .3472509 .037888 -9.69 0.000 .2803949 .4300476

2015.5 | .4785781 .0512286 -6.88 0.000 .388005 .590294

2015.75 | .3641621 .0438624 -8.39 0.000 .2875873 .4611261

2016 | .3838219 .0502752 -7.31 0.000 .2969166 .4961636

|

\_cons | .0000823 4.81e-06 -160.93 0.000 .0000734 .0000923

ln(hours) | 1 (exposure)

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

.

. pause "next"

.

. eststo clear

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

note: sp48\_4\_ss\_c\_lag\_all omitted because of collinearity

note: sp75\_1322\_ss\_c\_lag\_all omitted because of collinearity

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -41359.085

Iteration 1: log pseudolikelihood = -36079.184

Iteration 2: log pseudolikelihood = -35945.945

Iteration 3: log pseudolikelihood = -35944.58

Iteration 4: log pseudolikelihood = -35944.571

Iteration 5: log pseudolikelihood = -35944.571

Iteration 6: log pseudolikelihood = -35944.571

Iteration 7: log pseudolikelihood = -35944.571

Iteration 8: log pseudolikelihood = -35944.571

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 = -34047.725

Iteration 1: log pseudolikelihood = -33759.006

Iteration 2: log pseudolikelihood = -33747.653

Iteration 3: log pseudolikelihood = -33747.639

Iteration 4: log pseudolikelihood = -33747.639

Negative binomial regression Number of obs = 19,291

Wald chi2(158) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -33747.639 Pseudo R2 = 0.0484

(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\_ss\_c\_lag\_all | 1.06356 .0497933 1.32 0.188 .9703107 1.165771

sp48\_25\_ss\_c\_lag\_all | .8564563 .0300918 -4.41 0.000 .7994623 .9175134

sp48\_26\_ss\_c\_lag\_all | 1.146218 .0724488 2.16 0.031 1.012664 1.297385

sp48\_27\_ss\_c\_lag\_all | 1.064975 .0528988 1.27 0.205 .9661824 1.17387

sp48\_28\_ss\_c\_lag\_all | .9271591 .055694 -1.26 0.208 .8241817 1.043003

sp48\_4\_ss\_c\_lag\_all | 1 (omitted)

sp48\_5\_ss\_c\_lag\_all | 1.054383 .072567 0.77 0.442 .92133 1.206651

sp48\_6\_ss\_c\_lag\_all | 1.076589 .0788611 1.01 0.314 .932607 1.2428

sp48\_7\_ss\_c\_lag\_all | .939311 .0413734 -1.42 0.155 .8616223 1.024004

sp48\_8\_ss\_c\_lag\_all | 1.081188 .1143734 0.74 0.461 .8787334 1.330288

sp75\_100\_ss\_c\_lag\_all | 1.216354 .2122725 1.12 0.262 .8639968 1.71241

sp75\_1002\_ss\_c\_lag\_all | 1.109071 .0501074 2.29 0.022 1.015085 1.211759

sp75\_1003\_ss\_c\_lag\_all | 1.013254 .009419 1.42 0.157 .9949605 1.031884

sp75\_1003\_2\_ss\_c\_lag\_all | 1.02261 .0667421 0.34 0.732 .8998185 1.162157

sp75\_1311\_ss\_c\_lag\_all | 1.056474 .1152747 0.50 0.615 .8530648 1.308385

sp75\_1315\_ss\_c\_lag\_all | .8736558 .2291417 -0.51 0.607 .522502 1.460807

sp75\_1316\_ss\_c\_lag\_all | .9626496 .0751718 -0.49 0.626 .8260366 1.121856

sp75\_1318\_ss\_c\_lag\_all | .6842995 .0384982 -6.74 0.000 .6128558 .7640718

sp75\_1322\_ss\_c\_lag\_all | 1 (omitted)

sp75\_1400\_ss\_c\_lag\_all | 1.030744 .0269952 1.16 0.248 .9791698 1.085035

sp75\_1400\_1\_ss\_c\_lag\_all | .8155688 .1331437 -1.25 0.212 .5922428 1.123108

sp75\_1403\_10\_ss\_c\_lag\_all | 1.013294 .0090025 1.49 0.137 .9958026 1.031093

sp75\_1403\_5\_ss\_c\_lag\_all | .9923132 .0030599 -2.50 0.012 .9863341 .9983286

sp75\_1403\_6\_ss\_c\_lag\_all | 1.011501 .005138 2.25 0.024 1.001481 1.021622

sp75\_1403\_7\_ss\_c\_lag\_all | .9260632 .0269515 -2.64 0.008 .8747176 .9804227

sp75\_1403\_8\_ss\_c\_lag\_all | .9912572 .0043288 -2.01 0.044 .9828091 .999778

sp75\_1404\_ss\_c\_lag\_all | 1.104178 .1379021 0.79 0.427 .8644336 1.410414

sp75\_1404\_1\_ss\_c\_lag\_all | .6211314 .0663172 -4.46 0.000 .503851 .7657109

sp75\_1405\_ss\_c\_lag\_all | 1.007164 .0116895 0.62 0.539 .9845118 1.030338

sp75\_1405\_1\_ss\_c\_lag\_all | 1.396201 .2912976 1.60 0.110 .9275915 2.101547

sp75\_153\_ss\_c\_lag\_all | 1.350161 .2551064 1.59 0.112 .9322985 1.955311

sp75\_155\_ss\_c\_lag\_all | .5364065 .171228 -1.95 0.051 .2869323 1.002787

sp75\_156\_ss\_c\_lag\_all | .3037725 .0374656 -9.66 0.000 .2385426 .3868396

sp75\_1719\_2\_ss\_c\_lag\_all | 1.874459 .4680388 2.52 0.012 1.149045 3.05784

sp75\_1719\_4\_ss\_c\_lag\_all | .8947787 .0657302 -1.51 0.130 .7747946 1.033343

sp75\_1720\_ss\_c\_lag\_all | 1.048322 .021957 2.25 0.024 1.006159 1.092253

sp75\_1725\_ss\_c\_lag\_all | .9984656 .0016008 -0.96 0.338 .995333 1.001608

sp75\_1906\_ss\_c\_lag\_all | 1.617488 .3444485 2.26 0.024 1.065553 2.455312

sp75\_1916\_ss\_c\_lag\_all | .8736004 .0439826 -2.68 0.007 .7915127 .9642013

sp75\_203\_ss\_c\_lag\_all | .9849727 .007493 -1.99 0.047 .9703956 .9997689

sp75\_204\_ss\_c\_lag\_all | 1.033353 .0190368 1.78 0.075 .9967072 1.071346

sp75\_205\_ss\_c\_lag\_all | 1.686404 .1751657 5.03 0.000 1.375777 2.067167

sp75\_207\_ss\_c\_lag\_all | 1.345234 .2096345 1.90 0.057 .9911758 1.825764

sp75\_208\_ss\_c\_lag\_all | 1.015835 .0101864 1.57 0.117 .9960646 1.035997

sp75\_209\_ss\_c\_lag\_all | 1.006041 .0509441 0.12 0.905 .910987 1.111012

sp75\_212\_ss\_c\_lag\_all | 1.035855 .0173322 2.11 0.035 1.002435 1.070388

sp75\_213\_ss\_c\_lag\_all | 1.101836 .0667975 1.60 0.110 .9783944 1.240852

sp75\_215\_ss\_c\_lag\_all | 1.156388 .1764567 0.95 0.341 .8574646 1.55952

sp75\_332\_ss\_c\_lag\_all | .865975 .0630711 -1.98 0.048 .7507758 .9988504

sp75\_334\_ss\_c\_lag\_all | .9592636 .0271765 -1.47 0.142 .9074505 1.014035

sp75\_337\_ss\_c\_lag\_all | 1.004117 .0224814 0.18 0.854 .9610076 1.049161

sp75\_340\_ss\_c\_lag\_all | .9782814 .0081579 -2.63 0.008 .9624222 .994402

sp75\_343\_ss\_c\_lag\_all | .9377588 .0835323 -0.72 0.471 .7875335 1.11664

sp75\_373\_ss\_c\_lag\_all | 5.36e-08 5.38e-08 -16.70 0.000 7.52e-09 3.83e-07

sp75\_388\_ss\_c\_lag\_all | 1.085326 .0581495 1.53 0.126 .9771356 1.205497

sp75\_389\_ss\_c\_lag\_all | .8689053 .1479486 -0.83 0.409 .6223551 1.213128

sp75\_500\_ss\_c\_lag\_all | 1.175713 .1222503 1.56 0.120 .9589449 1.441481

sp75\_500\_1\_ss\_c\_lag\_all | 1.007947 .3730451 0.02 0.983 .4879827 2.081952

sp75\_501\_ss\_c\_lag\_all | 1.342582 .124069 3.19 0.001 1.120162 1.609167

sp75\_501\_2\_ss\_c\_lag\_all | 1.021325 .1864005 0.12 0.908 .7141882 1.460547

sp75\_502\_ss\_c\_lag\_all | .8967688 .1575418 -0.62 0.535 .6355414 1.265369

sp75\_503\_ss\_c\_lag\_all | .9973449 .0015583 -1.70 0.089 .9942954 1.000404

sp75\_505\_ss\_c\_lag\_all | .8450923 .139639 -1.02 0.308 .6113018 1.168295

sp75\_506\_1\_ss\_c\_lag\_all | 1.126296 .1539561 0.87 0.384 .8615881 1.47233

sp75\_507\_ss\_c\_lag\_all | 1.046394 .048795 0.97 0.331 .9549976 1.146537

sp75\_507\_1\_ss\_c\_lag\_all | 1.0308 .0292989 1.07 0.286 .9749458 1.089855

sp75\_509\_ss\_c\_lag\_all | 1.097047 .0756919 1.34 0.179 .9582873 1.255899

sp75\_512\_1\_ss\_c\_lag\_all | 1.053624 .2212531 0.25 0.804 .6981354 1.590126

sp75\_523\_ss\_c\_lag\_all | .9911693 .0150218 -0.59 0.558 .96216 1.021053

sp75\_523\_3\_ss\_c\_lag\_all | .9956564 .005074 -0.85 0.393 .985761 1.005651

sp75\_524\_ss\_c\_lag\_all | 1.262798 .0720063 4.09 0.000 1.129269 1.412117

sp75\_602\_ss\_c\_lag\_all | 1.043743 .047046 0.95 0.342 .9554901 1.140147

sp75\_603\_ss\_c\_lag\_all | .9674247 .0239459 -1.34 0.181 .9216119 1.015515

sp75\_604\_ss\_c\_lag\_all | .9975021 .002092 -1.19 0.233 .9934102 1.001611

sp75\_605\_ss\_c\_lag\_all | .9962046 .018435 -0.21 0.837 .96072 1.033

sp75\_606\_ss\_c\_lag\_all | 1.00698 .0063917 1.10 0.273 .9945304 1.019586

sp75\_607\_ss\_c\_lag\_all | .9821779 .0327478 -0.54 0.590 .9200457 1.048506

sp75\_703\_3\_ss\_c\_lag\_all | 1.241482 .0805623 3.33 0.001 1.093211 1.409862

sp75\_807\_ss\_c\_lag\_all | 1.016654 .0111807 1.50 0.133 .9949749 1.038806

sp75\_810\_ss\_c\_lag\_all | 1.050453 .0498169 1.04 0.299 .957214 1.152774

sp75\_811\_ss\_c\_lag\_all | .9478026 .0809206 -0.63 0.530 .8017607 1.120446

sp75\_812\_ss\_c\_lag\_all | .9036944 .0861232 -1.06 0.288 .7497233 1.089287

sp75\_816\_ss\_c\_lag\_all | 1.031133 .0533195 0.59 0.553 .9317503 1.141117

sp75\_817\_ss\_c\_lag\_all | .80254 .2696914 -0.65 0.513 .4153582 1.550639

sp75\_906\_ss\_c\_lag\_all | .6438212 .1156897 -2.45 0.014 .4527004 .9156293

mine\_time | 1.0015 .0021264 0.71 0.480 .9973412 1.005677

onsite\_insp\_hours | .9997075 .0001127 -2.60 0.009 .9994866 .9999284

|

state |

AL | 1.0591 .137634 0.44 0.659 .8209567 1.366325

CO | .87271 .0838795 -1.42 0.157 .7228658 1.053616

IL | 1.416755 .0961876 5.13 0.000 1.240236 1.618398

IN | 1.160604 .116996 1.48 0.140 .9525276 1.414133

MD | 1.630324 .2496683 3.19 0.001 1.207593 2.201036

MT | 5.17e-08 5.18e-08 -16.74 0.000 7.25e-09 3.68e-07

NM | .8002172 .0670986 -2.66 0.008 .6789444 .9431516

OH | 1.135439 .1551543 0.93 0.353 .8686594 1.48415

OK | 3.79779 .4464589 11.35 0.000 3.016239 4.781852

PA | 1.334615 .1212151 3.18 0.001 1.116983 1.594651

TN | 1.693684 .2049735 4.35 0.000 1.336036 2.147073

UT | .4971475 .069463 -5.00 0.000 .378053 .6537592

VA | .9769654 .0548424 -0.42 0.678 .8751784 1.090591

WV | 1.250165 .0640704 4.36 0.000 1.13069 1.382264

WY | .8133812 .1568523 -1.07 0.284 .5573763 1.18697

|

time |

2000.25 | 1.156066 .0617352 2.72 0.007 1.041184 1.283624

2000.5 | 1.265924 .0688497 4.34 0.000 1.137925 1.408322

2000.75 | .8718006 .0525542 -2.28 0.023 .7746485 .9811369

2001 | .8841556 .0546783 -1.99 0.046 .7832282 .9980886

2001.25 | .9782842 .0641853 -0.33 0.738 .8602361 1.112532

2001.5 | 1.154861 .0750217 2.22 0.027 1.016797 1.311672

2001.75 | .8961288 .0576389 -1.71 0.088 .7899894 1.016529

2002 | .9963309 .0822378 -0.04 0.964 .8475101 1.171284

2002.25 | .9442474 .0590931 -0.92 0.359 .8352486 1.06747

2002.5 | .9819114 .0633041 -0.28 0.777 .8653566 1.114165

2002.75 | .8358435 .057651 -2.60 0.009 .7301543 .9568311

2003 | .7853054 .0582261 -3.26 0.001 .679089 .9081352

2003.25 | .8576985 .0647856 -2.03 0.042 .7396731 .9945565

2003.5 | .9076246 .0602509 -1.46 0.144 .7968946 1.033741

2003.75 | .6819026 .0519497 -5.03 0.000 .58732 .7917167

2004 | .7209482 .054437 -4.33 0.000 .6217732 .835942

2004.25 | .7764594 .0558419 -3.52 0.000 .6743751 .8939969

2004.5 | .8193285 .0594804 -2.74 0.006 .710663 .9446096

2004.75 | .6414428 .0504823 -5.64 0.000 .5497527 .7484253

2005 | .6546925 .0505122 -5.49 0.000 .5628126 .761572

2005.25 | .6826232 .0523156 -4.98 0.000 .5874159 .7932615

2005.5 | .8056606 .0594314 -2.93 0.003 .6972062 .9309856

2005.75 | .6542734 .0526929 -5.27 0.000 .5587358 .766147

2006 | .6908488 .0546711 -4.67 0.000 .5915919 .806759

2006.25 | .6317369 .0476294 -6.09 0.000 .5449547 .7323388

2006.5 | .7799406 .0583164 -3.32 0.001 .673623 .9030382

2006.75 | .6362255 .048795 -5.90 0.000 .5474301 .739424

2007 | .6340464 .0463843 -6.23 0.000 .5493518 .7317985

2007.25 | .6146945 .0546928 -5.47 0.000 .5163251 .7318051

2007.5 | .7828638 .0713475 -2.69 0.007 .6548029 .9359697

2007.75 | .6774619 .0536796 -4.91 0.000 .5800144 .7912814

2008 | .6221031 .0475749 -6.21 0.000 .5355097 .722699

2008.25 | .6143275 .0495545 -6.04 0.000 .524491 .7195515

2008.5 | .7362623 .06471 -3.48 0.000 .6197558 .8746707

2008.75 | .5997419 .0479457 -6.40 0.000 .5127622 .701476

2009 | .6079519 .0449103 -6.74 0.000 .5260048 .7026656

2009.25 | .6087609 .051913 -5.82 0.000 .5150618 .7195057

2009.5 | .6283189 .0532344 -5.48 0.000 .5321842 .7418195

2009.75 | .5406147 .0411929 -8.07 0.000 .4656176 .6276916

2010 | .4958479 .041971 -8.29 0.000 .4200477 .5853267

2010.25 | .5404447 .0551395 -6.03 0.000 .4424929 .6600793

2010.5 | .6774827 .0553798 -4.76 0.000 .5771889 .7952037

2010.75 | .5507774 .0471194 -6.97 0.000 .4657524 .6513239

2011 | .534211 .0451588 -7.42 0.000 .4526448 .6304752

2011.25 | .4857339 .0398937 -8.79 0.000 .4135124 .5705691

2011.5 | .5557109 .0441629 -7.39 0.000 .4755575 .6493738

2011.75 | .4394258 .0360487 -10.02 0.000 .3741591 .5160772

2012 | .4668703 .0410565 -8.66 0.000 .392954 .5546906

2012.25 | .4481715 .0374984 -9.59 0.000 .3803859 .5280367

2012.5 | .5234078 .0483905 -7.00 0.000 .4366609 .6273879

2012.75 | .3799589 .0358118 -10.27 0.000 .3158708 .4570501

2013 | .4384163 .0422109 -8.56 0.000 .3630218 .5294692

2013.25 | .4057413 .0385568 -9.49 0.000 .3367915 .4888069

2013.5 | .4705717 .0453813 -7.82 0.000 .3895265 .5684792

2013.75 | .3702239 .0361787 -10.17 0.000 .305692 .4483786

2014 | .427301 .0424194 -8.56 0.000 .3517489 .5190808

2014.25 | .4193881 .0452412 -8.06 0.000 .3394637 .5181302

2014.5 | .4544756 .0435877 -8.22 0.000 .3765944 .5484629

2014.75 | .4564728 .0465142 -7.70 0.000 .3738335 .5573803

2015 | .3948448 .0392594 -9.35 0.000 .3249313 .4798012

2015.25 | .3513814 .0356589 -10.31 0.000 .2880031 .4287068

2015.5 | .4878946 .0489744 -7.15 0.000 .4007589 .5939759

2015.75 | .3655002 .0423643 -8.68 0.000 .2912237 .4587208

2016 | .3879217 .0467933 -7.85 0.000 .3062439 .4913837

|

\_cons | .0000828 4.39e-06 -177.43 0.000 .0000747 .0000919

ln(hours) | 1 (exposure)

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

/lnalpha | -1.218343 .0760984 -1.367493 -1.069193

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

alpha | .2957197 .0225038 .2547447 .3432854

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.C.SSV.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.SSV.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.SSV.4.csv)

. est store nbin

.

. pause "next"

.

. // test for over-dispersion

. lrtest pois nbin, stats force

Likelihood-ratio test LR chi2(1) = -4393.86

(Assumption: nbin nested in pois) Prob > chi2 = 1.0000

Akaike's information criterion and Bayesian information criterion

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

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

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

nbin | 19,291 -35464.07 -33747.64 160 67815.28 69074.06

pois | 19,291 -40650.43 -35944.57 161 72211.14 73477.79

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

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

.

. pause "next"

.

. // final model + diagnostics/assessment

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

. predict cssv4\_yhat

(option n assumed; predicted number of events)

(10,998 missing values generated)

. gen cssv4\_res = dv - cssv4\_yhat

(10,998 missing values generated)

.

. summ dv cssv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv | 30,289 2.177721 3.851734 0 71

cssv4\_yhat | 19,291 2.944421 4.209343 7.38e-09 57.95344

. /\*

> pause "next"

>

> scatter dv cssv4\_yhat

>

> pause "next"

>

> scatter cssv4\_res dv

>

> pause "next"

>

> scatter cssv4\_res cssv4\_yhat

> \*/

. pause "complete: C.SSV.4"