. // Model SP.C.V.3

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

note: sp77\_801\_1\_c\_4lag omitted because of collinearity

note: sp77\_606\_c\_4lag omitted because of collinearity

Iteration 0: log pseudolikelihood = -9187.8709

Iteration 1: log pseudolikelihood = -8583.9934

Iteration 2: log pseudolikelihood = -8578.7733

Iteration 3: log pseudolikelihood = -8578.7021

Iteration 4: log pseudolikelihood = -8578.6893

Iteration 5: log pseudolikelihood = -8578.6864

Iteration 6: log pseudolikelihood = -8578.6857

Iteration 7: log pseudolikelihood = -8578.6856

Iteration 8: log pseudolikelihood = -8578.6855

Iteration 9: log pseudolikelihood = -8578.6855

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,914

Scale parameter = 1

Deviance = 7582.505338 (1/df) Deviance = 1.282128

Pearson = 8400.213199 (1/df) Pearson = 1.420395

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

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

AIC = 2.85229

Log pseudolikelihood = -8578.685516 BIC = -44110.68

(Std. Err. adjusted for 1,238 clusters in mineid)

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| Robust

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

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

sp47\_41\_c\_4lag | .9820876 .0123591 -1.44 0.151 .9581605 1.006612

sp48\_11\_c\_4lag | .994018 .0132638 -0.45 0.653 .9683583 1.020358

sp71\_701\_c\_4lag | 1.397912 .1778157 2.63 0.008 1.089447 1.793715

sp75\_1001\_1\_c\_4lag | 1.004169 .0502535 0.08 0.934 .9103506 1.107657

sp75\_1001\_c\_4lag | .8951467 .066925 -1.48 0.138 .773134 1.036415

sp75\_1003\_1\_c\_4lag | .9307689 .0906382 -0.74 0.461 .7690453 1.126502

sp75\_1400\_1\_c\_4lag | .9980451 .0566448 -0.03 0.972 .8929756 1.115477

sp75\_1401\_1\_c\_4lag | 1.002644 .1094514 0.02 0.981 .8095195 1.241842

sp75\_1401\_c\_4lag | .9558629 .0339856 -1.27 0.204 .8915203 1.024849

sp75\_1403\_11\_c\_4lag | 1.038655 .1022308 0.39 0.700 .8564282 1.259656

sp75\_1404\_1\_c\_4lag | .8776306 .0876508 -1.31 0.191 .7216066 1.06739

sp75\_1405\_1\_c\_4lag | 1.146693 .0617056 2.54 0.011 1.031912 1.274242

sp75\_1431\_c\_4lag | .9227154 .0795785 -0.93 0.351 .7792142 1.092644

sp75\_151\_c\_4lag | 1.282686 .1077035 2.96 0.003 1.088047 1.512145

sp75\_1721\_c\_4lag | .9779104 .2955309 -0.07 0.941 .5408295 1.768226

sp75\_1731\_c\_4lag | 1.000377 .0007098 0.53 0.595 .9989871 1.001769

sp75\_1911\_c\_4lag | .9990794 .0028395 -0.32 0.746 .9935296 1.00466

sp75\_211\_c\_4lag | .9967598 .0047256 -0.68 0.494 .9875408 1.006065

sp75\_341\_c\_4lag | 1.066149 .0690987 0.99 0.323 .9389666 1.210558

sp75\_506\_1\_c\_4lag | 1.075991 .0238928 3.30 0.001 1.030166 1.123854

sp75\_510\_1\_c\_4lag | 1.092556 .1797492 0.54 0.591 .7914119 1.50829

sp75\_511\_1\_c\_4lag | .706334 .1139405 -2.16 0.031 .5148737 .9689906

sp75\_511\_c\_4lag | 1.010327 .0123014 0.84 0.399 .9865023 1.034727

sp75\_512\_1\_c\_4lag | 1.112682 .0952847 1.25 0.212 .9407585 1.316024

sp75\_513\_1\_c\_4lag | 1.018471 .0335352 0.56 0.578 .9548198 1.086366

sp75\_516\_1\_c\_4lag | 1.00753 .0417864 0.18 0.856 .9288707 1.092851

sp75\_517\_1\_c\_4lag | .9681143 .0412373 -0.76 0.447 .8905725 1.052408

sp75\_518\_1\_c\_4lag | .9986422 .0052478 -0.26 0.796 .9884094 1.008981

sp75\_523\_1\_c\_4lag | .9950737 .0090593 -0.54 0.588 .9774753 1.012989

sp75\_600\_1\_c\_4lag | .9685525 .0389221 -0.80 0.427 .8951936 1.047923

sp75\_601\_1\_c\_4lag | 1.001732 .0036203 0.48 0.632 .9946615 1.008853

sp75\_601\_c\_4lag | 1.005559 .0041634 1.34 0.181 .9974314 1.013752

sp75\_700\_1\_c\_4lag | .9229302 .032293 -2.29 0.022 .8617586 .9884441

sp75\_701\_1\_c\_4lag | .9846452 .0100657 -1.51 0.130 .9651131 1.004573

sp75\_701\_c\_4lag | 1.002149 .003479 0.62 0.536 .9953534 1.008991

sp75\_702\_1\_c\_4lag | .9867147 .0536927 -0.25 0.806 .8868965 1.097767

sp75\_703\_1\_c\_4lag | .8680232 .071055 -1.73 0.084 .7393555 1.019083

sp75\_705\_1\_c\_4lag | .950719 .0280996 -1.71 0.087 .8972097 1.00742

sp75\_801\_c\_4lag | .9823336 .0866392 -0.20 0.840 .8263905 1.167704

sp75\_811\_c\_4lag | 1.010107 .0099739 1.02 0.308 .990747 1.029846

sp75\_821\_c\_4lag | 1.034991 .0164147 2.17 0.030 1.003314 1.067668

sp75\_831\_c\_4lag | .8731501 .0651397 -1.82 0.069 .7543739 1.010628

sp75\_901\_c\_4lag | .9716008 .0222127 -1.26 0.208 .9290257 1.016127

sp75\_902\_1\_c\_4lag | 1.163432 .0527177 3.34 0.001 1.064563 1.271484

sp77\_1111\_c\_4lag | .9575212 .0449908 -0.92 0.356 .8732794 1.049889

sp77\_401\_c\_4lag | 1.001429 .0191973 0.07 0.941 .9645009 1.039771

sp77\_403\_1\_c\_4lag | 1.035181 .036963 0.97 0.333 .9652115 1.110222

sp77\_411\_c\_4lag | .9444001 .0962823 -0.56 0.575 .7733487 1.153285

sp77\_501\_c\_4lag | .9828963 .0259309 -0.65 0.513 .9333644 1.035057

sp77\_502\_1\_c\_4lag | 1.08058 .1691109 0.50 0.620 .7951399 1.468486

sp77\_503\_1\_c\_4lag | .9771292 .0591334 -0.38 0.702 .8678395 1.100182

sp77\_506\_1\_c\_4lag | 1.001583 .0065522 0.24 0.809 .9888225 1.014507

sp77\_508\_1\_c\_4lag | 1.007114 .0383442 0.19 0.852 .9346965 1.085142

sp77\_511\_c\_4lag | .9644911 .0420321 -0.83 0.407 .8855298 1.050493

sp77\_601\_c\_4lag | .949792 .0593978 -0.82 0.410 .8402263 1.073645

sp77\_606\_1\_c\_4lag | .9640387 .0789387 -0.45 0.655 .8210985 1.131862

sp77\_700\_1\_c\_4lag | 1.032369 .0631653 0.52 0.603 .915702 1.163899

sp77\_701\_1\_c\_4lag | .9819701 .047567 -0.38 0.707 .8930293 1.079769

sp77\_701\_c\_4lag | 1.00878 .0089665 0.98 0.325 .9913582 1.026508

sp77\_704\_1\_c\_4lag | 1.080147 .0665152 1.25 0.211 .9573401 1.218709

sp77\_800\_1\_c\_4lag | .9741645 .0382521 -0.67 0.505 .9020041 1.052098

sp77\_801\_1\_c\_4lag | 1 (omitted)

sp77\_801\_c\_4lag | .6870257 .1114908 -2.31 0.021 .4998499 .944292

sp77\_807\_1\_c\_4lag | 1.113056 .1194013 1.00 0.318 .9019978 1.373498

sp77\_900\_1\_c\_4lag | 1.03314 .0685951 0.49 0.623 .9070768 1.176724

sp77\_901\_1\_c\_4lag | .8644784 .1076346 -1.17 0.242 .6772868 1.103407

sp77\_901\_c\_4lag | 1.032934 .0332555 1.01 0.314 .9697679 1.100214

sp47\_42\_c\_4lag | .9374536 .0342086 -1.77 0.077 .8727476 1.006957

sp75\_1100\_2\_c\_4lag | 1.001275 .0016969 0.75 0.452 .9979547 1.004607

sp75\_1102\_c\_4lag | .98303 .0143504 -1.17 0.241 .9553023 1.011563

sp75\_1106\_2\_c\_4lag | 1.014762 .0094007 1.58 0.114 .9965034 1.033355

sp75\_1400\_2\_c\_4lag | .9899583 .0357885 -0.28 0.780 .9222415 1.062647

sp75\_1402\_2\_c\_4lag | .9544429 .1109227 -0.40 0.688 .7600211 1.1986

sp75\_1432\_c\_4lag | .9653955 .0373982 -0.91 0.363 .8948099 1.041549

sp75\_1600\_2\_c\_4lag | .9974324 .0054448 -0.47 0.638 .9868176 1.008161

sp75\_1912\_c\_4lag | 1.009494 .020359 0.47 0.639 .9703694 1.050196

sp75\_202\_c\_4lag | 1.000195 .0005504 0.36 0.723 .9991172 1.001275

sp75\_212\_c\_4lag | .9869952 .0085539 -1.51 0.131 .9703715 1.003904

sp75\_312\_c\_4lag | 1.017379 .0080032 2.19 0.029 1.001813 1.033186

sp75\_342\_c\_4lag | 1.001224 .0016304 0.75 0.452 .9980337 1.004425

sp75\_352\_c\_4lag | .9810703 .0112747 -1.66 0.096 .9592193 1.003419

sp75\_382\_c\_4lag | 1.026179 .0125478 2.11 0.035 1.001879 1.05107

sp75\_512\_2\_c\_4lag | 1.005518 .0040746 1.36 0.174 .9975636 1.013536

sp75\_512\_c\_4lag | .999915 .0010856 -0.08 0.938 .9977895 1.002045

sp75\_516\_2\_c\_4lag | 1.008365 .0065753 1.28 0.201 .9955597 1.021335

sp75\_523\_2\_c\_4lag | .9960504 .0062298 -0.63 0.527 .9839148 1.008336

sp75\_601\_2\_c\_4lag | .9457867 .0396622 -1.33 0.184 .8711591 1.026807

sp75\_602\_c\_4lag | 1.004812 .0115399 0.42 0.676 .9824463 1.027686

sp75\_701\_2\_c\_4lag | .9964165 .0144718 -0.25 0.805 .9684522 1.025188

sp75\_702\_c\_4lag | .8708793 .0641109 -1.88 0.060 .7538686 1.006052

sp75\_703\_2\_c\_4lag | .9690543 .0395782 -0.77 0.442 .8945059 1.049816

sp75\_705\_2\_c\_4lag | 1.04971 .049957 1.02 0.308 .9562243 1.152336

sp75\_800\_2\_c\_4lag | 1.007746 .0732076 0.11 0.915 .8740086 1.161948

sp75\_802\_c\_4lag | 1.04002 .041569 0.98 0.326 .9616563 1.12477

sp75\_803\_2\_c\_4lag | 1.058781 .0991949 0.61 0.542 .8811681 1.272194

sp75\_812\_c\_4lag | 1.014818 .0446191 0.33 0.738 .9310284 1.106149

sp75\_832\_c\_4lag | .9277738 .153052 -0.45 0.650 .6714629 1.281924

sp75\_900\_2\_c\_4lag | .9686707 .0590388 -0.52 0.601 .859601 1.09158

sp75\_902\_2\_c\_4lag | 1.001536 .0150272 0.10 0.919 .9725117 1.031426

sp75\_902\_c\_4lag | 1.001197 .0057952 0.21 0.836 .9899023 1.01262

sp77\_1112\_c\_4lag | .9993699 .0238725 -0.03 0.979 .9536592 1.047272

sp77\_1432\_c\_4lag | .9890195 .0602995 -0.18 0.856 .8776229 1.114556

sp77\_1802\_c\_4lag | 1.02204 .0697058 0.32 0.749 .8941566 1.168213

sp77\_202\_c\_4lag | .9916393 .0038833 -2.14 0.032 .9840574 .9992797

sp77\_402\_c\_4lag | 1.008508 .0084645 1.01 0.313 .9920534 1.025235

sp77\_403\_2\_c\_4lag | 1.369024 .220963 1.95 0.052 .9977588 1.878437

sp77\_412\_c\_4lag | 1.017113 .0195635 0.88 0.378 .979483 1.056188

sp77\_502\_2\_c\_4lag | .972991 .0112775 -2.36 0.018 .9511366 .9953476

sp77\_502\_c\_4lag | .9974636 .0020325 -1.25 0.213 .9934881 1.001455

sp77\_512\_c\_4lag | .9988608 .00531 -0.21 0.830 .9885074 1.009323

sp77\_602\_c\_4lag | 1.126295 .0524251 2.56 0.011 1.028092 1.23388

sp77\_701\_2\_c\_4lag | .9961533 .034715 -0.11 0.912 .9303847 1.066571

sp77\_702\_c\_4lag | .8287338 .1235031 -1.26 0.207 .6188191 1.109856

sp77\_800\_2\_c\_4lag | 1.014924 .0299665 0.50 0.616 .9578574 1.07539

sp77\_802\_c\_4lag | 1.059694 .0885814 0.69 0.488 .8995537 1.248342

sp77\_807\_2\_c\_4lag | .9867594 .0426908 -0.31 0.758 .9065364 1.074082

sp77\_900\_2\_c\_4lag | 1.06675 .0326732 2.11 0.035 1.004596 1.132749

sp77\_902\_2\_c\_4lag | .8961444 .0987606 -0.99 0.320 .7220551 1.112207

sp77\_902\_c\_4lag | 1.023169 .0310343 0.76 0.450 .9641159 1.08584

sp47\_43\_c\_4lag | 1.148955 .0919086 1.74 0.083 .9822286 1.343982

sp72\_503\_c\_4lag | .9885346 .0127345 -0.90 0.371 .9638879 1.013812

sp75\_1106\_3\_c\_4lag | 1.005613 .0033597 1.68 0.094 .9990493 1.012219

sp75\_1400\_3\_c\_4lag | 1.01913 .0120552 1.60 0.109 .9957739 1.043033

sp75\_1403\_3\_c\_4lag | .9335697 .0660043 -0.97 0.331 .8127668 1.072328

sp75\_1433\_c\_4lag | 1.010046 .0202052 0.50 0.617 .971211 1.050434

sp75\_153\_c\_4lag | .9944772 .0588207 -0.09 0.925 .8856221 1.116712

sp75\_1903\_c\_4lag | .9965268 .0066704 -0.52 0.603 .9835385 1.009687

sp75\_1913\_c\_4lag | 1.010838 .0112976 0.96 0.335 .9889356 1.033225

sp75\_503\_c\_4lag | .998988 .0008278 -1.22 0.222 .9973669 1.000612

sp75\_513\_c\_4lag | 1.000797 .020045 0.04 0.968 .9622705 1.040866

sp75\_523\_c\_4lag | .9942222 .0071495 -0.81 0.420 .9803077 1.008334

sp75\_601\_3\_c\_4lag | .9590645 .0415138 -0.97 0.334 .8810548 1.043981

sp75\_603\_c\_4lag | .9980152 .0194991 -0.10 0.919 .9605202 1.036974

sp75\_701\_3\_c\_4lag | 1.018528 .0173347 1.08 0.281 .9851125 1.053076

sp75\_703\_3\_c\_4lag | 1.019514 .0218678 0.90 0.368 .9775427 1.063288

sp75\_703\_c\_4lag | 1.008184 .0075403 1.09 0.276 .9935129 1.023071

sp75\_705\_3\_c\_4lag | 1.215077 .0672698 3.52 0.000 1.090132 1.354342

sp75\_800\_3\_c\_4lag | 1.043378 .0266063 1.67 0.096 .9925126 1.096851

sp75\_803\_c\_4lag | .9969351 .0246674 -0.12 0.901 .9497415 1.046474

sp75\_900\_3\_c\_4lag | 1.027064 .0178268 1.54 0.124 .992712 1.062605

sp75\_903\_c\_4lag | 1.002744 .0111762 0.25 0.806 .981076 1.02489

sp77\_103\_c\_4lag | .8347652 .1395391 -1.08 0.280 .6015584 1.15838

sp77\_1103\_c\_4lag | 1.000186 .0050107 0.04 0.970 .990413 1.010055

sp77\_1403\_c\_4lag | 1.004351 .0401223 0.11 0.913 .9287127 1.08615

sp77\_1433\_c\_4lag | 1.037379 .0436207 0.87 0.383 .955312 1.126496

sp77\_203\_c\_4lag | 1.026112 .0370309 0.71 0.475 .95604 1.10132

sp77\_403\_c\_4lag | 1.09623 .0557616 1.81 0.071 .9922107 1.211154

sp77\_413\_c\_4lag | .9795188 .0315227 -0.64 0.520 .9196436 1.043292

sp77\_503\_c\_4lag | 1.009086 .0435334 0.21 0.834 .9272697 1.098121

sp77\_513\_c\_4lag | .992018 .008984 -0.88 0.376 .9745651 1.009784

sp77\_603\_c\_4lag | 1.088497 .0634228 1.46 0.146 .9710261 1.22018

sp77\_701\_3\_c\_4lag | .9587402 .0699536 -0.58 0.564 .8309862 1.106135

sp77\_703\_c\_4lag | 1.067642 .1192208 0.59 0.558 .8577765 1.328854

sp77\_803\_c\_4lag | .9497121 .0969847 -0.51 0.613 .7774406 1.160157

sp77\_807\_3\_c\_4lag | .9951597 .062525 -0.08 0.938 .8798579 1.125571

sp77\_902\_3\_c\_4lag | .9747062 .0745122 -0.34 0.738 .8390791 1.132256

sp77\_903\_c\_4lag | 1.02963 .048418 0.62 0.535 .938974 1.129038

sp47\_44\_c\_4lag | .9899215 .0174189 -0.58 0.565 .956363 1.024658

sp48\_24\_c\_4lag | .3967847 .0265341 -13.82 0.000 .3480429 .4523526

sp48\_4\_c\_4lag | 1.301981 .1247214 2.75 0.006 1.079108 1.570884

sp75\_1103\_4\_c\_4lag | 1.005128 .0034756 1.48 0.139 .998339 1.011963

sp75\_1104\_c\_4lag | 1.000217 .0082213 0.03 0.979 .9842329 1.016461

sp75\_1106\_4\_c\_4lag | .9937689 .0273699 -0.23 0.820 .9415469 1.048887

sp75\_1107\_14\_c\_4lag | 1.083766 .1215521 0.72 0.473 .8698958 1.350218

sp75\_1400\_4\_c\_4lag | .9913811 .0232209 -0.37 0.712 .9468979 1.037954

sp75\_1403\_4\_c\_4lag | 1.207465 .0642306 3.54 0.000 1.087916 1.340151

sp75\_1404\_c\_4lag | .9272121 .0650647 -1.08 0.281 .8080686 1.063923

sp75\_1434\_c\_4lag | .9629071 .0265863 -1.37 0.171 .9121837 1.016451

sp75\_1914\_c\_4lag | 1.000303 .0013766 0.22 0.826 .9976082 1.003005

sp75\_214\_c\_4lag | .9914237 .008361 -1.02 0.307 .9751712 1.007947

sp75\_324\_c\_4lag | .9787543 .0124374 -1.69 0.091 .9546786 1.003437

sp75\_344\_c\_4lag | 1.01533 .0205822 0.75 0.453 .9757802 1.056482

sp75\_504\_c\_4lag | .9703168 .0261308 -1.12 0.263 .9204296 1.022908

sp75\_514\_c\_4lag | 1.001891 .0038058 0.50 0.619 .9944596 1.009378

sp75\_604\_c\_4lag | 1.006483 .0015206 4.28 0.000 1.003507 1.009468

sp75\_701\_4\_c\_4lag | 1.159587 .0597648 2.87 0.004 1.048172 1.282845

sp75\_703\_4\_c\_4lag | .5989508 .06402 -4.80 0.000 .4857456 .738539

sp75\_704\_c\_4lag | .9176229 .0556818 -1.42 0.157 .8147285 1.033512

sp75\_800\_4\_c\_4lag | 1.011411 .0193494 0.59 0.553 .9741893 1.050055

sp75\_804\_c\_4lag | 1.012541 .0148669 0.85 0.396 .983818 1.042103

sp75\_814\_c\_4lag | .990947 .0245242 -0.37 0.713 .9440277 1.040198

sp75\_834\_c\_4lag | .0115999 .0043193 -11.97 0.000 .0055911 .0240662

sp75\_900\_4\_c\_4lag | .9964111 .0047106 -0.76 0.447 .9872211 1.005687

sp75\_902\_4\_c\_4lag | 1.004441 .0117669 0.38 0.705 .981641 1.027771

sp75\_904\_c\_4lag | .997872 .0026798 -0.79 0.428 .9926335 1.003138

sp77\_104\_c\_4lag | .9621775 .0620011 -0.60 0.550 .8480183 1.091705

sp77\_1104\_c\_4lag | 1.002342 .0018591 1.26 0.207 .9987052 1.005993

sp77\_1434\_c\_4lag | 1.006383 .0311155 0.21 0.837 .9472086 1.069254

sp77\_204\_c\_4lag | .9882528 .00827 -1.41 0.158 .9721761 1.004595

sp77\_314\_c\_4lag | .5272673 .0848325 -3.98 0.000 .3846629 .7227388

sp77\_404\_c\_4lag | .9928192 .0028648 -2.50 0.013 .9872202 .9984499

sp77\_504\_c\_4lag | .9946437 .0102437 -0.52 0.602 .9747677 1.014925

sp77\_514\_c\_4lag | .9935054 .0369842 -0.18 0.861 .923599 1.068703

sp77\_604\_c\_4lag | 1.028226 .0336366 0.85 0.395 .9643685 1.096312

sp77\_701\_4\_c\_4lag | 1.007537 .0329874 0.23 0.819 .9449137 1.074311

sp77\_704\_c\_4lag | .9411781 .1162378 -0.49 0.624 .7388331 1.19894

sp77\_804\_c\_4lag | .9003345 .1751952 -0.54 0.590 .6148504 1.318373

sp77\_904\_c\_4lag | .9983732 .0083859 -0.19 0.846 .9820716 1.014945

sp48\_25\_c\_4lag | .9810804 .0197436 -0.95 0.343 .9431368 1.02055

sp48\_5\_c\_4lag | 1.038279 .0319124 1.22 0.222 .9775781 1.102748

sp75\_1106\_5\_c\_4lag | .9969669 .0127219 -0.24 0.812 .9723416 1.022216

sp75\_1403\_5\_c\_4lag | .9994181 .0021839 -0.27 0.790 .9951468 1.003708

sp75\_1405\_c\_4lag | .9998679 .0042692 -0.03 0.975 .9915353 1.00827

sp75\_1435\_c\_4lag | .9388882 .0452372 -1.31 0.191 .8542826 1.031873

sp75\_155\_c\_4lag | .9582578 .0774667 -0.53 0.598 .8178434 1.12278

sp75\_1725\_c\_4lag | 1.001727 .0009595 1.80 0.072 .9998481 1.003609

sp75\_1915\_c\_4lag | 1.017721 .029799 0.60 0.549 .9609609 1.077835

sp75\_505\_c\_4lag | 1.018891 .047757 0.40 0.690 .9294602 1.116928

sp75\_515\_c\_4lag | .9931664 .0027086 -2.51 0.012 .9878719 .9984893

sp75\_605\_c\_4lag | 1.004918 .0049013 1.01 0.314 .9953579 1.014571

sp75\_705\_c\_4lag | 1.124515 .0537156 2.46 0.014 1.024012 1.234881

sp75\_805\_c\_4lag | 1.029131 .0362133 0.82 0.414 .9605469 1.102613

sp75\_815\_c\_4lag | 1.079929 .0301616 2.75 0.006 1.022402 1.140693

sp75\_825\_c\_4lag | 1.024768 .0402883 0.62 0.534 .9487695 1.106853

sp75\_905\_c\_4lag | 1.025244 .0519324 0.49 0.623 .9283482 1.132254

sp77\_1605\_c\_4lag | .9968156 .0025797 -1.23 0.218 .9917723 1.001885

sp77\_1915\_c\_4lag | .9903796 .0288423 -0.33 0.740 .9354328 1.048554

sp77\_205\_c\_4lag | .9989958 .0017113 -0.59 0.558 .9956474 1.002355

sp77\_305\_c\_4lag | 1.243456 .1580001 1.71 0.086 .969331 1.595102

sp77\_315\_c\_4lag | .5978004 .141846 -2.17 0.030 .3754769 .9517638

sp77\_405\_c\_4lag | 1.007191 .0233505 0.31 0.757 .9624486 1.054012

sp77\_505\_c\_4lag | .9960698 .0058887 -0.67 0.505 .9845949 1.007679

sp77\_515\_c\_4lag | .9705732 .0720075 -0.40 0.687 .8392224 1.122482

sp77\_605\_c\_4lag | .9807834 .106037 -0.18 0.858 .793498 1.212273

sp77\_705\_c\_4lag | 1.043897 .0248345 1.81 0.071 .9963394 1.093724

sp77\_805\_c\_4lag | .9768257 .0509211 -0.45 0.653 .8819514 1.081906

sp48\_26\_c\_4lag | 1.04497 .022628 2.03 0.042 1.001548 1.090275

sp48\_6\_c\_4lag | .9984869 .017399 -0.09 0.931 .9649613 1.033177

sp75\_1106\_6\_c\_4lag | .9455739 .0944902 -0.56 0.575 .7773843 1.150152

sp75\_1106\_c\_4lag | 1.021085 .028837 0.74 0.460 .9661017 1.079198

sp75\_1403\_6\_c\_4lag | .9998378 .0018912 -0.09 0.932 .996138 1.003551

sp75\_1436\_c\_4lag | 1.143382 .1301462 1.18 0.239 .9147507 1.429157

sp75\_156\_c\_4lag | 1.014775 .0854707 0.17 0.862 .8603518 1.196914

sp75\_1712\_6\_c\_4lag | 1.000414 .0088154 0.05 0.963 .9832843 1.017842

sp75\_1726\_c\_4lag | 1.018212 .0261079 0.70 0.482 .9683059 1.07069

sp75\_506\_c\_4lag | .9981506 .0131053 -0.14 0.888 .9727923 1.02417

sp75\_516\_c\_4lag | .9934602 .003988 -1.63 0.102 .9856745 1.001307

sp75\_606\_c\_4lag | .9949676 .0019866 -2.53 0.012 .9910815 .998869

sp75\_706\_c\_4lag | .9777784 .01783 -1.23 0.218 .9434494 1.013356

sp75\_806\_c\_4lag | 1.069732 .0754734 0.96 0.339 .9315792 1.228373

sp75\_816\_c\_4lag | .9968632 .0086596 -0.36 0.718 .9800343 1.013981

sp77\_1106\_c\_4lag | .9829494 .1588755 -0.11 0.915 .7160614 1.349311

sp77\_1606\_c\_4lag | 1.007076 .003612 1.97 0.049 1.000022 1.014181

sp77\_1906\_c\_4lag | .9617563 .0445814 -0.84 0.400 .87823 1.053227

sp77\_1916\_c\_4lag | 1.079436 .0489857 1.68 0.092 .9875713 1.179845

sp77\_206\_c\_4lag | 1.023156 .0115183 2.03 0.042 1.000828 1.045983

sp77\_216\_c\_4lag | 1.013775 .010102 1.37 0.170 .9941678 1.033769

sp77\_506\_c\_4lag | .9922269 .0092936 -0.83 0.405 .9741779 1.01061

sp77\_516\_c\_4lag | .9934816 .0031221 -2.08 0.037 .9873813 .9996196

sp77\_606\_c\_4lag | 1 (omitted)

sp77\_906\_c\_4lag | .4916104 .1083144 -3.22 0.001 .3192122 .7571164

sp48\_27\_c\_4lag | 1.020244 .0239084 0.86 0.392 .9744446 1.068197

sp48\_7\_c\_4lag | 1.018375 .0128243 1.45 0.148 .993548 1.043823

sp75\_1403\_7\_c\_4lag | .9875497 .0090436 -1.37 0.171 .9699828 1.005435

sp75\_1437\_c\_4lag | .9914387 .0681349 -0.13 0.900 .8665 1.134392

sp75\_1727\_c\_4lag | 1.017486 .1748977 0.10 0.920 .7264635 1.425093

sp75\_337\_c\_4lag | 1.005468 .0099812 0.55 0.583 .9860945 1.025223

sp75\_507\_c\_4lag | 1.005678 .012529 0.45 0.649 .9814195 1.030537

sp75\_517\_c\_4lag | .9996889 .0009018 -0.34 0.730 .9979229 1.001458

sp75\_607\_c\_4lag | 1.0013 .0124158 0.10 0.917 .9772587 1.025933

sp75\_807\_c\_4lag | 1.005216 .0023974 2.18 0.029 1.000528 1.009926

sp75\_827\_c\_4lag | 1.093893 .0404641 2.43 0.015 1.017392 1.176147

sp75\_907\_c\_4lag | 1.024296 .0198921 1.24 0.216 .9860408 1.064035

sp77\_1437\_c\_4lag | .9148686 .0301349 -2.70 0.007 .8576713 .9758802

sp77\_207\_c\_4lag | 1.013675 .0076428 1.80 0.072 .9988052 1.028766

sp77\_507\_c\_4lag | .9868373 .0251329 -0.52 0.603 .938787 1.037347

sp77\_807\_c\_4lag | 1.007904 .0425272 0.19 0.852 .9279059 1.094799

sp48\_28\_c\_4lag | .9945619 .0284683 -0.19 0.849 .9403014 1.051953

sp48\_8\_c\_4lag | 1.01713 .0230878 0.75 0.454 .9728702 1.063403

sp75\_1403\_8\_c\_4lag | .9973756 .0019998 -1.31 0.190 .9934638 1.001303

sp75\_1438\_c\_4lag | 2.243317 .3701934 4.90 0.000 1.623397 3.099962

sp75\_1728\_c\_4lag | 1.042424 .1158905 0.37 0.709 .8383261 1.296212

sp75\_208\_c\_4lag | .9985886 .0045548 -0.31 0.757 .9897012 1.007556

sp75\_518\_c\_4lag | 1.001299 .0031907 0.41 0.684 .9950648 1.007572

sp75\_705\_8\_c\_4lag | 1.077832 .0588707 1.37 0.170 .9684088 1.199619

sp75\_808\_c\_4lag | .9780111 .0229667 -0.95 0.344 .9340175 1.024077

sp75\_818\_c\_4lag | 1.012652 .0346243 0.37 0.713 .9470134 1.08284

sp77\_1438\_c\_4lag | .7144349 .1145053 -2.10 0.036 .5218399 .9781109

sp77\_208\_c\_4lag | 1.002065 .0050817 0.41 0.684 .9921542 1.012074

sp77\_408\_c\_4lag | .9647861 .0237917 -1.45 0.146 .9192642 1.012562

sp77\_508\_c\_4lag | .9357715 .0242664 -2.56 0.010 .8893987 .9845623

sp77\_704\_8\_c\_4lag | .9586277 .0543878 -0.74 0.456 .8577426 1.071379

sp77\_808\_c\_4lag | 1.137122 .0870021 1.68 0.093 .9787705 1.321092

sp75\_1403\_9\_c\_4lag | .9905874 .0095983 -0.98 0.329 .9719526 1.00958

sp75\_1729\_c\_4lag | 1.007014 .036891 0.19 0.849 .9372434 1.081978

sp75\_1909\_c\_4lag | 1.002047 .0013757 1.49 0.136 .9993544 1.004747

sp75\_519\_c\_4lag | 1.075126 .0838901 0.93 0.353 .9226599 1.252787

sp75\_809\_c\_4lag | .999278 .0096863 -0.07 0.941 .9804724 1.018444

sp75\_819\_c\_4lag | 1.339599 .184416 2.12 0.034 1.022808 1.754509

sp77\_309\_c\_4lag | .9787204 .1312267 -0.16 0.873 .7525402 1.27288

sp77\_409\_c\_4lag | .9773923 .0508389 -0.44 0.660 .8826606 1.082291

sp77\_509\_c\_4lag | .9836549 .013251 -1.22 0.221 .9580232 1.009972

sp77\_704\_9\_c\_4lag | .8282583 .0912916 -1.71 0.087 .6673372 1.027984

sp77\_809\_c\_4lag | .9669221 .0143356 -2.27 0.023 .9392291 .9954317

sp72\_610\_c\_4lag | .9528828 .0827431 -0.56 0.578 .803759 1.129674

sp72\_620\_c\_4lag | 1.077738 .0401204 2.01 0.044 1.001903 1.159312

sp72\_630\_c\_4lag | 1.002893 .0020782 1.39 0.163 .9988285 1.006975

sp75\_100\_c\_4lag | 1.030131 .0270407 1.13 0.258 .9784729 1.084517

sp75\_1101\_20\_c\_4lag | .970805 .0432382 -0.67 0.506 .8896533 1.059359

sp75\_1400\_c\_4lag | .9974303 .0100427 -0.26 0.798 .9779399 1.017309

sp75\_1403\_10\_c\_4lag | .9989881 .0032299 -0.31 0.754 .9926776 1.005339

sp75\_150\_c\_4lag | .98951 .0542983 -0.19 0.848 .8886104 1.101866

sp75\_160\_c\_4lag | .9678567 .0577522 -0.55 0.584 .8610327 1.087934

sp75\_1712\_10\_c\_4lag | .9476156 .0213352 -2.39 0.017 .9067086 .9903681

sp75\_1720\_c\_4lag | 1.024384 .0107025 2.31 0.021 1.003621 1.045577

sp75\_1730\_c\_4lag | .9848294 .0120838 -1.25 0.213 .9614282 1.0088

sp75\_1910\_c\_4lag | .9983321 .0020618 -0.81 0.419 .9942991 1.002381

sp75\_320\_c\_4lag | .9898767 .0058222 -1.73 0.084 .9785309 1.001354

sp75\_340\_c\_4lag | .9996944 .0029083 -0.11 0.916 .9940104 1.005411

sp75\_520\_c\_4lag | 1.003574 .0070706 0.51 0.613 .9898109 1.017528

sp75\_600\_c\_4lag | 1.017463 .0672544 0.26 0.793 .8938278 1.158198

sp75\_700\_c\_4lag | .987552 .0088774 -1.39 0.163 .970305 1.005106

sp75\_800\_c\_4lag | 1.027316 .0221078 1.25 0.210 .9848864 1.071573

sp75\_810\_c\_4lag | 1.023291 .0103993 2.27 0.023 1.003111 1.043878

sp75\_820\_c\_4lag | .9687205 .0337562 -0.91 0.362 .9047684 1.037193

sp75\_900\_c\_4lag | .9998245 .0068152 -0.03 0.979 .9865557 1.013272

sp77\_1710\_c\_4lag | .9917572 .0070019 -1.17 0.241 .9781282 1.005576

sp77\_200\_c\_4lag | 1.001245 .0029511 0.42 0.673 .9954772 1.007045

sp77\_210\_c\_4lag | .997097 .0204079 -0.14 0.887 .9578899 1.037909

sp77\_400\_c\_4lag | 1.003643 .0026662 1.37 0.171 .9984309 1.008882

sp77\_410\_c\_4lag | 1.005917 .0039756 1.49 0.135 .9981553 1.01374

sp77\_500\_c\_4lag | .9435387 .0384067 -1.43 0.153 .8711874 1.021899

sp77\_510\_c\_4lag | .9875984 .0459208 -0.27 0.788 .9015747 1.08183

sp77\_600\_c\_4lag | 1.177058 .0555928 3.45 0.001 1.072989 1.29122

sp77\_700\_c\_4lag | .9608733 .029674 -1.29 0.196 .9044385 1.020829

sp77\_810\_c\_4lag | .9904597 .0343356 -0.28 0.782 .9253985 1.060095

sp77\_900\_c\_4lag | .8767711 .0467631 -2.47 0.014 .7897449 .9733871

mine\_time | .9938242 .006873 -0.90 0.370 .9804443 1.007387

onsite\_insp\_hours | .9998832 .0000471 -2.48 0.013 .9997908 .9999755

|

state |

1 | 1.264606 .1395301 2.13 0.033 1.01868 1.569901

2 | 2.332079 .1906145 10.36 0.000 1.98687 2.737266

3 | .8287266 .1523717 -1.02 0.307 .5779727 1.18827

4 | 1.076921 .0871839 0.92 0.360 .918911 1.262102

5 | .8825776 .1427714 -0.77 0.440 .6427723 1.21185

6 | .9574425 .0531447 -0.78 0.433 .8587467 1.067481

7 | 1.007822 .2910044 0.03 0.978 .5722723 1.774862

8 | .9969907 .1328561 -0.02 0.982 .7678255 1.294553

9 | .9478622 .0747741 -0.68 0.497 .8120755 1.106354

10 | 1.116418 .1384937 0.89 0.375 .8754551 1.423705

11 | .7719605 .2161584 -0.92 0.355 .445911 1.336417

12 | 1.0196 .088637 0.22 0.823 .8598691 1.209003

13 | 1.445284 .2181063 2.44 0.015 1.075225 1.942706

14 | .6263107 .0850548 -3.45 0.001 .479948 .8173075

15 | .7143453 .0460151 -5.22 0.000 .6296183 .8104738

17 | 1.407788 .2093592 2.30 0.021 1.051843 1.884186

|

time |

2000 | 1.140112 .072124 2.07 0.038 1.007163 1.290609

2002 | .9914162 .0604809 -0.14 0.888 .8796883 1.117334

2003 | .8581619 .0588621 -2.23 0.026 .7502129 .9816437

2004 | .9064519 .0596984 -1.49 0.136 .7966822 1.031346

2005 | .7969761 .0526512 -3.44 0.001 .7001833 .9071495

2006 | .7273187 .0571912 -4.05 0.000 .6234366 .8485106

2007 | .6937396 .0563754 -4.50 0.000 .5915961 .813519

2008 | .6486675 .0508906 -5.52 0.000 .5562139 .7564886

2009 | .5792089 .0484975 -6.52 0.000 .4915453 .6825066

2010 | .548974 .0465845 -7.07 0.000 .4648588 .6483097

2011 | .5571654 .0466408 -6.99 0.000 .4728565 .6565064

2012 | .5678045 .0490843 -6.55 0.000 .4793095 .6726384

2013 | .5140788 .0482297 -7.09 0.000 .4277321 .6178564

2014 | .4851707 .0486922 -7.21 0.000 .3985356 .5906389

2015 | .4805549 .0532288 -6.62 0.000 .386776 .5970718

|

\_cons | .000016 1.03e-06 -172.16 0.000 .0000141 .0000182

ln(hours) | 1 (exposure)

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

**. estat gof**

Deviance goodness-of-fit = 7582.505

Prob > chi2(5915) = 0.0000

Pearson goodness-of-fit = 8400.129

Prob > chi2(5915) = 0.0000

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

note: sp77\_801\_1\_c\_4lag omitted because of collinearity

note: sp77\_606\_c\_4lag omitted because of collinearity

Iteration 0: log pseudolikelihood = -9166.6971

Iteration 1: log pseudolikelihood = -8999.6349

Iteration 2: log pseudolikelihood = -8998.1757

Iteration 3: log pseudolikelihood = -8998.1235

Iteration 4: log pseudolikelihood = -8998.1153

Iteration 5: log pseudolikelihood = -8998.1145

Iteration 6: log pseudolikelihood = -8998.1143

Iteration 7: log pseudolikelihood = -8998.1142

Iteration 8: log pseudolikelihood = -8998.1142

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,914

Scale parameter = 1

Deviance = 3682.466087 (1/df) Deviance = .6226693

Pearson = 3955.627275 (1/df) Pearson = .6688582

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

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

AIC = 2.986443

Log pseudolikelihood = -8998.114218 BIC = -48010.72

(Std. Err. adjusted for 1,238 clusters in mineid)

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| Robust

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

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

sp47\_41\_c\_4lag | .983457 .0146565 -1.12 0.263 .9551463 1.012607

sp48\_11\_c\_4lag | 1.023764 .0196057 1.23 0.220 .9860495 1.06292

sp71\_701\_c\_4lag | 1.334681 .2068762 1.86 0.063 .9850102 1.808482

sp75\_1001\_1\_c\_4lag | .9816067 .0438217 -0.42 0.678 .899368 1.071365

sp75\_1001\_c\_4lag | .8542677 .0798162 -1.69 0.092 .7113188 1.025944

sp75\_1003\_1\_c\_4lag | .9572385 .0993998 -0.42 0.674 .7809644 1.1733

sp75\_1400\_1\_c\_4lag | .9700845 .067325 -0.44 0.662 .846711 1.111435

sp75\_1401\_1\_c\_4lag | .9556928 .1082062 -0.40 0.689 .765496 1.193146

sp75\_1401\_c\_4lag | .9520798 .036414 -1.28 0.199 .883319 1.026193

sp75\_1403\_11\_c\_4lag | .9798497 .1066797 -0.19 0.852 .7915642 1.212922

sp75\_1404\_1\_c\_4lag | .8633118 .0986178 -1.29 0.198 .6901338 1.079946

sp75\_1405\_1\_c\_4lag | 1.178481 .106818 1.81 0.070 .986664 1.407589

sp75\_1431\_c\_4lag | .9043358 .0940533 -0.97 0.334 .7375688 1.108809

sp75\_151\_c\_4lag | 1.454895 .169635 3.22 0.001 1.15767 1.82843

sp75\_1721\_c\_4lag | .9506035 .2399053 -0.20 0.841 .5796694 1.558901

sp75\_1731\_c\_4lag | .9991654 .0008455 -0.99 0.324 .9975096 1.000824

sp75\_1911\_c\_4lag | .999609 .0035185 -0.11 0.912 .9927366 1.006529

sp75\_211\_c\_4lag | .9979869 .0049753 -0.40 0.686 .988283 1.007786

sp75\_341\_c\_4lag | 1.030804 .0877893 0.36 0.722 .8723337 1.218062

sp75\_506\_1\_c\_4lag | 1.079722 .0236441 3.50 0.000 1.034361 1.127072

sp75\_510\_1\_c\_4lag | 1.088283 .1954598 0.47 0.638 .7653551 1.547466

sp75\_511\_1\_c\_4lag | .7208869 .1581681 -1.49 0.136 .4689289 1.108223

sp75\_511\_c\_4lag | .9997797 .0136483 -0.02 0.987 .9733842 1.026891

sp75\_512\_1\_c\_4lag | 1.097636 .0927413 1.10 0.270 .9301196 1.295323

sp75\_513\_1\_c\_4lag | 1.041096 .0449311 0.93 0.351 .9566542 1.132991

sp75\_516\_1\_c\_4lag | 1.00125 .0553494 0.02 0.982 .8984379 1.115828

sp75\_517\_1\_c\_4lag | .9957263 .0547634 -0.08 0.938 .8939746 1.109059

sp75\_518\_1\_c\_4lag | 1.002581 .0060009 0.43 0.667 .9908881 1.014412

sp75\_523\_1\_c\_4lag | .9930437 .0098524 -0.70 0.482 .9739199 1.012543

sp75\_600\_1\_c\_4lag | 1.005395 .0741531 0.07 0.942 .8700745 1.161763

sp75\_601\_1\_c\_4lag | .9985454 .0041924 -0.35 0.729 .9903622 1.006796

sp75\_601\_c\_4lag | 1.00714 .00511 1.40 0.161 .997174 1.017205

sp75\_700\_1\_c\_4lag | .8864268 .0377731 -2.83 0.005 .8154002 .9636403

sp75\_701\_1\_c\_4lag | .9991587 .0166384 -0.05 0.960 .9670744 1.032307

sp75\_701\_c\_4lag | 1.003829 .0036406 1.05 0.292 .9967186 1.01099

sp75\_702\_1\_c\_4lag | 1.026129 .0412943 0.64 0.522 .9483036 1.110342

sp75\_703\_1\_c\_4lag | .9600793 .1047891 -0.37 0.709 .7751783 1.189084

sp75\_705\_1\_c\_4lag | .9871323 .0392828 -0.33 0.745 .9130655 1.067207

sp75\_801\_c\_4lag | .9374637 .0785787 -0.77 0.441 .795438 1.104848

sp75\_811\_c\_4lag | 1.021232 .0127151 1.69 0.092 .9966129 1.04646

sp75\_821\_c\_4lag | 1.04451 .0182291 2.50 0.013 1.009386 1.080856

sp75\_831\_c\_4lag | .8680617 .0503778 -2.44 0.015 .7747315 .9726351

sp75\_901\_c\_4lag | .9769623 .027869 -0.82 0.414 .923839 1.03314

sp75\_902\_1\_c\_4lag | 1.171519 .0734189 2.53 0.012 1.036107 1.324628

sp77\_1111\_c\_4lag | .9602139 .0590783 -0.66 0.509 .8511319 1.083276

sp77\_401\_c\_4lag | .9831539 .0223445 -0.75 0.455 .9403206 1.027938

sp77\_403\_1\_c\_4lag | 1.014081 .0375569 0.38 0.706 .9430788 1.090428

sp77\_411\_c\_4lag | .8984497 .1135561 -0.85 0.397 .7013089 1.151007

sp77\_501\_c\_4lag | .9922647 .0346669 -0.22 0.824 .9265929 1.062591

sp77\_502\_1\_c\_4lag | 1.170463 .193972 0.95 0.342 .8458523 1.619649

sp77\_503\_1\_c\_4lag | 1.061883 .1046489 0.61 0.542 .875368 1.28814

sp77\_506\_1\_c\_4lag | 1.011022 .0126004 0.88 0.379 .9866245 1.036022

sp77\_508\_1\_c\_4lag | 1.036895 .0438718 0.86 0.392 .9543761 1.126548

sp77\_511\_c\_4lag | .9092411 .0431043 -2.01 0.045 .8285643 .9977733

sp77\_601\_c\_4lag | .9127984 .0543562 -1.53 0.125 .8122443 1.025801

sp77\_606\_1\_c\_4lag | .9236559 .098034 -0.75 0.454 .7501814 1.137245

sp77\_700\_1\_c\_4lag | 1.046836 .078177 0.61 0.540 .9042978 1.211841

sp77\_701\_1\_c\_4lag | .9731312 .0462989 -0.57 0.567 .8864895 1.068241

sp77\_701\_c\_4lag | 1.006769 .0101777 0.67 0.505 .9870172 1.026916

sp77\_704\_1\_c\_4lag | 1.100793 .069253 1.53 0.127 .9730941 1.245249

sp77\_800\_1\_c\_4lag | .9557575 .0542519 -0.80 0.425 .8551271 1.06823

sp77\_801\_1\_c\_4lag | 1 (omitted)

sp77\_801\_c\_4lag | .6558653 .1372222 -2.02 0.044 .4352348 .9883385

sp77\_807\_1\_c\_4lag | 1.092332 .1004152 0.96 0.337 .9122339 1.307987

sp77\_900\_1\_c\_4lag | 1.082655 .0828708 1.04 0.299 .9318281 1.257896

sp77\_901\_1\_c\_4lag | .8416698 .1144085 -1.27 0.205 .6448187 1.098616

sp77\_901\_c\_4lag | 1.05278 .0552734 0.98 0.327 .9498341 1.166884

sp47\_42\_c\_4lag | .8908628 .0361233 -2.85 0.004 .8228028 .9645525

sp75\_1100\_2\_c\_4lag | 1.001719 .0020159 0.85 0.393 .9977758 1.005678

sp75\_1102\_c\_4lag | .9911571 .0165592 -0.53 0.595 .9592273 1.02415

sp75\_1106\_2\_c\_4lag | .9979977 .0109266 -0.18 0.855 .9768101 1.019645

sp75\_1400\_2\_c\_4lag | 1.010128 .044829 0.23 0.820 .9259774 1.101926

sp75\_1402\_2\_c\_4lag | .8573005 .1422078 -0.93 0.353 .6193511 1.186668

sp75\_1432\_c\_4lag | .9772356 .0475911 -0.47 0.636 .8882721 1.075109

sp75\_1600\_2\_c\_4lag | .9950292 .0066483 -0.75 0.456 .9820838 1.008145

sp75\_1912\_c\_4lag | 1.016031 .0272113 0.59 0.553 .9640733 1.070789

sp75\_202\_c\_4lag | 1.000426 .0006728 0.63 0.527 .9991079 1.001745

sp75\_212\_c\_4lag | .9781843 .0095757 -2.25 0.024 .9595952 .9971334

sp75\_312\_c\_4lag | 1.01874 .009102 2.08 0.038 1.001056 1.036737

sp75\_342\_c\_4lag | .9999255 .0018425 -0.04 0.968 .9963209 1.003543

sp75\_352\_c\_4lag | .9754438 .0123869 -1.96 0.050 .9514656 1.000026

sp75\_382\_c\_4lag | 1.025986 .0157047 1.68 0.094 .9956623 1.057233

sp75\_512\_2\_c\_4lag | 1.00504 .0048348 1.04 0.296 .9956082 1.01456

sp75\_512\_c\_4lag | 1.000925 .001257 0.74 0.462 .9984641 1.003392

sp75\_516\_2\_c\_4lag | 1.004835 .0078752 0.62 0.538 .9895176 1.020389

sp75\_523\_2\_c\_4lag | 1.006888 .0081535 0.85 0.397 .9910331 1.022996

sp75\_601\_2\_c\_4lag | .9405836 .0446916 -1.29 0.197 .8569446 1.032386

sp75\_602\_c\_4lag | 1.005167 .0125608 0.41 0.680 .9808477 1.03009

sp75\_701\_2\_c\_4lag | .9885138 .0187784 -0.61 0.543 .9523856 1.026012

sp75\_702\_c\_4lag | .8967235 .0824452 -1.19 0.236 .7488567 1.073788

sp75\_703\_2\_c\_4lag | .9279858 .0487297 -1.42 0.155 .8372279 1.028582

sp75\_705\_2\_c\_4lag | 1.049674 .0577686 0.88 0.378 .9423421 1.16923

sp75\_800\_2\_c\_4lag | .893191 .0636352 -1.59 0.113 .7767846 1.027042

sp75\_802\_c\_4lag | .9600559 .0389012 -1.01 0.314 .88676 1.03941

sp75\_803\_2\_c\_4lag | 1.081215 .1116945 0.76 0.450 .8830377 1.32387

sp75\_812\_c\_4lag | .9841482 .0607943 -0.26 0.796 .8719243 1.110816

sp75\_832\_c\_4lag | .9146811 .1415878 -0.58 0.565 .6753179 1.238886

sp75\_900\_2\_c\_4lag | .9140511 .0706928 -1.16 0.245 .785486 1.063659

sp75\_902\_2\_c\_4lag | 1.026826 .0183668 1.48 0.139 .9914512 1.063463

sp75\_902\_c\_4lag | 1.007259 .0068938 1.06 0.291 .9938378 1.020862

sp77\_1112\_c\_4lag | 1.002611 .0297397 0.09 0.930 .9459847 1.062628

sp77\_1432\_c\_4lag | .9747054 .0643322 -0.39 0.698 .8564315 1.109313

sp77\_1802\_c\_4lag | 1.131424 .1135379 1.23 0.219 .9294106 1.377346

sp77\_202\_c\_4lag | .9869441 .0043578 -2.98 0.003 .9784399 .9955222

sp77\_402\_c\_4lag | 1.009038 .0106402 0.85 0.394 .9883976 1.03011

sp77\_403\_2\_c\_4lag | 1.401592 .2845078 1.66 0.096 .9415362 2.086442

sp77\_412\_c\_4lag | 1.032424 .0242856 1.36 0.175 .9859055 1.081137

sp77\_502\_2\_c\_4lag | .9807862 .0150066 -1.27 0.205 .9518105 1.010644

sp77\_502\_c\_4lag | .9987589 .0027719 -0.45 0.655 .9933408 1.004207

sp77\_512\_c\_4lag | .9926077 .0070417 -1.05 0.296 .9789018 1.006505

sp77\_602\_c\_4lag | 1.114083 .0675162 1.78 0.075 .9893108 1.254592

sp77\_701\_2\_c\_4lag | .9658701 .0410566 -0.82 0.414 .8886614 1.049787

sp77\_702\_c\_4lag | 1.062923 .1522127 0.43 0.670 .8028016 1.407329

sp77\_800\_2\_c\_4lag | 1.028175 .0368818 0.77 0.439 .9583703 1.103063

sp77\_802\_c\_4lag | 1.005506 .1302235 0.04 0.966 .7800904 1.296057

sp77\_807\_2\_c\_4lag | .9926895 .0627683 -0.12 0.908 .8769836 1.123661

sp77\_900\_2\_c\_4lag | 1.043939 .0321531 1.40 0.163 .9827844 1.108899

sp77\_902\_2\_c\_4lag | .9461916 .1172542 -0.45 0.655 .7421577 1.206318

sp77\_902\_c\_4lag | 1.02291 .0512338 0.45 0.651 .927265 1.12842

sp47\_43\_c\_4lag | 1.221679 .1355434 1.80 0.071 .9829188 1.518437

sp72\_503\_c\_4lag | .9855053 .0142922 -1.01 0.314 .9578874 1.013919

sp75\_1106\_3\_c\_4lag | 1.00637 .0042802 1.49 0.135 .9980163 1.014794

sp75\_1400\_3\_c\_4lag | 1.015479 .0155379 1.00 0.315 .9854773 1.046394

sp75\_1403\_3\_c\_4lag | .9434555 .0842591 -0.65 0.515 .7919567 1.123936

sp75\_1433\_c\_4lag | 1.013676 .0241363 0.57 0.568 .9674569 1.062104

sp75\_153\_c\_4lag | .9505077 .0510409 -0.95 0.345 .8555539 1.056

sp75\_1903\_c\_4lag | 1.00031 .0084824 0.04 0.971 .9838227 1.017075

sp75\_1913\_c\_4lag | 1.005094 .0137554 0.37 0.710 .9784921 1.032419

sp75\_503\_c\_4lag | .9995302 .000948 -0.50 0.620 .997674 1.00139

sp75\_513\_c\_4lag | .9887321 .0233348 -0.48 0.631 .9440385 1.035542

sp75\_523\_c\_4lag | .9872079 .0083069 -1.53 0.126 .9710603 1.003624

sp75\_601\_3\_c\_4lag | .958899 .0663625 -0.61 0.544 .8372666 1.098201

sp75\_603\_c\_4lag | 1.000692 .0257827 0.03 0.979 .9514135 1.052523

sp75\_701\_3\_c\_4lag | 1.000975 .0182941 0.05 0.957 .9657539 1.037481

sp75\_703\_3\_c\_4lag | 1.006787 .0237102 0.29 0.774 .961372 1.054347

sp75\_703\_c\_4lag | 1.015559 .0096998 1.62 0.106 .9967246 1.034749

sp75\_705\_3\_c\_4lag | 1.131832 .0792736 1.77 0.077 .9866513 1.298375

sp75\_800\_3\_c\_4lag | 1.04753 .0348594 1.40 0.163 .9813868 1.11813

sp75\_803\_c\_4lag | 1.024861 .0283554 0.89 0.375 .9707656 1.081971

sp75\_900\_3\_c\_4lag | 1.029883 .0251512 1.21 0.228 .9817487 1.080377

sp75\_903\_c\_4lag | 1.01832 .0126664 1.46 0.144 .9937944 1.043451

sp77\_103\_c\_4lag | .9907496 .0602586 -0.15 0.879 .8794128 1.116182

sp77\_1103\_c\_4lag | 1.000364 .0061524 0.06 0.953 .9883777 1.012495

sp77\_1403\_c\_4lag | .9882842 .0394768 -0.30 0.768 .9138623 1.068767

sp77\_1433\_c\_4lag | 1.024912 .0481887 0.52 0.601 .934685 1.123849

sp77\_203\_c\_4lag | 1.03814 .046729 0.83 0.406 .9504767 1.133889

sp77\_403\_c\_4lag | 1.111362 .0764049 1.54 0.125 .9712617 1.27167

sp77\_413\_c\_4lag | .9749659 .0553716 -0.45 0.655 .8722618 1.089763

sp77\_503\_c\_4lag | .9779176 .0476209 -0.46 0.647 .888898 1.075852

sp77\_513\_c\_4lag | .9887602 .0105302 -1.06 0.289 .9683352 1.009616

sp77\_603\_c\_4lag | 1.148056 .0675063 2.35 0.019 1.023086 1.288291

sp77\_701\_3\_c\_4lag | 1.046997 .1139244 0.42 0.673 .845913 1.295881

sp77\_703\_c\_4lag | 1.204927 .2715583 0.83 0.408 .7746807 1.874126

sp77\_803\_c\_4lag | 1.053913 .1451066 0.38 0.703 .8046518 1.380388

sp77\_807\_3\_c\_4lag | .9684663 .0608668 -0.51 0.610 .8562245 1.095422

sp77\_902\_3\_c\_4lag | 1.007586 .0948278 0.08 0.936 .8378614 1.211691

sp77\_903\_c\_4lag | .9804386 .0496072 -0.39 0.696 .8878757 1.082651

sp47\_44\_c\_4lag | 1.00396 .0204922 0.19 0.846 .9645886 1.044938

sp48\_24\_c\_4lag | .4148369 .0277089 -13.17 0.000 .3639332 .4728606

sp48\_4\_c\_4lag | 1.289518 .1573774 2.08 0.037 1.015182 1.63799

sp75\_1103\_4\_c\_4lag | 1.004146 .00385 1.08 0.281 .9966285 1.01172

sp75\_1104\_c\_4lag | 1.005393 .0094458 0.57 0.567 .9870492 1.024078

sp75\_1106\_4\_c\_4lag | .9994304 .0344565 -0.02 0.987 .9341281 1.069298

sp75\_1107\_14\_c\_4lag | 1.024574 .1529741 0.16 0.871 .7646356 1.372878

sp75\_1400\_4\_c\_4lag | .9757537 .0287686 -0.83 0.405 .9209664 1.0338

sp75\_1403\_4\_c\_4lag | 1.241468 .1337598 2.01 0.045 1.005135 1.53337

sp75\_1404\_c\_4lag | .9543797 .0957762 -0.47 0.642 .7839699 1.161831

sp75\_1434\_c\_4lag | .9739779 .0304857 -0.84 0.400 .9160229 1.0356

sp75\_1914\_c\_4lag | .9987944 .0017682 -0.68 0.496 .9953347 1.002266

sp75\_214\_c\_4lag | .9978519 .0091331 -0.23 0.814 .9801111 1.015914

sp75\_324\_c\_4lag | .9619331 .0154746 -2.41 0.016 .9320766 .9927459

sp75\_344\_c\_4lag | .9912037 .0255866 -0.34 0.732 .9423023 1.042643

sp75\_504\_c\_4lag | .9580855 .0235694 -1.74 0.082 .9129864 1.005412

sp75\_514\_c\_4lag | 1.003616 .0048356 0.75 0.454 .9941828 1.013138

sp75\_604\_c\_4lag | 1.006483 .0017575 3.70 0.000 1.003045 1.009934

sp75\_701\_4\_c\_4lag | 1.141169 .0744869 2.02 0.043 1.00413 1.296911

sp75\_703\_4\_c\_4lag | .5604056 .0635203 -5.11 0.000 .4487675 .6998155

sp75\_704\_c\_4lag | .9939954 .0474955 -0.13 0.900 .9051319 1.091583

sp75\_800\_4\_c\_4lag | 1.005348 .0239952 0.22 0.823 .9594012 1.053495

sp75\_804\_c\_4lag | 1.007314 .0205625 0.36 0.721 .9678082 1.048433

sp75\_814\_c\_4lag | .975034 .0329938 -0.75 0.455 .9124652 1.041893

sp75\_834\_c\_4lag | .0145482 .0053618 -11.48 0.000 .0070648 .0299585

sp75\_900\_4\_c\_4lag | 1.002095 .007872 0.27 0.790 .9867843 1.017643

sp75\_902\_4\_c\_4lag | 1.005355 .0133983 0.40 0.689 .9794351 1.031961

sp75\_904\_c\_4lag | 1.000396 .0031452 0.13 0.900 .9942501 1.006579

sp77\_104\_c\_4lag | .9884338 .0723922 -0.16 0.874 .8562611 1.141009

sp77\_1104\_c\_4lag | 1.000512 .0022876 0.22 0.823 .9960385 1.005006

sp77\_1434\_c\_4lag | 1.049399 .0551415 0.92 0.359 .9467027 1.163236

sp77\_204\_c\_4lag | .9873407 .0104933 -1.20 0.231 .966987 1.008123

sp77\_314\_c\_4lag | .5526639 .0955677 -3.43 0.001 .3937945 .7756262

sp77\_404\_c\_4lag | .9971173 .0028233 -1.02 0.308 .991599 1.002666

sp77\_504\_c\_4lag | .991873 .0120466 -0.67 0.502 .9685409 1.015767

sp77\_514\_c\_4lag | .9112359 .0425438 -1.99 0.046 .831553 .9985544

sp77\_604\_c\_4lag | 1.041913 .0382748 1.12 0.264 .9695324 1.119696

sp77\_701\_4\_c\_4lag | 1.009551 .0391304 0.25 0.806 .9356972 1.089233

sp77\_704\_c\_4lag | .9547997 .1303528 -0.34 0.735 .7306393 1.247733

sp77\_804\_c\_4lag | .8924718 .2292059 -0.44 0.658 .5394953 1.476391

sp77\_904\_c\_4lag | .996542 .0103459 -0.33 0.739 .9764694 1.017027

sp48\_25\_c\_4lag | .9808695 .0239782 -0.79 0.429 .9349811 1.02901

sp48\_5\_c\_4lag | 1.032228 .0356935 0.92 0.359 .9645879 1.104611

sp75\_1106\_5\_c\_4lag | .980653 .0140038 -1.37 0.171 .9535866 1.008488

sp75\_1403\_5\_c\_4lag | .9995331 .002642 -0.18 0.860 .9943683 1.004725

sp75\_1405\_c\_4lag | .9978708 .005099 -0.42 0.677 .9879268 1.007915

sp75\_1435\_c\_4lag | .9300263 .0531666 -1.27 0.204 .8314474 1.040293

sp75\_155\_c\_4lag | .9757963 .099537 -0.24 0.810 .798972 1.191755

sp75\_1725\_c\_4lag | 1.001308 .0012321 1.06 0.288 .9988958 1.003725

sp75\_1915\_c\_4lag | 1.037872 .0319675 1.21 0.227 .9770707 1.102457

sp75\_505\_c\_4lag | 1.021126 .0426017 0.50 0.616 .940951 1.108133

sp75\_515\_c\_4lag | .990901 .0029402 -3.08 0.002 .9851551 .9966805

sp75\_605\_c\_4lag | 1.004267 .0062645 0.68 0.495 .9920634 1.01662

sp75\_705\_c\_4lag | 1.153285 .0650487 2.53 0.011 1.032586 1.288092

sp75\_805\_c\_4lag | 1.026235 .0507466 0.52 0.600 .9314413 1.130676

sp75\_815\_c\_4lag | 1.101922 .0356051 3.00 0.003 1.034301 1.173964

sp75\_825\_c\_4lag | .9965314 .0487408 -0.07 0.943 .9054373 1.09679

sp75\_905\_c\_4lag | .9821829 .0492446 -0.36 0.720 .890256 1.083602

sp77\_1605\_c\_4lag | .9973468 .0029858 -0.89 0.375 .9915118 1.003216

sp77\_1915\_c\_4lag | .9592143 .0298995 -1.34 0.182 .9023665 1.019643

sp77\_205\_c\_4lag | 1.0008 .0019323 0.41 0.679 .9970203 1.004595

sp77\_305\_c\_4lag | 1.273287 .2165435 1.42 0.155 .9123584 1.776999

sp77\_315\_c\_4lag | .7332576 .1914464 -1.19 0.235 .4395579 1.223199

sp77\_405\_c\_4lag | 1.029898 .0296623 1.02 0.306 .9733719 1.089708

sp77\_505\_c\_4lag | .9995333 .0071223 -0.07 0.948 .985671 1.013591

sp77\_515\_c\_4lag | .9687079 .1210434 -0.25 0.799 .7582846 1.237523

sp77\_605\_c\_4lag | .9184105 .1141073 -0.69 0.493 .7199127 1.171639

sp77\_705\_c\_4lag | 1.046941 .0243441 1.97 0.049 1.000298 1.095758

sp77\_805\_c\_4lag | .9438634 .0595695 -0.92 0.360 .8340417 1.068146

sp48\_26\_c\_4lag | 1.044937 .0229082 2.01 0.045 1.000989 1.090815

sp48\_6\_c\_4lag | .9903478 .0194325 -0.49 0.621 .9529838 1.029177

sp75\_1106\_6\_c\_4lag | .928714 .1182834 -0.58 0.561 .7235537 1.192047

sp75\_1106\_c\_4lag | 1.072471 .0413884 1.81 0.070 .9943431 1.156737

sp75\_1403\_6\_c\_4lag | .9982439 .0024858 -0.71 0.480 .9933837 1.003128

sp75\_1436\_c\_4lag | 1.180121 .1446062 1.35 0.177 .9281634 1.500474

sp75\_156\_c\_4lag | .9868562 .0875058 -0.15 0.881 .8294243 1.17417

sp75\_1712\_6\_c\_4lag | .9993918 .0118448 -0.05 0.959 .976444 1.022879

sp75\_1726\_c\_4lag | 1.049581 .0357337 1.42 0.155 .98183 1.122008

sp75\_506\_c\_4lag | .9928901 .0144993 -0.49 0.625 .9648748 1.021719

sp75\_516\_c\_4lag | .9915108 .0043607 -1.94 0.053 .9830007 1.000095

sp75\_606\_c\_4lag | .9954646 .0025539 -1.77 0.076 .9904716 1.000483

sp75\_706\_c\_4lag | .9678035 .0214959 -1.47 0.141 .9265761 1.010865

sp75\_806\_c\_4lag | .9961769 .1181998 -0.03 0.974 .7894752 1.256998

sp75\_816\_c\_4lag | 1.001189 .010233 0.12 0.907 .9813326 1.021448

sp77\_1106\_c\_4lag | 1.092249 .272379 0.35 0.723 .6699678 1.780695

sp77\_1606\_c\_4lag | 1.00704 .0042467 1.66 0.096 .998751 1.015398

sp77\_1906\_c\_4lag | .9726162 .0554677 -0.49 0.626 .8697572 1.08764

sp77\_1916\_c\_4lag | 1.053659 .0779443 0.71 0.480 .9114491 1.218057

sp77\_206\_c\_4lag | 1.010891 .0139446 0.79 0.432 .9839259 1.038594

sp77\_216\_c\_4lag | 1.014853 .0136026 1.10 0.271 .9885396 1.041867

sp77\_506\_c\_4lag | .991366 .008151 -1.05 0.292 .9755182 1.007471

sp77\_516\_c\_4lag | .9935194 .0036494 -1.77 0.077 .9863923 1.000698

sp77\_606\_c\_4lag | 1 (omitted)

sp77\_906\_c\_4lag | .4678464 .1823701 -1.95 0.051 .2179207 1.004403

sp48\_27\_c\_4lag | 1.035732 .0251122 1.45 0.148 .9876639 1.086139

sp48\_7\_c\_4lag | 1.010612 .0179002 0.60 0.551 .9761303 1.046312

sp75\_1403\_7\_c\_4lag | .9855067 .0118706 -1.21 0.225 .9625133 1.009049

sp75\_1437\_c\_4lag | .956245 .0561506 -0.76 0.446 .8522886 1.072881

sp75\_1727\_c\_4lag | .996769 .2078633 -0.02 0.988 .6623498 1.500036

sp75\_337\_c\_4lag | 1.001026 .0113132 0.09 0.928 .9790962 1.023447

sp75\_507\_c\_4lag | 1.008284 .0150145 0.55 0.580 .9792814 1.038146

sp75\_517\_c\_4lag | .9992089 .0011003 -0.72 0.472 .9970547 1.001368

sp75\_607\_c\_4lag | 1.005725 .0131303 0.44 0.662 .9803169 1.031792

sp75\_807\_c\_4lag | 1.007063 .0029418 2.41 0.016 1.001313 1.012845

sp75\_827\_c\_4lag | 1.068522 .0688853 1.03 0.304 .9416909 1.212435

sp75\_907\_c\_4lag | 1.024445 .0220025 1.12 0.261 .9822157 1.068489

sp77\_1437\_c\_4lag | .9173543 .040557 -1.95 0.051 .8412108 1.00039

sp77\_207\_c\_4lag | 1.014237 .0096235 1.49 0.136 .9955501 1.033276

sp77\_507\_c\_4lag | .9789997 .0296537 -0.70 0.483 .9225711 1.03888

sp77\_807\_c\_4lag | .974936 .0431709 -0.57 0.566 .8938904 1.06333

sp48\_28\_c\_4lag | .9956892 .0295666 -0.15 0.884 .9393938 1.055358

sp48\_8\_c\_4lag | 1.02249 .0301828 0.75 0.451 .9650119 1.083392

sp75\_1403\_8\_c\_4lag | .9962433 .0022306 -1.68 0.093 .9918809 1.000625

sp75\_1438\_c\_4lag | 2.123687 .3864021 4.14 0.000 1.486673 3.03365

sp75\_1728\_c\_4lag | 1.154245 .1033093 1.60 0.109 .9685286 1.375574

sp75\_208\_c\_4lag | .996937 .0053992 -0.57 0.571 .9864106 1.007576

sp75\_518\_c\_4lag | 1.002693 .0042813 0.63 0.529 .9943367 1.011119

sp75\_705\_8\_c\_4lag | 1.064598 .0670581 0.99 0.320 .9409556 1.204487

sp75\_808\_c\_4lag | 1.014998 .0292729 0.52 0.606 .9592152 1.074024

sp75\_818\_c\_4lag | .980487 .0507082 -0.38 0.703 .8859718 1.085085

sp77\_1438\_c\_4lag | .7127351 .1123695 -2.15 0.032 .5232727 .9707966

sp77\_208\_c\_4lag | 1.005203 .0054115 0.96 0.335 .9946524 1.015865

sp77\_408\_c\_4lag | .9550571 .0311729 -1.41 0.159 .8958726 1.018151

sp77\_508\_c\_4lag | .9641825 .0334605 -1.05 0.293 .9007818 1.032046

sp77\_704\_8\_c\_4lag | 1.031724 .0744419 0.43 0.665 .8956677 1.188448

sp77\_808\_c\_4lag | 1.132725 .0791262 1.78 0.074 .9877885 1.298928

sp75\_1403\_9\_c\_4lag | .9949478 .0114812 -0.44 0.661 .9726977 1.017707

sp75\_1729\_c\_4lag | 1.026895 .0441602 0.62 0.537 .9438893 1.117199

sp75\_1909\_c\_4lag | 1.001478 .0017063 0.87 0.386 .9981392 1.004828

sp75\_519\_c\_4lag | 1.141559 .113646 1.33 0.184 .9392005 1.387517

sp75\_809\_c\_4lag | 1.001056 .0110543 0.10 0.924 .9796223 1.022958

sp75\_819\_c\_4lag | 1.377476 .2115868 2.08 0.037 1.019378 1.861369

sp77\_309\_c\_4lag | .9795741 .1257601 -0.16 0.872 .7616545 1.259843

sp77\_409\_c\_4lag | .9298162 .0589976 -1.15 0.251 .8210842 1.052947

sp77\_509\_c\_4lag | .9793065 .0161896 -1.26 0.206 .948084 1.011557

sp77\_704\_9\_c\_4lag | .8915783 .1468974 -0.70 0.486 .6455273 1.231415

sp77\_809\_c\_4lag | .9486172 .0180141 -2.78 0.005 .9139592 .9845894

sp72\_610\_c\_4lag | .9631637 .0939415 -0.38 0.700 .7955707 1.166061

sp72\_620\_c\_4lag | 1.030322 .0462015 0.67 0.505 .9436337 1.124973

sp72\_630\_c\_4lag | 1.004622 .0025877 1.79 0.073 .9995631 1.009707

sp75\_100\_c\_4lag | 1.027368 .0340082 0.82 0.415 .9628293 1.096233

sp75\_1101\_20\_c\_4lag | 1.002951 .0567072 0.05 0.958 .8977444 1.120488

sp75\_1400\_c\_4lag | .9964307 .012259 -0.29 0.771 .9726908 1.02075

sp75\_1403\_10\_c\_4lag | .9993232 .0039861 -0.17 0.865 .991541 1.007166

sp75\_150\_c\_4lag | 1.001578 .0621382 0.03 0.980 .8869026 1.131081

sp75\_160\_c\_4lag | .9288262 .0637034 -1.08 0.282 .8119979 1.062463

sp75\_1712\_10\_c\_4lag | .939625 .0237756 -2.46 0.014 .8941623 .9873992

sp75\_1720\_c\_4lag | 1.01479 .0118433 1.26 0.208 .9918409 1.03827

sp75\_1730\_c\_4lag | .9797256 .0134483 -1.49 0.136 .9537189 1.006442

sp75\_1910\_c\_4lag | .9988046 .0024114 -0.50 0.620 .9940895 1.003542

sp75\_320\_c\_4lag | .986956 .0060256 -2.15 0.032 .9752164 .9988369

sp75\_340\_c\_4lag | 1.000876 .0033696 0.26 0.795 .9942933 1.007502

sp75\_520\_c\_4lag | 1.004883 .0094486 0.52 0.604 .9865338 1.023574

sp75\_600\_c\_4lag | 1.082011 .1299221 0.66 0.512 .855114 1.369114

sp75\_700\_c\_4lag | .9879169 .011304 -1.06 0.288 .966008 1.010323

sp75\_800\_c\_4lag | 1.007775 .0258909 0.30 0.763 .9582863 1.059819

sp75\_810\_c\_4lag | 1.016223 .0124745 1.31 0.190 .9920648 1.040969

sp75\_820\_c\_4lag | .9671792 .0512462 -0.63 0.529 .8717779 1.073021

sp75\_900\_c\_4lag | .9892286 .0072288 -1.48 0.138 .9751613 1.003499

sp77\_1710\_c\_4lag | .991441 .0077475 -1.10 0.271 .9763719 1.006743

sp77\_200\_c\_4lag | 1.002107 .0037267 0.57 0.571 .9948293 1.009438

sp77\_210\_c\_4lag | 1.0006 .0235897 0.03 0.980 .9554165 1.047919

sp77\_400\_c\_4lag | 1.004315 .0031747 1.36 0.173 .9981118 1.010557

sp77\_410\_c\_4lag | 1.00208 .0045031 0.46 0.644 .9932932 1.010945

sp77\_500\_c\_4lag | .9435812 .0371142 -1.48 0.140 .8735719 1.019201

sp77\_510\_c\_4lag | .9787783 .0872788 -0.24 0.810 .8218294 1.1657

sp77\_600\_c\_4lag | 1.176114 .0657125 2.90 0.004 1.054121 1.312224

sp77\_700\_c\_4lag | .964889 .0357261 -0.97 0.334 .8973475 1.037514

sp77\_810\_c\_4lag | .9431471 .0426389 -1.29 0.195 .863172 1.030532

sp77\_900\_c\_4lag | .8446326 .0438499 -3.25 0.001 .7629164 .9351015

mine\_time | .9979816 .007034 -0.29 0.774 .98429 1.011864

onsite\_insp\_hours | .9999128 .0000529 -1.65 0.099 .9998092 1.000016

|

state |

1 | 1.290795 .2039496 1.62 0.106 .9470325 1.75934

2 | 1.859114 .1810905 6.37 0.000 1.536007 2.250189

3 | .819433 .1479766 -1.10 0.270 .5751749 1.167419

4 | 1.059746 .1159237 0.53 0.596 .8552445 1.313146

5 | .8568615 .1290086 -1.03 0.305 .6379024 1.150978

6 | .8411877 .045853 -3.17 0.002 .7559517 .9360344

7 | .9458247 .245949 -0.21 0.830 .5681554 1.574542

8 | 1.247186 .1380993 1.99 0.046 1.003873 1.549471

9 | .8949856 .0932933 -1.06 0.287 .7296033 1.097856

10 | .8208923 .1431015 -1.13 0.258 .5833122 1.155238

11 | .8336507 .2450317 -0.62 0.536 .4685907 1.483114

12 | 1.011128 .0935429 0.12 0.905 .8434484 1.212143

13 | 1.467544 .2437064 2.31 0.021 1.059832 2.0321

14 | .6500954 .0936697 -2.99 0.003 .490152 .8622306

15 | .6763944 .0460089 -5.75 0.000 .5919712 .7728575

17 | 1.423797 .2287575 2.20 0.028 1.039173 1.95078

|

time |

2000 | 1.089754 .0777785 1.20 0.228 .9474936 1.253375

2002 | .9065965 .0650199 -1.37 0.172 .7877112 1.043425

2003 | .8506733 .0698184 -1.97 0.049 .7242709 .9991359

2004 | .816675 .0622468 -2.66 0.008 .703349 .9482605

2005 | .7139151 .0542227 -4.44 0.000 .6151724 .8285073

2006 | .6981662 .0575778 -4.36 0.000 .593964 .8206491

2007 | .650019 .0544672 -5.14 0.000 .5515705 .7660392

2008 | .5772155 .0496505 -6.39 0.000 .4876632 .6832127

2009 | .4602099 .0420095 -8.50 0.000 .384818 .5503722

2010 | .5055024 .0455125 -7.58 0.000 .4237267 .60306

2011 | .5372754 .0492948 -6.77 0.000 .4488484 .6431234

2012 | .5302621 .0495079 -6.79 0.000 .441589 .6367412

2013 | .441689 .0444528 -8.12 0.000 .3626179 .538002

2014 | .4166151 .0451653 -8.08 0.000 .3368652 .5152451

2015 | .4585865 .0523383 -6.83 0.000 .3666687 .5735465

|

\_cons | .0000175 1.21e-06 -158.68 0.000 .0000153 .00002

ln(hours) | 1 (exposure)

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

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

note: sp77\_801\_1\_c\_4lag omitted because of collinearity

note: sp77\_606\_c\_4lag omitted because of collinearity

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -80287.922

Iteration 1: log pseudolikelihood = -47944.777 (backed up)

Iteration 2: log pseudolikelihood = -25203.457

Iteration 3: log pseudolikelihood = -15136.767

Iteration 4: log pseudolikelihood = -9333.6229

Iteration 5: log pseudolikelihood = -8679.0932

Iteration 6: log pseudolikelihood = -8582.1944

Iteration 7: log pseudolikelihood = -8578.6899

Iteration 8: log pseudolikelihood = -8578.6855

Iteration 9: log pseudolikelihood = -8578.6855

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -9249.9658

Iteration 1: log pseudolikelihood = -8971.6355

Iteration 2: log pseudolikelihood = -8961.958

Iteration 3: log pseudolikelihood = -8961.9317

Iteration 4: log pseudolikelihood = -8961.9317

Fitting full model:

Iteration 0: log pseudolikelihood = -8563.3829

Iteration 1: log pseudolikelihood = -8475.3862

Iteration 2: log pseudolikelihood = -8467.0444

Iteration 3: log pseudolikelihood = -8466.9633

Iteration 4: log pseudolikelihood = -8466.9633

Negative binomial regression Number of obs = 6,253

Wald chi2(337) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -8466.9633 Pseudo R2 = 0.0552

(Std. Err. adjusted for 1,238 clusters in mineid)

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

| Robust

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

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

sp47\_41\_c\_4lag | .9844519 .0131365 -1.17 0.240 .9590386 1.010539

sp48\_11\_c\_4lag | 1.004577 .0156902 0.29 0.770 .9742903 1.035804

sp71\_701\_c\_4lag | 1.355291 .1877519 2.19 0.028 1.033031 1.778082

sp75\_1001\_1\_c\_4lag | .9851178 .0461386 -0.32 0.749 .8987143 1.079828

sp75\_1001\_c\_4lag | .8732777 .0701466 -1.69 0.092 .7460692 1.022176

sp75\_1003\_1\_c\_4lag | .9450956 .0904022 -0.59 0.555 .7835285 1.139978

sp75\_1400\_1\_c\_4lag | .9856831 .0596961 -0.24 0.812 .8753582 1.109913

sp75\_1401\_1\_c\_4lag | .9899676 .1078145 -0.09 0.926 .7996852 1.225527

sp75\_1401\_c\_4lag | .9581957 .0357299 -1.15 0.252 .8906642 1.030847

sp75\_1403\_11\_c\_4lag | 1.014915 .100074 0.15 0.881 .8365629 1.231292

sp75\_1404\_1\_c\_4lag | .864933 .0946989 -1.33 0.185 .69789 1.071959

sp75\_1405\_1\_c\_4lag | 1.160866 .0801521 2.16 0.031 1.013936 1.329087

sp75\_1431\_c\_4lag | .9144706 .0823499 -0.99 0.321 .7665092 1.090993

sp75\_151\_c\_4lag | 1.354854 .1387575 2.97 0.003 1.108451 1.656031

sp75\_1721\_c\_4lag | .9775735 .2815663 -0.08 0.937 .5558805 1.719164

sp75\_1731\_c\_4lag | .9999883 .0007355 -0.02 0.987 .9985477 1.001431

sp75\_1911\_c\_4lag | .9995719 .0030384 -0.14 0.888 .9936345 1.005545

sp75\_211\_c\_4lag | .9969869 .0045706 -0.66 0.510 .9880688 1.005986

sp75\_341\_c\_4lag | 1.050483 .0720796 0.72 0.473 .9182975 1.201697

sp75\_506\_1\_c\_4lag | 1.078597 .0231222 3.53 0.000 1.034218 1.124881

sp75\_510\_1\_c\_4lag | 1.058055 .1784216 0.33 0.738 .7602719 1.472475

sp75\_511\_1\_c\_4lag | .7192614 .1269854 -1.87 0.062 .5088707 1.016638

sp75\_511\_c\_4lag | 1.008515 .0125101 0.68 0.494 .9842911 1.033335

sp75\_512\_1\_c\_4lag | 1.099665 .089561 1.17 0.243 .937422 1.289987

sp75\_513\_1\_c\_4lag | 1.020185 .037307 0.55 0.585 .9496236 1.09599

sp75\_516\_1\_c\_4lag | 1.007733 .0459886 0.17 0.866 .9215102 1.102023

sp75\_517\_1\_c\_4lag | .9758956 .0423967 -0.56 0.574 .8962389 1.062632

sp75\_518\_1\_c\_4lag | 1.000272 .0053222 0.05 0.959 .9898954 1.010758

sp75\_523\_1\_c\_4lag | .993461 .0088 -0.74 0.459 .9763622 1.010859

sp75\_600\_1\_c\_4lag | .9743697 .0478147 -0.53 0.597 .8850202 1.07274

sp75\_601\_1\_c\_4lag | 1.000513 .0037412 0.14 0.891 .9932067 1.007872

sp75\_601\_c\_4lag | 1.0062 .0043494 1.43 0.153 .9977116 1.014761

sp75\_700\_1\_c\_4lag | .9088075 .0334955 -2.59 0.009 .8454726 .9768869

sp75\_701\_1\_c\_4lag | .9894872 .0120756 -0.87 0.386 .9661003 1.01344

sp75\_701\_c\_4lag | 1.003063 .0033779 0.91 0.364 .9964646 1.009706

sp75\_702\_1\_c\_4lag | 1.004545 .0479748 0.09 0.924 .9147828 1.103115

sp75\_703\_1\_c\_4lag | .9033266 .065921 -1.39 0.164 .7829385 1.042226

sp75\_705\_1\_c\_4lag | .9612273 .0303676 -1.25 0.211 .9035132 1.022628

sp75\_801\_c\_4lag | .94417 .0730191 -0.74 0.458 .8113738 1.098701

sp75\_811\_c\_4lag | 1.012159 .0106997 1.14 0.253 .9914037 1.033349

sp75\_821\_c\_4lag | 1.038666 .0169414 2.33 0.020 1.005987 1.072407

sp75\_831\_c\_4lag | .8808902 .0573505 -1.95 0.051 .7753615 1.000782

sp75\_901\_c\_4lag | .9747304 .0233639 -1.07 0.286 .9299969 1.021616

sp75\_902\_1\_c\_4lag | 1.160505 .0582507 2.97 0.003 1.051772 1.280479

sp77\_1111\_c\_4lag | .9586662 .0490321 -0.83 0.409 .8672248 1.059749

sp77\_401\_c\_4lag | .9953557 .0199194 -0.23 0.816 .9570701 1.035173

sp77\_403\_1\_c\_4lag | 1.025089 .0356097 0.71 0.476 .9576182 1.097314

sp77\_411\_c\_4lag | .9337233 .1015893 -0.63 0.529 .7544097 1.155658

sp77\_501\_c\_4lag | .9859114 .029316 -0.48 0.633 .9300954 1.045077

sp77\_502\_1\_c\_4lag | 1.095835 .1974126 0.51 0.611 .7698441 1.559867

sp77\_503\_1\_c\_4lag | .9952637 .0733325 -0.06 0.949 .8614307 1.149889

sp77\_506\_1\_c\_4lag | 1.004731 .0081142 0.58 0.559 .9889522 1.020761

sp77\_508\_1\_c\_4lag | 1.020852 .0377879 0.56 0.577 .9494118 1.097668

sp77\_511\_c\_4lag | .9424746 .0427866 -1.31 0.192 .862237 1.030179

sp77\_601\_c\_4lag | .9465646 .0530918 -0.98 0.328 .8480222 1.056558

sp77\_606\_1\_c\_4lag | .9384048 .0851827 -0.70 0.484 .7854586 1.121133

sp77\_700\_1\_c\_4lag | 1.041177 .066339 0.63 0.527 .9189455 1.179666

sp77\_701\_1\_c\_4lag | .979903 .0445834 -0.45 0.655 .8963039 1.071299

sp77\_701\_c\_4lag | 1.00762 .0090657 0.84 0.399 .9900072 1.025546

sp77\_704\_1\_c\_4lag | 1.095216 .0644459 1.55 0.122 .9759158 1.2291

sp77\_800\_1\_c\_4lag | .9728349 .0420833 -0.64 0.524 .893753 1.058914

sp77\_801\_1\_c\_4lag | 1 (omitted)

sp77\_801\_c\_4lag | .6925977 .1176844 -2.16 0.031 .4964175 .9663069

sp77\_807\_1\_c\_4lag | 1.110288 .1077754 1.08 0.281 .9179307 1.342956

sp77\_900\_1\_c\_4lag | 1.059998 .0697458 0.89 0.376 .9317463 1.205903

sp77\_901\_1\_c\_4lag | .8617888 .1101003 -1.16 0.244 .6708929 1.107002

sp77\_901\_c\_4lag | 1.037258 .0399834 0.95 0.343 .9617791 1.11866

sp47\_42\_c\_4lag | .9218245 .0339496 -2.21 0.027 .8576292 .990825

sp75\_1100\_2\_c\_4lag | 1.001352 .001759 0.77 0.442 .99791 1.004805

sp75\_1102\_c\_4lag | .9857122 .0149808 -0.95 0.344 .9567834 1.015516

sp75\_1106\_2\_c\_4lag | 1.008262 .0097847 0.85 0.397 .9892653 1.027623

sp75\_1400\_2\_c\_4lag | .9935055 .0358975 -0.18 0.857 .9255812 1.066414

sp75\_1402\_2\_c\_4lag | .9333152 .1235007 -0.52 0.602 .7201008 1.20966

sp75\_1432\_c\_4lag | .9703661 .0417707 -0.70 0.485 .8918556 1.055788

sp75\_1600\_2\_c\_4lag | .9955991 .0057083 -0.77 0.442 .9844737 1.00685

sp75\_1912\_c\_4lag | 1.00979 .0224544 0.44 0.661 .9667251 1.054773

sp75\_202\_c\_4lag | 1.000194 .0005864 0.33 0.740 .9990456 1.001344

sp75\_212\_c\_4lag | .9855625 .0086559 -1.66 0.098 .9687424 1.002675

sp75\_312\_c\_4lag | 1.017472 .0082622 2.13 0.033 1.001406 1.033795

sp75\_342\_c\_4lag | 1.000998 .0016814 0.59 0.552 .9977083 1.004299

sp75\_352\_c\_4lag | .9802447 .0114423 -1.71 0.087 .9580728 1.00293

sp75\_382\_c\_4lag | 1.024693 .0133376 1.87 0.061 .9988822 1.05117

sp75\_512\_2\_c\_4lag | 1.005665 .0043067 1.32 0.187 .9972598 1.014142

sp75\_512\_c\_4lag | 1.000319 .0011275 0.28 0.777 .9981116 1.002531

sp75\_516\_2\_c\_4lag | 1.006717 .0069925 0.96 0.335 .9931048 1.020516

sp75\_523\_2\_c\_4lag | .9984704 .0069157 -0.22 0.825 .9850074 1.012117

sp75\_601\_2\_c\_4lag | .9548985 .0385044 -1.14 0.252 .8823364 1.033428

sp75\_602\_c\_4lag | 1.004556 .0117073 0.39 0.697 .9818698 1.027766

sp75\_701\_2\_c\_4lag | .9937295 .0152876 -0.41 0.683 .9642135 1.024149

sp75\_702\_c\_4lag | .8777751 .0736024 -1.55 0.120 .7447476 1.034564

sp75\_703\_2\_c\_4lag | .9491102 .040417 -1.23 0.220 .8731102 1.031726

sp75\_705\_2\_c\_4lag | 1.048737 .0514637 0.97 0.332 .9525691 1.154614

sp75\_800\_2\_c\_4lag | .9582583 .0654415 -0.62 0.532 .8382089 1.095501

sp75\_802\_c\_4lag | 1.00343 .0396376 0.09 0.931 .9286725 1.084204

sp75\_803\_2\_c\_4lag | 1.070359 .0994973 0.73 0.465 .8920807 1.284264

sp75\_812\_c\_4lag | .9992154 .0496763 -0.02 0.987 .9064448 1.101481

sp75\_832\_c\_4lag | .9208518 .1437255 -0.53 0.597 .6781647 1.250387

sp75\_900\_2\_c\_4lag | .9464984 .0590962 -0.88 0.378 .8374786 1.06971

sp75\_902\_2\_c\_4lag | 1.013278 .0171365 0.78 0.435 .9802417 1.047428

sp75\_902\_c\_4lag | 1.002881 .006227 0.46 0.643 .9907507 1.015161

sp77\_1112\_c\_4lag | 1.002363 .0253738 0.09 0.926 .9538444 1.053349

sp77\_1432\_c\_4lag | .9758831 .0610088 -0.39 0.696 .8633436 1.103093

sp77\_1802\_c\_4lag | 1.067154 .0812412 0.85 0.393 .919234 1.238877

sp77\_202\_c\_4lag | .9899923 .0038743 -2.57 0.010 .9824278 .9976149

sp77\_402\_c\_4lag | 1.009036 .0087987 1.03 0.302 .9919378 1.02643

sp77\_403\_2\_c\_4lag | 1.409198 .2428905 1.99 0.047 1.005213 1.97554

sp77\_412\_c\_4lag | 1.024094 .0206471 1.18 0.238 .984416 1.065372

sp77\_502\_2\_c\_4lag | .9754243 .0124091 -1.96 0.050 .9514037 1.000051

sp77\_502\_c\_4lag | .9976579 .0022567 -1.04 0.300 .9932446 1.002091

sp77\_512\_c\_4lag | .996413 .0057405 -0.62 0.533 .9852252 1.007728

sp77\_602\_c\_4lag | 1.113516 .0529647 2.26 0.024 1.014399 1.222318

sp77\_701\_2\_c\_4lag | .9841465 .0346488 -0.45 0.650 .9185261 1.054455

sp77\_702\_c\_4lag | .9396926 .1449641 -0.40 0.687 .6945012 1.271448

sp77\_800\_2\_c\_4lag | 1.021694 .0308886 0.71 0.478 .9629126 1.084065

sp77\_802\_c\_4lag | 1.038223 .1009742 0.39 0.700 .8580363 1.256249

sp77\_807\_2\_c\_4lag | .9815961 .0415269 -0.44 0.661 .9034879 1.066457

sp77\_900\_2\_c\_4lag | 1.058338 .0315597 1.90 0.057 .9982554 1.122037

sp77\_902\_2\_c\_4lag | .9222368 .1026455 -0.73 0.467 .7414864 1.147048

sp77\_902\_c\_4lag | 1.020141 .0355375 0.57 0.567 .9528131 1.092226

sp47\_43\_c\_4lag | 1.167513 .1009689 1.79 0.073 .9854805 1.383169

sp72\_503\_c\_4lag | .9885404 .0128179 -0.89 0.374 .9637343 1.013985

sp75\_1106\_3\_c\_4lag | 1.006501 .0037701 1.73 0.084 .9991388 1.013918

sp75\_1400\_3\_c\_4lag | 1.017513 .0130571 1.35 0.176 .9922406 1.043429

sp75\_1403\_3\_c\_4lag | .9413663 .0699986 -0.81 0.416 .8137004 1.089062

sp75\_1433\_c\_4lag | 1.011358 .0210004 0.54 0.587 .9710241 1.053367

sp75\_153\_c\_4lag | .9794094 .0548917 -0.37 0.710 .8775221 1.093127

sp75\_1903\_c\_4lag | .9984223 .0070339 -0.22 0.823 .9847309 1.012304

sp75\_1913\_c\_4lag | 1.008353 .0123823 0.68 0.498 .9843744 1.032917

sp75\_503\_c\_4lag | .999353 .0008673 -0.75 0.456 .9976546 1.001054

sp75\_513\_c\_4lag | .9972568 .0206907 -0.13 0.895 .9575173 1.038646

sp75\_523\_c\_4lag | .9917466 .007503 -1.10 0.273 .9771495 1.006562

sp75\_601\_3\_c\_4lag | .959023 .0491006 -0.82 0.414 .8674586 1.060253

sp75\_603\_c\_4lag | 1.002447 .0220543 0.11 0.912 .9601395 1.046618

sp75\_701\_3\_c\_4lag | 1.013816 .0174217 0.80 0.425 .9802385 1.048543

sp75\_703\_3\_c\_4lag | 1.011671 .0206745 0.57 0.570 .9719508 1.053015

sp75\_703\_c\_4lag | 1.011312 .0080709 1.41 0.159 .9956168 1.027255

sp75\_705\_3\_c\_4lag | 1.185299 .0722809 2.79 0.005 1.051769 1.33578

sp75\_800\_3\_c\_4lag | 1.045344 .0297893 1.56 0.120 .9885587 1.105391

sp75\_803\_c\_4lag | 1.002417 .0247405 0.10 0.922 .9550807 1.052099

sp75\_900\_3\_c\_4lag | 1.026364 .0199581 1.34 0.181 .9879824 1.066236

sp75\_903\_c\_4lag | 1.008434 .0117536 0.72 0.471 .9856581 1.031735

sp77\_103\_c\_4lag | .9078103 .111259 -0.79 0.430 .7139601 1.154293

sp77\_1103\_c\_4lag | 1.000074 .0052463 0.01 0.989 .9898438 1.010409

sp77\_1403\_c\_4lag | .9961785 .0396764 -0.10 0.923 .921372 1.077059

sp77\_1433\_c\_4lag | 1.033675 .0452229 0.76 0.449 .9487337 1.126222

sp77\_203\_c\_4lag | 1.031022 .0407079 0.77 0.439 .9542452 1.113977

sp77\_403\_c\_4lag | 1.091315 .0630742 1.51 0.131 .9744366 1.222212

sp77\_413\_c\_4lag | .9841844 .0375633 -0.42 0.676 .913248 1.060631

sp77\_503\_c\_4lag | 1.001172 .0447302 0.03 0.979 .9172315 1.092795

sp77\_513\_c\_4lag | .9911355 .0093769 -0.94 0.347 .9729265 1.009685

sp77\_603\_c\_4lag | 1.120866 .0640122 2.00 0.046 1.002171 1.253619

sp77\_701\_3\_c\_4lag | .9791859 .0820736 -0.25 0.802 .830843 1.154015

sp77\_703\_c\_4lag | 1.113565 .1451079 0.83 0.409 .8625734 1.43759

sp77\_803\_c\_4lag | .991922 .0998084 -0.08 0.936 .8143828 1.208166

sp77\_807\_3\_c\_4lag | .9750075 .0605111 -0.41 0.683 .8633374 1.101122

sp77\_902\_3\_c\_4lag | 1.00839 .0753867 0.11 0.911 .8709495 1.167519

sp77\_903\_c\_4lag | 1.015456 .0486655 0.32 0.749 .9244157 1.115462

sp47\_44\_c\_4lag | .9959582 .0182018 -0.22 0.825 .9609148 1.03228

sp48\_24\_c\_4lag | .2414068 .0161336 -21.27 0.000 .2117689 .2751925

sp48\_4\_c\_4lag | 1.297679 .1344595 2.51 0.012 1.059179 1.589881

sp75\_1103\_4\_c\_4lag | 1.004495 .0035663 1.26 0.207 .9975293 1.011509

sp75\_1104\_c\_4lag | 1.002339 .0085076 0.28 0.783 .9858023 1.019153

sp75\_1106\_4\_c\_4lag | .9988138 .0294152 -0.04 0.968 .9427935 1.058163

sp75\_1107\_14\_c\_4lag | 1.057732 .1273173 0.47 0.641 .8354449 1.339162

sp75\_1400\_4\_c\_4lag | .9852008 .0258989 -0.57 0.571 .9357254 1.037292

sp75\_1403\_4\_c\_4lag | 1.205224 .0900267 2.50 0.012 1.041083 1.395243

sp75\_1404\_c\_4lag | .9413576 .0754535 -0.75 0.451 .8045028 1.101493

sp75\_1434\_c\_4lag | .9675882 .0283161 -1.13 0.260 .9136513 1.024709

sp75\_1914\_c\_4lag | .9996764 .0014021 -0.23 0.818 .9969322 1.002428

sp75\_214\_c\_4lag | .9946462 .0083418 -0.64 0.522 .9784301 1.011131

sp75\_324\_c\_4lag | .972381 .0129981 -2.10 0.036 .947236 .9981935

sp75\_344\_c\_4lag | 1.008164 .0220309 0.37 0.710 .9658956 1.052281

sp75\_504\_c\_4lag | .9666495 .0245072 -1.34 0.181 .9197902 1.015896

sp75\_514\_c\_4lag | 1.002551 .0040696 0.63 0.530 .9946064 1.010559

sp75\_604\_c\_4lag | 1.006015 .0015737 3.83 0.000 1.002935 1.009104

sp75\_701\_4\_c\_4lag | 1.140888 .0653117 2.30 0.021 1.019799 1.276354

sp75\_703\_4\_c\_4lag | .5959439 .05907 -5.22 0.000 .4907205 .72373

sp75\_704\_c\_4lag | .9567462 .0534429 -0.79 0.429 .8575303 1.067441

sp75\_800\_4\_c\_4lag | 1.008786 .020822 0.42 0.672 .9687899 1.050433

sp75\_804\_c\_4lag | 1.010575 .0156806 0.68 0.498 .9803045 1.041781

sp75\_814\_c\_4lag | .9897861 .0261026 -0.39 0.697 .9399256 1.042291

sp75\_834\_c\_4lag | .0009681 .0003569 -18.83 0.000 .0004701 .0019938

sp75\_900\_4\_c\_4lag | .9979583 .005399 -0.38 0.706 .9874323 1.008597

sp75\_902\_4\_c\_4lag | 1.00427 .0117574 0.36 0.716 .9814879 1.02758

sp75\_904\_c\_4lag | .9983944 .0027675 -0.58 0.562 .9929849 1.003833

sp77\_104\_c\_4lag | .9791292 .0664762 -0.31 0.756 .857135 1.118487

sp77\_1104\_c\_4lag | 1.00152 .0019887 0.76 0.444 .9976298 1.005425

sp77\_1434\_c\_4lag | 1.019516 .0394782 0.50 0.618 .9450032 1.099903

sp77\_204\_c\_4lag | .9883085 .008935 -1.30 0.193 .9709504 1.005977

sp77\_314\_c\_4lag | .5510327 .0859736 -3.82 0.000 .4058547 .7481422

sp77\_404\_c\_4lag | .9948691 .0027847 -1.84 0.066 .9894262 1.000342

sp77\_504\_c\_4lag | .9933906 .0103336 -0.64 0.524 .973342 1.013852

sp77\_514\_c\_4lag | .9635063 .038858 -0.92 0.357 .8902783 1.042758

sp77\_604\_c\_4lag | 1.040306 .0348938 1.18 0.239 .9741154 1.110995

sp77\_701\_4\_c\_4lag | 1.005625 .0330652 0.17 0.865 .9428623 1.072565

sp77\_704\_c\_4lag | .9491838 .1162595 -0.43 0.670 .746607 1.206726

sp77\_804\_c\_4lag | .8871272 .1830401 -0.58 0.562 .5920498 1.329271

sp77\_904\_c\_4lag | .9968347 .0089283 -0.35 0.723 .9794882 1.014488

sp48\_25\_c\_4lag | .975421 .0208152 -1.17 0.244 .9354653 1.017083

sp48\_5\_c\_4lag | 1.035244 .032008 1.12 0.263 .9743722 1.099918

sp75\_1106\_5\_c\_4lag | .9897561 .0131415 -0.78 0.438 .9643316 1.015851

sp75\_1403\_5\_c\_4lag | .999668 .0023018 -0.14 0.885 .9951667 1.00419

sp75\_1405\_c\_4lag | .9999504 .0043854 -0.01 0.991 .991392 1.008583

sp75\_1435\_c\_4lag | .9440264 .0450449 -1.21 0.227 .8597426 1.036573

sp75\_155\_c\_4lag | .9624738 .0810504 -0.45 0.650 .8160351 1.135191

sp75\_1725\_c\_4lag | 1.001418 .0010229 1.39 0.165 .9994154 1.003425

sp75\_1915\_c\_4lag | 1.032224 .0304433 1.08 0.282 .9742485 1.093651

sp75\_505\_c\_4lag | 1.017824 .0443132 0.41 0.685 .9345745 1.10849

sp75\_515\_c\_4lag | .9921878 .0026552 -2.93 0.003 .9869973 .9974055

sp75\_605\_c\_4lag | 1.004022 .0052461 0.77 0.442 .9937922 1.014357

sp75\_705\_c\_4lag | 1.132837 .0576256 2.45 0.014 1.025341 1.251604

sp75\_805\_c\_4lag | 1.025888 .0404342 0.65 0.517 .9496221 1.108279

sp75\_815\_c\_4lag | 1.094779 .0316821 3.13 0.002 1.034411 1.158669

sp75\_825\_c\_4lag | 1.015268 .0450084 0.34 0.732 .9307774 1.107429

sp75\_905\_c\_4lag | 1.012516 .0479003 0.26 0.793 .9228539 1.110889

sp77\_1605\_c\_4lag | .9970573 .0026449 -1.11 0.267 .9918869 1.002255

sp77\_1915\_c\_4lag | .9790877 .0285066 -0.73 0.468 .9247801 1.036585

sp77\_205\_c\_4lag | 1.000118 .0016554 0.07 0.943 .9968783 1.003367

sp77\_305\_c\_4lag | 1.239086 .1685866 1.58 0.115 .9490502 1.617758

sp77\_315\_c\_4lag | .6517337 .1539208 -1.81 0.070 .4102427 1.035379

sp77\_405\_c\_4lag | 1.013571 .0238555 0.57 0.567 .9678773 1.061422

sp77\_505\_c\_4lag | .9970041 .006291 -0.48 0.634 .98475 1.009411

sp77\_515\_c\_4lag | .9575253 .0814572 -0.51 0.610 .8104721 1.13126

sp77\_605\_c\_4lag | .9562578 .1067745 -0.40 0.689 .7683002 1.190198

sp77\_705\_c\_4lag | 1.042418 .0237061 1.83 0.068 .9969747 1.089932

sp77\_805\_c\_4lag | .9687807 .05317 -0.58 0.563 .8699788 1.078803

sp48\_26\_c\_4lag | 1.046025 .0224892 2.09 0.036 1.002863 1.091045

sp48\_6\_c\_4lag | .9980851 .0174084 -0.11 0.912 .9645419 1.032795

sp75\_1106\_6\_c\_4lag | .9372233 .0977778 -0.62 0.534 .7639056 1.149864

sp75\_1106\_c\_4lag | 1.040112 .0344551 1.19 0.235 .9747273 1.109884

sp75\_1403\_6\_c\_4lag | .9991781 .0021087 -0.39 0.697 .9950536 1.00332

sp75\_1436\_c\_4lag | 1.160008 .1321446 1.30 0.193 .9278859 1.450198

sp75\_156\_c\_4lag | .9950207 .0820473 -0.06 0.952 .8465329 1.169554

sp75\_1712\_6\_c\_4lag | 1.001085 .0099132 0.11 0.913 .9818431 1.020705

sp75\_1726\_c\_4lag | 1.027654 .0285371 0.98 0.326 .9732174 1.085136

sp75\_506\_c\_4lag | .9927475 .0127766 -0.57 0.572 .9680192 1.018108

sp75\_516\_c\_4lag | .9930927 .0039758 -1.73 0.083 .9853307 1.000916

sp75\_606\_c\_4lag | .9953195 .0021502 -2.17 0.030 .9911142 .9995427

sp75\_706\_c\_4lag | .9758909 .0183892 -1.30 0.195 .9405062 1.012607

sp75\_806\_c\_4lag | 1.03874 .0890389 0.44 0.657 .8780992 1.22877

sp75\_816\_c\_4lag | .9983706 .0090054 -0.18 0.857 .9808754 1.016178

sp77\_1106\_c\_4lag | 1.009166 .1846909 0.05 0.960 .7049873 1.444588

sp77\_1606\_c\_4lag | 1.006504 .0038679 1.69 0.092 .9989519 1.014114

sp77\_1906\_c\_4lag | .9655145 .0481202 -0.70 0.481 .8756607 1.064588

sp77\_1916\_c\_4lag | 1.060728 .0565656 1.11 0.269 .955459 1.177596

sp77\_206\_c\_4lag | 1.016619 .0120874 1.39 0.166 .9932023 1.040588

sp77\_216\_c\_4lag | 1.012776 .0114831 1.12 0.263 .9905182 1.035535

sp77\_506\_c\_4lag | .9929661 .0082637 -0.85 0.396 .9769009 1.009295

sp77\_516\_c\_4lag | .9935879 .0031699 -2.02 0.044 .9873943 .9998203

sp77\_606\_c\_4lag | 1 (omitted)

sp77\_906\_c\_4lag | .5124168 .1450612 -2.36 0.018 .2942082 .8924665

sp48\_27\_c\_4lag | 1.028178 .023839 1.20 0.231 .9825 1.075979

sp48\_7\_c\_4lag | 1.012138 .0142069 0.86 0.390 .9846721 1.040369

sp75\_1403\_7\_c\_4lag | .9872647 .0096655 -1.31 0.190 .9685014 1.006392

sp75\_1437\_c\_4lag | .9807991 .0616159 -0.31 0.758 .8671729 1.109314

sp75\_1727\_c\_4lag | 1.010855 .1866112 0.06 0.953 .7039641 1.451533

sp75\_337\_c\_4lag | 1.003055 .0101053 0.30 0.762 .9834428 1.023057

sp75\_507\_c\_4lag | 1.006594 .0130903 0.51 0.613 .981262 1.032581

sp75\_517\_c\_4lag | .9995478 .0009669 -0.47 0.640 .9976546 1.001445

sp75\_607\_c\_4lag | 1.004496 .0123117 0.37 0.714 .9806528 1.028918

sp75\_807\_c\_4lag | 1.005946 .002542 2.35 0.019 1.000976 1.010941

sp75\_827\_c\_4lag | 1.080468 .0536851 1.56 0.119 .980208 1.190983

sp75\_907\_c\_4lag | 1.023146 .0196543 1.19 0.234 .98534 1.062402

sp77\_1437\_c\_4lag | .9122604 .0299031 -2.80 0.005 .8554943 .9727932

sp77\_207\_c\_4lag | 1.014577 .008195 1.79 0.073 .9986415 1.030767

sp77\_507\_c\_4lag | .9868596 .02579 -0.51 0.613 .9375849 1.038724

sp77\_807\_c\_4lag | 1.001424 .0404915 0.04 0.972 .9251252 1.084015

sp48\_28\_c\_4lag | .9947739 .0302762 -0.17 0.863 .9371689 1.05592

sp48\_8\_c\_4lag | 1.016638 .0255213 0.66 0.511 .9678283 1.06791

sp75\_1403\_8\_c\_4lag | .9967538 .0019592 -1.65 0.098 .9929213 1.000601

sp75\_1438\_c\_4lag | 2.142315 .3569216 4.57 0.000 1.545498 2.969602

sp75\_1728\_c\_4lag | 1.086103 .1250294 0.72 0.473 .8667285 1.361004

sp75\_208\_c\_4lag | .9992839 .004722 -0.15 0.879 .9900715 1.008582

sp75\_518\_c\_4lag | 1.001492 .0034607 0.43 0.666 .9947323 1.008298

sp75\_705\_8\_c\_4lag | 1.085623 .0626797 1.42 0.155 .9694694 1.215694

sp75\_808\_c\_4lag | .9908441 .0240962 -0.38 0.705 .9447244 1.039215

sp75\_818\_c\_4lag | 1.001096 .0403014 0.03 0.978 .9251428 1.083285

sp77\_1438\_c\_4lag | .7322308 .1095769 -2.08 0.037 .5460939 .9818127

sp77\_208\_c\_4lag | 1.003151 .0049346 0.64 0.522 .9935262 1.01287

sp77\_408\_c\_4lag | .9630222 .0255262 -1.42 0.155 .914269 1.014375

sp77\_508\_c\_4lag | .9424296 .0269484 -2.07 0.038 .8910644 .9967557

sp77\_704\_8\_c\_4lag | .9820501 .0638094 -0.28 0.780 .8646219 1.115427

sp77\_808\_c\_4lag | 1.118291 .0848786 1.47 0.141 .9637148 1.297661

sp75\_1403\_9\_c\_4lag | .994756 .0101741 -0.51 0.607 .9750136 1.014898

sp75\_1729\_c\_4lag | 1.01311 .0407951 0.32 0.746 .9362272 1.096307

sp75\_1909\_c\_4lag | 1.001914 .00145 1.32 0.186 .9990761 1.00476

sp75\_519\_c\_4lag | 1.110175 .0921026 1.26 0.208 .9435698 1.306198

sp75\_809\_c\_4lag | 1.000846 .0101166 0.08 0.933 .9812133 1.020872

sp75\_819\_c\_4lag | 1.335951 .1906771 2.03 0.042 1.009952 1.767179

sp77\_309\_c\_4lag | 1.005781 .1214461 0.05 0.962 .7938205 1.274337

sp77\_409\_c\_4lag | .9609457 .0521448 -0.73 0.463 .8639909 1.06878

sp77\_509\_c\_4lag | .9818591 .0143138 -1.26 0.209 .9542016 1.010318

sp77\_704\_9\_c\_4lag | .8416123 .1079356 -1.34 0.179 .6545558 1.082125

sp77\_809\_c\_4lag | .9608215 .0149535 -2.57 0.010 .9319557 .9905813

sp72\_610\_c\_4lag | .9685615 .0849259 -0.36 0.716 .8156273 1.150172

sp72\_620\_c\_4lag | 1.060989 .0413255 1.52 0.129 .9830072 1.145157

sp72\_630\_c\_4lag | 1.003506 .0022443 1.56 0.118 .999117 1.007915

sp75\_100\_c\_4lag | 1.02482 .0294523 0.85 0.394 .9686901 1.084202

sp75\_1101\_20\_c\_4lag | .979065 .048911 -0.42 0.672 .8877449 1.079779

sp75\_1400\_c\_4lag | .9974167 .0104801 -0.25 0.806 .9770862 1.01817

sp75\_1403\_10\_c\_4lag | .9988569 .0034463 -0.33 0.740 .9921251 1.005634

sp75\_150\_c\_4lag | .9859046 .0558355 -0.25 0.802 .882324 1.101645

sp75\_160\_c\_4lag | .9508633 .0555445 -0.86 0.388 .8479989 1.066205

sp75\_1712\_10\_c\_4lag | .9472681 .0222472 -2.31 0.021 .9046528 .9918909

sp75\_1720\_c\_4lag | 1.01956 .0109069 1.81 0.070 .9984052 1.041163

sp75\_1730\_c\_4lag | .9805865 .0120038 -1.60 0.109 .9573395 1.004398

sp75\_1910\_c\_4lag | .9979754 .0020889 -0.97 0.333 .9938897 1.002078

sp75\_320\_c\_4lag | .9891947 .0056888 -1.89 0.059 .9781073 1.000408

sp75\_340\_c\_4lag | 1.000156 .003006 0.05 0.959 .9942821 1.006065

sp75\_520\_c\_4lag | 1.001653 .0075265 0.22 0.826 .9870092 1.016514

sp75\_600\_c\_4lag | 1.033506 .0845357 0.40 0.687 .8804176 1.213213

sp75\_700\_c\_4lag | .9866781 .0093077 -1.42 0.155 .9686029 1.005091

sp75\_800\_c\_4lag | 1.020746 .0226052 0.93 0.354 .9773886 1.066027

sp75\_810\_c\_4lag | 1.02131 .0105649 2.04 0.042 1.000811 1.042228

sp75\_820\_c\_4lag | .964693 .0395838 -0.88 0.381 .890148 1.045481

sp75\_900\_c\_4lag | .9960508 .0067663 -0.58 0.560 .982877 1.009401

sp77\_1710\_c\_4lag | .9918028 .0068104 -1.20 0.231 .978544 1.005241

sp77\_200\_c\_4lag | 1.001793 .0031403 0.57 0.568 .995657 1.007967

sp77\_210\_c\_4lag | .9969094 .02143 -0.14 0.886 .95578 1.039809

sp77\_400\_c\_4lag | 1.003569 .0026982 1.33 0.185 .9982943 1.008871

sp77\_410\_c\_4lag | 1.003758 .004095 0.92 0.358 .9957643 1.011817

sp77\_500\_c\_4lag | .9458036 .0366558 -1.44 0.151 .8766204 1.020447

sp77\_510\_c\_4lag | .9853814 .0596173 -0.24 0.808 .8751957 1.109439

sp77\_600\_c\_4lag | 1.176224 .0599376 3.19 0.001 1.064425 1.299767

sp77\_700\_c\_4lag | .9596836 .0309171 -1.28 0.201 .9009607 1.022234

sp77\_810\_c\_4lag | .9761429 .0358326 -0.66 0.511 .9083792 1.048962

sp77\_900\_c\_4lag | .8640661 .0431406 -2.93 0.003 .7835174 .9528955

mine\_time | .9958709 .0067675 -0.61 0.543 .9826948 1.009224

onsite\_insp\_hours | .9998913 .0000492 -2.21 0.027 .9997949 .9999876

|

state |

1 | 1.277585 .1620336 1.93 0.053 .9964 1.638122

2 | 2.143661 .1818619 8.99 0.000 1.815276 2.531451

3 | .8272992 .1506323 -1.04 0.298 .5789995 1.18208

4 | 1.05076 .0932258 0.56 0.577 .8830452 1.250328

5 | .868071 .1357792 -0.90 0.366 .6388733 1.179494

6 | .9004387 .0486784 -1.94 0.052 .8099115 1.001085

7 | .9942984 .2768586 -0.02 0.984 .5761067 1.716053

8 | 1.09863 .131593 0.79 0.432 .8687513 1.389338

9 | .9287801 .0797016 -0.86 0.389 .784998 1.098898

10 | .982504 .1416235 -0.12 0.903 .7406917 1.30326

11 | .7875888 .2217355 -0.85 0.396 .4535808 1.367554

12 | 1.018769 .0889887 0.21 0.831 .8584673 1.209003

13 | 1.429735 .2212234 2.31 0.021 1.05572 1.936253

14 | .6259353 .0879577 -3.33 0.001 .4752443 .8244076

15 | .6951759 .0445905 -5.67 0.000 .6130506 .7883029

17 | 1.38906 .2113983 2.16 0.031 1.030809 1.871818

|

time |

2000 | 1.127801 .0735305 1.84 0.065 .9925118 1.281531

2002 | .9678692 .0605369 -0.52 0.602 .8562033 1.094098

2003 | .8605838 .0612958 -2.11 0.035 .7484548 .9895113

2004 | .8840942 .060152 -1.81 0.070 .7737212 1.010212

2005 | .7721011 .0528088 -3.78 0.000 .6752354 .8828626

2006 | .7300039 .0564256 -4.07 0.000 .6273814 .8494126

2007 | .6859549 .0547393 -4.72 0.000 .5866371 .8020872

2008 | .6290289 .0497554 -5.86 0.000 .5386934 .7345131

2009 | .537181 .045202 -7.38 0.000 .4555069 .6334996

2010 | .5333124 .0445404 -7.53 0.000 .4527853 .6281612

2011 | .5542512 .046156 -7.09 0.000 .470784 .6525166

2012 | .553858 .0473342 -6.91 0.000 .4684384 .6548539

2013 | .4843883 .0458626 -7.66 0.000 .4023469 .5831586

2014 | .4585054 .0461281 -7.75 0.000 .3764515 .5584442

2015 | .4706942 .0521932 -6.80 0.000 .3787502 .5849581

|

\_cons | .0000166 1.07e-06 -170.65 0.000 .0000147 .0000189

ln(hours) | 1 (exposure)

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

/lnalpha | -2.001647 .1506059 -2.296829 -1.706465

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

alpha | .1351126 .0203488 .1005773 .1815063

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(est1 stored)

**. lrtest pois nbin, stats force**

Likelihood-ratio test LR chi2(1) = 223.44

(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 | 6,253 -9569.622 -8578.686 338 17833.37 20111.77

nbin | 6,253 -8961.932 -8466.963 339 17611.93 19897.06

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

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

**. summ MR spcv3\_yhat**

Variable | Obs Mean Std. Dev. Min Max

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

MR | 6,253 1.881017 3.268911 0 37

spcv3\_yhat | 6,253 1.905572 2.978399 3.64e-10 46.18576