. // Model SP.C.V.2

**. glm MR `subpart\_count\_lag\_1\_vars' `covariates' ib(freq).state ib(freq).time, family(poisson) link(log) vce(cl mineid) exposure(hours) iter(50) eform**

Iteration 0: log pseudolikelihood = -9204.9706

Iteration 1: log pseudolikelihood = -8601.5861

Iteration 2: log pseudolikelihood = -8596.3357

Iteration 3: log pseudolikelihood = -8596.1941

Iteration 4: log pseudolikelihood = -8596.1679

Iteration 5: log pseudolikelihood = -8596.1652

Iteration 6: log pseudolikelihood = -8596.1646

Iteration 7: log pseudolikelihood = -8596.1645

Iteration 8: log pseudolikelihood = -8596.1645

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,914

Scale parameter = 1

Deviance = 7617.463281 (1/df) Deviance = 1.288039

Pearson = 8440.201325 (1/df) Pearson = 1.427156

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

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

AIC = 2.857881

Log pseudolikelihood = -8596.164487 BIC = -44075.73

(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\_1lag | .9693876 .0342775 -0.88 0.379 .9044802 1.038953

sp48\_11\_1lag | .9646956 .0384219 -0.90 0.367 .8922543 1.043018

sp71\_701\_1lag | 3.221531 1.447671 2.60 0.009 1.335227 7.772661

sp75\_1001\_1\_1lag | .9344011 .1309409 -0.48 0.628 .7099888 1.229745

sp75\_1001\_1lag | .9657473 .2343218 -0.14 0.886 .6002529 1.553791

sp75\_1003\_1\_1lag | .7915587 .14491 -1.28 0.202 .5529098 1.133214

sp75\_1400\_1\_1lag | .9882464 .2274872 -0.05 0.959 .6293972 1.551693

sp75\_1401\_1\_1lag | .8493341 .2874605 -0.48 0.629 .4375081 1.648812

sp75\_1401\_1lag | .823622 .108512 -1.47 0.141 .6361834 1.066286

sp75\_1403\_11\_1lag | 1.041684 .3323261 0.13 0.898 .5574152 1.946672

sp75\_1404\_1\_1lag | .7414087 .2438445 -0.91 0.363 .3891374 1.412578

sp75\_1405\_1\_1lag | 1.359538 .1730021 2.41 0.016 1.059438 1.744646

sp75\_1431\_1lag | 1.147024 .2250888 0.70 0.485 .7807919 1.685039

sp75\_151\_1lag | 1.800681 .6163401 1.72 0.086 .9206319 3.521984

sp75\_1721\_1lag | .3999526 .3602188 -1.02 0.309 .0684496 2.336934

sp75\_1731\_1lag | 1.000605 .0024711 0.24 0.806 .9957736 1.00546

sp75\_1911\_1lag | .9977088 .0092008 -0.25 0.804 .9798376 1.015906

sp75\_211\_1lag | 1.007302 .0145252 0.50 0.614 .9792314 1.036177

sp75\_341\_1lag | 1.298131 .2360144 1.44 0.151 .9089932 1.853857

sp75\_506\_1\_1lag | 1.242704 .0874079 3.09 0.002 1.082672 1.426391

sp75\_510\_1\_1lag | 1.121019 .5203672 0.25 0.806 .4513288 2.784411

sp75\_511\_1\_1lag | .1624382 .0812109 -3.64 0.000 .060972 .4327589

sp75\_511\_1lag | 1.050287 .0402703 1.28 0.201 .9742518 1.132257

sp75\_512\_1\_1lag | 1.259114 .361974 0.80 0.423 .7167355 2.211928

sp75\_513\_1\_1lag | 1.03926 .0886379 0.45 0.652 .8792765 1.228351

sp75\_516\_1\_1lag | 1.005096 .1194989 0.04 0.966 .7961694 1.268847

sp75\_517\_1\_1lag | .9315978 .101417 -0.65 0.515 .7525991 1.15317

sp75\_518\_1\_1lag | 1.00134 .0162957 0.08 0.934 .9699049 1.033793

sp75\_523\_1\_1lag | .9740993 .0292292 -0.87 0.382 .9184633 1.033106

sp75\_600\_1\_1lag | .9125644 .1160621 -0.72 0.472 .7112228 1.170904

sp75\_601\_1\_1lag | 1.001812 .011098 0.16 0.870 .9802948 1.023802

sp75\_601\_1lag | 1.023189 .0144599 1.62 0.105 .9952371 1.051926

sp75\_700\_1\_1lag | .9056305 .1134445 -0.79 0.429 .7084751 1.157651

sp75\_701\_1\_1lag | .9346191 .0312707 -2.02 0.043 .8752961 .9979627

sp75\_701\_1lag | 1.016152 .0110473 1.47 0.141 .994729 1.038037

sp75\_702\_1\_1lag | 1.049404 .1363452 0.37 0.711 .8134845 1.353743

sp75\_703\_1\_1lag | .5453975 .1514594 -2.18 0.029 .3164685 .9399306

sp75\_705\_1\_1lag | .8280755 .0671839 -2.33 0.020 .7063334 .9708008

sp75\_801\_1lag | .9030823 .1844355 -0.50 0.618 .6051839 1.347619

sp75\_811\_1lag | 1.022989 .036579 0.64 0.525 .9537495 1.097254

sp75\_821\_1lag | 1.0808 .0609475 1.38 0.168 .9677102 1.207107

sp75\_831\_1lag | .6441702 .134287 -2.11 0.035 .4281095 .9692736

sp75\_901\_1lag | .9273202 .0665407 -1.05 0.293 .8056585 1.067354

sp75\_902\_1\_1lag | 1.309081 .1963431 1.80 0.073 .9756607 1.756445

sp77\_1111\_1lag | .9498517 .1240248 -0.39 0.694 .7353804 1.226873

sp77\_401\_1lag | 1.018277 .0570171 0.32 0.746 .9124389 1.136391

sp77\_403\_1\_1lag | 1.116889 .0947753 1.30 0.193 .9457576 1.318985

sp77\_411\_1lag | 1.05645 .4224809 0.14 0.891 .4824454 2.313395

sp77\_501\_1lag | .9680107 .0734882 -0.43 0.668 .8341799 1.123313

sp77\_502\_1\_1lag | 1.175033 .4564662 0.42 0.678 .5487605 2.516038

sp77\_503\_1\_1lag | .9689058 .1761524 -0.17 0.862 .6784666 1.383677

sp77\_506\_1\_1lag | 1.023305 .0315347 0.75 0.455 .963328 1.087017

sp77\_508\_1\_1lag | .8507828 .0992116 -1.39 0.166 .6769527 1.06925

sp77\_511\_1lag | .8777938 .1039884 -1.10 0.271 .695912 1.107212

sp77\_601\_1lag | 1.00892 .1777142 0.05 0.960 .7143703 1.424918

sp77\_606\_1\_1lag | .7283855 .1863828 -1.24 0.216 .4411149 1.202738

sp77\_700\_1\_1lag | 1.263143 .2194004 1.34 0.179 .898677 1.77542

sp77\_701\_1\_1lag | 1.06757 .1472908 0.47 0.636 .8146251 1.399057

sp77\_701\_1lag | 1.011775 .0277202 0.43 0.669 .9588777 1.067591

sp77\_704\_1\_1lag | .9988927 .1434813 -0.01 0.994 .7537928 1.323688

sp77\_800\_1\_1lag | 1.082493 .1731488 0.50 0.620 .7911741 1.481078

sp77\_801\_1\_1lag | .0000141 .0000142 -11.11 0.000 1.97e-06 .0001012

sp77\_801\_1lag | .9188939 .3546048 -0.22 0.827 .4313038 1.957706

sp77\_807\_1\_1lag | 1.195021 .3344122 0.64 0.524 .6905215 2.068112

sp77\_900\_1\_1lag | 1.126164 .2554855 0.52 0.600 .7219305 1.756743

sp77\_901\_1\_1lag | .6651227 .1792798 -1.51 0.130 .3921621 1.128075

sp77\_901\_1lag | 1.078735 .1117687 0.73 0.464 .8804828 1.321626

sp47\_42\_1lag | .7216115 .0837594 -2.81 0.005 .5747807 .9059511

sp75\_1100\_2\_1lag | 1.005572 .0052146 1.07 0.284 .9954029 1.015844

sp75\_1102\_1lag | .9500812 .0432229 -1.13 0.260 .8690329 1.038688

sp75\_1106\_2\_1lag | 1.062226 .0311386 2.06 0.039 1.002916 1.125044

sp75\_1400\_2\_1lag | 1.070695 .1201368 0.61 0.543 .8593244 1.334057

sp75\_1402\_2\_1lag | 1.009848 .3471487 0.03 0.977 .5148065 1.980924

sp75\_1432\_1lag | .9410903 .1034481 -0.55 0.581 .7586895 1.167343

sp75\_1600\_2\_1lag | .9959347 .0172107 -0.24 0.814 .9627672 1.030245

sp75\_1912\_1lag | .9664104 .059377 -0.56 0.578 .8567677 1.090084

sp75\_202\_1lag | 1.001391 .0017772 0.78 0.433 .9979143 1.004881

sp75\_212\_1lag | .9538014 .0212945 -2.12 0.034 .912965 .9964644

sp75\_312\_1lag | 1.036199 .0249061 1.48 0.139 .9885163 1.086182

sp75\_342\_1lag | 1.005836 .0058128 1.01 0.314 .9945075 1.017294

sp75\_352\_1lag | .9329996 .0305924 -2.12 0.034 .8749256 .9949284

sp75\_382\_1lag | 1.063408 .0384153 1.70 0.089 .9907189 1.14143

sp75\_512\_2\_1lag | 1.024302 .011761 2.09 0.037 1.001508 1.047615

sp75\_512\_1lag | 1.001159 .0030725 0.38 0.706 .9951554 1.0072

sp75\_516\_2\_1lag | 1.018225 .0189617 0.97 0.332 .9817306 1.056075

sp75\_523\_2\_1lag | 1.000041 .0201226 0.00 0.998 .9613688 1.040268

sp75\_601\_2\_1lag | .777127 .1489428 -1.32 0.188 .5337675 1.131441

sp75\_602\_1lag | 1.010491 .0310614 0.34 0.734 .9514095 1.073242

sp75\_701\_2\_1lag | .9720186 .052555 -0.52 0.600 .8742827 1.08068

sp75\_702\_1lag | .4599201 .2708421 -1.32 0.187 .1450169 1.458633

sp75\_703\_2\_1lag | .9066933 .1036476 -0.86 0.392 .7246966 1.134396

sp75\_705\_2\_1lag | 1.084754 .2152177 0.41 0.682 .735277 1.600338

sp75\_800\_2\_1lag | .6916788 .1864857 -1.37 0.172 .4077644 1.173275

sp75\_802\_1lag | 1.005067 .1328672 0.04 0.970 .7756551 1.302332

sp75\_803\_2\_1lag | 1.202624 .2312326 0.96 0.337 .8250237 1.753046

sp75\_812\_1lag | 1.125189 .13915 0.95 0.340 .8829969 1.433812

sp75\_832\_1lag | .6655904 .5211455 -0.52 0.603 .1434601 3.08804

sp75\_900\_2\_1lag | 1.041371 .1714429 0.25 0.805 .7541724 1.437939

sp75\_902\_2\_1lag | 1.008606 .0532185 0.16 0.871 .9095119 1.118497

sp75\_902\_1lag | .9994792 .0189849 -0.03 0.978 .9629537 1.03739

sp77\_1112\_1lag | 1.020773 .0660675 0.32 0.751 .8991599 1.158835

sp77\_1432\_1lag | .9698121 .2355705 -0.13 0.900 .6024596 1.561159

sp77\_1802\_1lag | .8454226 .1617825 -0.88 0.380 .5810125 1.230162

sp77\_202\_1lag | .978875 .0112144 -1.86 0.062 .9571402 1.001103

sp77\_402\_1lag | 1.024752 .0229783 1.09 0.276 .9806908 1.070793

sp77\_403\_2\_1lag | 2.660199 .9273369 2.81 0.005 1.343346 5.267933

sp77\_412\_1lag | 1.060173 .0769672 0.80 0.421 .9195612 1.222286

sp77\_502\_2\_1lag | .9332542 .0356332 -1.81 0.070 .8659637 1.005774

sp77\_502\_1lag | .992854 .0078475 -0.91 0.364 .9775916 1.008355

sp77\_512\_1lag | 1.004004 .0161554 0.25 0.804 .972834 1.036173

sp77\_602\_1lag | 1.481852 .2248567 2.59 0.010 1.100634 1.995108

sp77\_701\_2\_1lag | .9935622 .1035306 -0.06 0.951 .8100253 1.218685

sp77\_702\_1lag | .3662683 .1319874 -2.79 0.005 .1807436 .7422254

sp77\_800\_2\_1lag | 1.108394 .0853586 1.34 0.181 .9531078 1.288979

sp77\_802\_1lag | 1.179153 .2881319 0.67 0.500 .7304236 1.903555

sp77\_807\_2\_1lag | .9784717 .1310644 -0.16 0.871 .7525432 1.272228

sp77\_900\_2\_1lag | 1.128914 .1026854 1.33 0.183 .9445738 1.349229

sp77\_902\_2\_1lag | .9805157 .1889798 -0.10 0.919 .6720446 1.430576

sp77\_902\_1lag | 1.039556 .0919832 0.44 0.661 .874039 1.236417

sp47\_43\_1lag | 1.803971 .6096708 1.75 0.081 .9301588 3.498662

sp72\_503\_1lag | .9626197 .0434414 -0.84 0.399 .881133 1.051642

sp75\_1106\_3\_1lag | 1.01086 .0111895 0.98 0.329 .9891647 1.03303

sp75\_1400\_3\_1lag | 1.052064 .0357551 1.49 0.135 .9842678 1.124529

sp75\_1403\_3\_1lag | .9824162 .1426864 -0.12 0.903 .739038 1.305943

sp75\_1433\_1lag | 1.011148 .0618681 0.18 0.856 .8968776 1.139978

sp75\_153\_1lag | 1.156973 .1733056 0.97 0.330 .8626203 1.551767

sp75\_1903\_1lag | .9724024 .0221607 -1.23 0.219 .929924 1.016821

sp75\_1913\_1lag | 1.013164 .037265 0.36 0.722 .9426964 1.088899

sp75\_503\_1lag | .9969671 .0027798 -1.09 0.276 .9915336 1.00243

sp75\_513\_1lag | .964499 .0499842 -0.70 0.485 .8713429 1.067614

sp75\_523\_1lag | .9665201 .025355 -1.30 0.194 .9180811 1.017515

sp75\_601\_3\_1lag | .9215732 .1434245 -0.52 0.600 .6792933 1.250266

sp75\_603\_1lag | .9935964 .048263 -0.13 0.895 .9033659 1.092839

sp75\_701\_3\_1lag | 1.100527 .0504517 2.09 0.037 1.005955 1.203989

sp75\_703\_3\_1lag | 1.125091 .0821494 1.61 0.106 .9750717 1.298192

sp75\_703\_1lag | 1.012334 .0250449 0.50 0.620 .9644181 1.062631

sp75\_705\_3\_1lag | 1.799427 .2958063 3.57 0.000 1.303785 2.483491

sp75\_800\_3\_1lag | 1.007958 .0933411 0.09 0.932 .840655 1.208558

sp75\_803\_1lag | .9263818 .071469 -0.99 0.322 .7963813 1.077603

sp75\_900\_3\_1lag | 1.093518 .0601061 1.63 0.104 .9818361 1.217904

sp75\_903\_1lag | 1.029641 .0332814 0.90 0.366 .9664336 1.096982

sp77\_103\_1lag | .5532023 .2279688 -1.44 0.151 .246668 1.240667

sp77\_1103\_1lag | .9988758 .0166663 -0.07 0.946 .9667387 1.032081

sp77\_1403\_1lag | 1.017565 .1092652 0.16 0.871 .8244438 1.255924

sp77\_1433\_1lag | 1.11064 .1448456 0.80 0.421 .8601269 1.434114

sp77\_203\_1lag | 1.094093 .1271858 0.77 0.439 .8711724 1.374056

sp77\_403\_1lag | 1.448838 .2139068 2.51 0.012 1.084796 1.935046

sp77\_413\_1lag | .9356424 .0996143 -0.62 0.532 .7594264 1.152747

sp77\_503\_1lag | 1.170232 .1171635 1.57 0.116 .9617226 1.423948

sp77\_513\_1lag | 1.002455 .0267425 0.09 0.927 .9513868 1.056263

sp77\_603\_1lag | 1.318574 .2336471 1.56 0.119 .9316963 1.866099

sp77\_701\_3\_1lag | .7676312 .2410325 -0.84 0.400 .4148389 1.420449

sp77\_703\_1lag | 1.035863 .2775001 0.13 0.895 .6127336 1.751189

sp77\_803\_1lag | 1.013436 .352394 0.04 0.969 .5126425 2.003447

sp77\_807\_3\_1lag | 1.106545 .1531361 0.73 0.464 .8436652 1.451336

sp77\_902\_3\_1lag | 1.07421 .2085751 0.37 0.712 .7342008 1.571678

sp77\_903\_1lag | .9671966 .1723863 -0.19 0.852 .6820286 1.371598

sp47\_44\_1lag | 1.004332 .0441258 0.10 0.922 .9214657 1.094649

sp48\_24\_1lag | .0638868 .0128138 -13.71 0.000 .0431207 .0946535

sp48\_4\_1lag | 2.159431 .2736295 6.08 0.000 1.684537 2.768205

sp75\_1103\_4\_1lag | 1.015239 .0107077 1.43 0.152 .9944674 1.036444

sp75\_1104\_1lag | 1.004431 .0286111 0.16 0.877 .9498908 1.062102

sp75\_1106\_4\_1lag | 1.019298 .0743549 0.26 0.793 .8835034 1.175963

sp75\_1107\_14\_1lag | 1.063729 .3562843 0.18 0.854 .5517345 2.050839

sp75\_1400\_4\_1lag | .9933872 .0625921 -0.11 0.916 .8779816 1.123962

sp75\_1403\_4\_1lag | 1.610592 .2866108 2.68 0.007 1.136347 2.282758

sp75\_1404\_1lag | .752054 .1588416 -1.35 0.177 .4971259 1.13771

sp75\_1434\_1lag | .9044829 .0789003 -1.15 0.250 .7623385 1.073131

sp75\_1914\_1lag | 1.001063 .0043128 0.25 0.805 .9926453 1.009551

sp75\_214\_1lag | .9959464 .0291572 -0.14 0.890 .940408 1.054765

sp75\_324\_1lag | 1.010889 .0426229 0.26 0.797 .9307082 1.097977

sp75\_344\_1lag | 1.047751 .0712379 0.69 0.493 .9170308 1.197106

sp75\_504\_1lag | .9856247 .0801511 -0.18 0.859 .8404112 1.15593

sp75\_514\_1lag | 1.018089 .0130066 1.40 0.161 .992913 1.043903

sp75\_604\_1lag | 1.019598 .0051053 3.88 0.000 1.009641 1.029654

sp75\_701\_4\_1lag | 1.477791 .2141011 2.70 0.007 1.112479 1.963063

sp75\_703\_4\_1lag | 1.51e-06 1.60e-06 -12.67 0.000 1.90e-07 .000012

sp75\_704\_1lag | .8701551 .1739511 -0.70 0.487 .5880775 1.287534

sp75\_800\_4\_1lag | 1.056537 .062282 0.93 0.351 .9412543 1.185939

sp75\_804\_1lag | .985594 .0418583 -0.34 0.733 .906875 1.071146

sp75\_814\_1lag | .963417 .0686312 -0.52 0.601 .8378706 1.107775

sp75\_834\_1lag | 2.14e-06 2.73e-06 -10.25 0.000 1.77e-07 .000026

sp75\_900\_4\_1lag | .971709 .0174172 -1.60 0.109 .9381645 1.006453

sp75\_902\_4\_1lag | 1.019077 .0395429 0.49 0.626 .9444477 1.099602

sp75\_904\_1lag | .9958297 .0083928 -0.50 0.620 .9795152 1.012416

sp77\_104\_1lag | .7323134 .1594029 -1.43 0.152 .4779866 1.121962

sp77\_1104\_1lag | 1.005865 .0062226 0.95 0.345 .9937423 1.018135

sp77\_1434\_1lag | 1.053915 .136565 0.41 0.685 .8175385 1.358637

sp77\_204\_1lag | .9513278 .0251237 -1.89 0.059 .903339 1.001866

sp77\_314\_1lag | .2906285 .1094507 -3.28 0.001 .1389235 .607996

sp77\_404\_1lag | .9861913 .0080675 -1.70 0.089 .9705054 1.002131

sp77\_504\_1lag | .9780715 .030853 -0.70 0.482 .9194322 1.040451

sp77\_514\_1lag | 1.06287 .1115703 0.58 0.561 .8652246 1.305664

sp77\_604\_1lag | 1.060671 .0988138 0.63 0.527 .8836527 1.273152

sp77\_701\_4\_1lag | 1.070625 .138884 0.53 0.599 .8302661 1.380566

sp77\_704\_1lag | .8646608 .2965929 -0.42 0.672 .4414379 1.693643

sp77\_804\_1lag | .5655247 .3577821 -0.90 0.368 .163657 1.954198

sp77\_904\_1lag | .9855746 .0264565 -0.54 0.588 .9350613 1.038817

sp48\_25\_1lag | .9698124 .0794859 -0.37 0.708 .8258918 1.138813

sp48\_5\_1lag | .9885024 .1153618 -0.10 0.921 .7863927 1.242556

sp75\_1106\_5\_1lag | 1.037178 .0424092 0.89 0.372 .9573005 1.12372

sp75\_1403\_5\_1lag | .9969381 .0066245 -0.46 0.644 .9840385 1.010007

sp75\_1405\_1lag | .9916511 .0125234 -0.66 0.507 .967407 1.016503

sp75\_1435\_1lag | .9879736 .1427606 -0.08 0.933 .7443001 1.311422

sp75\_155\_1lag | 1.068061 .1596497 0.44 0.660 .7968225 1.431629

sp75\_1725\_1lag | 1.003139 .0034767 0.90 0.366 .9963477 1.009976

sp75\_1915\_1lag | 1.003175 .0827472 0.04 0.969 .8534243 1.179202

sp75\_505\_1lag | 1.085414 .1392642 0.64 0.523 .8440765 1.395754

sp75\_515\_1lag | .9729166 .009577 -2.79 0.005 .954326 .9918693

sp75\_605\_1lag | 1.002546 .0155503 0.16 0.870 .9725269 1.033492

sp75\_701\_5\_1lag | .904147 .0607395 -1.50 0.134 .7926043 1.031387

sp75\_705\_1lag | 1.265818 .1925205 1.55 0.121 .9395296 1.705422

sp75\_805\_1lag | 1.164426 .1237891 1.43 0.152 .9454126 1.434176

sp75\_815\_1lag | 1.300956 .0917774 3.73 0.000 1.132957 1.493865

sp75\_825\_1lag | 1.092978 .1216627 0.80 0.424 .8787419 1.359443

sp75\_905\_1lag | .9376623 .2149434 -0.28 0.779 .5983052 1.469502

sp77\_1605\_1lag | .98497 .0077423 -1.93 0.054 .9699117 1.000262

sp77\_1915\_1lag | 1.011571 .0955449 0.12 0.903 .8406177 1.21729

sp77\_205\_1lag | .9971759 .0058764 -0.48 0.631 .9857246 1.00876

sp77\_305\_1lag | 2.797959 1.471826 1.96 0.050 .9978816 7.845195

sp77\_315\_1lag | .6838501 .347557 -0.75 0.455 .2525516 1.851705

sp77\_405\_1lag | .9943766 .084427 -0.07 0.947 .841938 1.174415

sp77\_505\_1lag | .9943955 .0206793 -0.27 0.787 .9546797 1.035764

sp77\_515\_1lag | .7340941 .1515091 -1.50 0.134 .4898611 1.100096

sp77\_605\_1lag | .6004317 .2142548 -1.43 0.153 .2983496 1.208375

sp77\_705\_1lag | 1.104154 .0708587 1.54 0.123 .9736532 1.252147

sp77\_805\_1lag | 1.067207 .2540606 0.27 0.785 .6692845 1.701715

sp48\_26\_1lag | 1.098653 .0579378 1.78 0.074 .9907683 1.218285

sp48\_6\_1lag | 1.001116 .0515948 0.02 0.983 .9049316 1.107524

sp75\_1106\_6\_1lag | .6103114 .2084109 -1.45 0.148 .3125221 1.191852

sp75\_1106\_1lag | 1.083759 .088643 0.98 0.325 .9232324 1.272197

sp75\_1403\_6\_1lag | .9955348 .0059225 -0.75 0.452 .9839944 1.007211

sp75\_1436\_1lag | 1.471136 .5204472 1.09 0.275 .7353957 2.94296

sp75\_156\_1lag | 1.117137 .2466674 0.50 0.616 .7247002 1.722084

sp75\_1712\_6\_1lag | .9997966 .0234456 -0.01 0.993 .9548841 1.046822

sp75\_1726\_1lag | 1.056933 .0767442 0.76 0.446 .91673 1.218578

sp75\_506\_1lag | .9827143 .0338448 -0.51 0.613 .918569 1.051339

sp75\_516\_1lag | .9953639 .0129035 -0.36 0.720 .9703921 1.020978

sp75\_606\_1lag | .9881288 .0068068 -1.73 0.083 .9748773 1.00156

sp75\_706\_1lag | .9350459 .0463708 -1.35 0.176 .8484381 1.030494

sp75\_806\_1lag | 1.219862 .2774081 0.87 0.382 .7811589 1.904943

sp75\_816\_1lag | .9871753 .0247477 -0.51 0.607 .9398432 1.036891

sp77\_1106\_1lag | 1.022945 .5679843 0.04 0.967 .3445302 3.037226

sp77\_1606\_1lag | 1.029616 .0124806 2.41 0.016 1.005443 1.05437

sp77\_1906\_1lag | .9186401 .1627447 -0.48 0.632 .6491544 1.299998

sp77\_1916\_1lag | 1.340923 .1625773 2.42 0.016 1.057309 1.700615

sp77\_206\_1lag | 1.000988 .0350468 0.03 0.977 .9346014 1.07209

sp77\_216\_1lag | 1.029833 .0298201 1.02 0.310 .9730138 1.089969

sp77\_506\_1lag | .9622206 .0426963 -0.87 0.385 .882073 1.049651

sp77\_516\_1lag | .9897386 .009582 -1.07 0.287 .9711352 1.008698

sp77\_606\_1lag | 1.581188 .1894153 3.82 0.000 1.250304 1.999639

sp77\_906\_1lag | .147008 .0695409 -4.05 0.000 .0581684 .3715305

sp48\_27\_1lag | 1.087685 .0755168 1.21 0.226 .9493032 1.246238

sp48\_7\_1lag | 1.083702 .0452671 1.92 0.054 .998515 1.176157

sp75\_1403\_7\_1lag | .9464697 .0331512 -1.57 0.116 .8836746 1.013727

sp75\_1437\_1lag | .9829825 .1578023 -0.11 0.915 .717627 1.346458

sp75\_1727\_1lag | .9408091 .4133212 -0.14 0.890 .3976923 2.225645

sp75\_337\_1lag | 1.031365 .0311266 1.02 0.306 .9721271 1.094212

sp75\_507\_1lag | 1.010121 .0433611 0.23 0.815 .928612 1.098785

sp75\_517\_1lag | .9989309 .003159 -0.34 0.735 .9927584 1.005142

sp75\_607\_1lag | 1.000915 .0386175 0.02 0.981 .9280176 1.07954

sp75\_807\_1lag | 1.016328 .0078983 2.08 0.037 1.000965 1.031927

sp75\_827\_1lag | 1.532525 .1925704 3.40 0.001 1.197979 1.960495

sp75\_907\_1lag | .9965383 .0660828 -0.05 0.958 .8750821 1.134852

sp77\_1437\_1lag | .792135 .1051941 -1.75 0.079 .6106061 1.027631

sp77\_207\_1lag | 1.042242 .023322 1.85 0.064 .9975194 1.088969

sp77\_507\_1lag | .9592777 .081878 -0.49 0.626 .8115047 1.13396

sp77\_807\_1lag | .8564629 .1018844 -1.30 0.193 .6783441 1.081352

sp48\_28\_1lag | .9178898 .0731055 -1.08 0.282 .7852292 1.072963

sp48\_8\_1lag | 1.056169 .0685069 0.84 0.399 .9300829 1.199349

sp75\_1403\_8\_1lag | .9916256 .0062774 -1.33 0.184 .9793982 1.004006

sp75\_1438\_1lag | 8.89266 3.700703 5.25 0.000 3.933707 20.10302

sp75\_1728\_1lag | 1.212025 .2879732 0.81 0.418 .7607971 1.930875

sp75\_208\_1lag | .9966286 .0142661 -0.24 0.813 .9690562 1.024986

sp75\_518\_1lag | 1.001476 .0094459 0.16 0.876 .9831321 1.020161

sp75\_705\_8\_1lag | 1.146754 .1786046 0.88 0.379 .8450788 1.55612

sp75\_808\_1lag | .9883871 .0652802 -0.18 0.860 .8683756 1.124984

sp75\_818\_1lag | 1.076429 .0953882 0.83 0.406 .9048063 1.280604

sp77\_1438\_1lag | .3972847 .313293 -1.17 0.242 .0846947 1.863576

sp77\_208\_1lag | 1.00508 .0153133 0.33 0.739 .9755105 1.035547

sp77\_408\_1lag | .9541572 .072586 -0.62 0.537 .8219892 1.107577

sp77\_508\_1lag | .864302 .06604 -1.91 0.056 .7440917 1.003933

sp77\_704\_8\_1lag | .8892994 .1456728 -0.72 0.474 .6450834 1.225971

sp77\_808\_1lag | 1.280097 .3129176 1.01 0.312 .7928083 2.066892

sp75\_1403\_9\_1lag | .9639141 .0228373 -1.55 0.121 .9201772 1.00973

sp75\_1729\_1lag | 1.141234 .1479336 1.02 0.308 .885191 1.471339

sp75\_1909\_1lag | 1.008403 .0043199 1.95 0.051 .9999721 1.016906

sp75\_519\_1lag | .7854364 .2059383 -0.92 0.357 .4698177 1.313085

sp75\_809\_1lag | .9749503 .0289171 -0.86 0.392 .9198897 1.033307

sp75\_819\_1lag | 2.01806 .6532953 2.17 0.030 1.069989 3.806175

sp77\_309\_1lag | 1.472304 .3741151 1.52 0.128 .8947582 2.422642

sp77\_409\_1lag | 1.005063 .1394906 0.04 0.971 .7656967 1.319258

sp77\_509\_1lag | .9502586 .0405332 -1.20 0.232 .8740451 1.033117

sp77\_704\_9\_1lag | .611206 .2358705 -1.28 0.202 .2868801 1.302191

sp77\_809\_1lag | .8540935 .0449011 -3.00 0.003 .770471 .9467919

sp72\_610\_1lag | .9243854 .2160198 -0.34 0.737 .5847034 1.461405

sp72\_620\_1lag | 1.405504 .1870149 2.56 0.011 1.082859 1.824282

sp72\_630\_1lag | 1.012646 .0072762 1.75 0.080 .9984851 1.027008

sp75\_100\_1lag | 1.064931 .107823 0.62 0.534 .8732493 1.298687

sp75\_1101\_20\_1lag | .8577474 .1292291 -1.02 0.308 .6384348 1.152398

sp75\_1400\_1lag | 1.005702 .0353149 0.16 0.871 .9388142 1.077355

sp75\_1403\_10\_1lag | .9894295 .0112328 -0.94 0.349 .9676567 1.011692

sp75\_150\_1lag | 1.487188 .330119 1.79 0.074 .962543 2.297797

sp75\_160\_1lag | .8757797 .2110534 -0.55 0.582 .5460904 1.404511

sp75\_1712\_10\_1lag | .852438 .0503225 -2.70 0.007 .7592999 .9570007

sp75\_1720\_1lag | 1.049676 .0336978 1.51 0.131 .9856646 1.117845

sp75\_1730\_1lag | .9452584 .0374422 -1.42 0.155 .8746494 1.021568

sp75\_1910\_1lag | .9950069 .0068089 -0.73 0.464 .9817507 1.008442

sp75\_320\_1lag | .9631737 .0196318 -1.84 0.066 .9254545 1.00243

sp75\_340\_1lag | 1.00704 .0094882 0.74 0.457 .9886138 1.025809

sp75\_520\_1lag | 1.025292 .0221447 1.16 0.248 .9827947 1.069626

sp75\_600\_1lag | .9604997 .2257427 -0.17 0.864 .6059579 1.522482

sp75\_700\_1lag | .9679884 .0280146 -1.12 0.261 .914609 1.024483

sp75\_800\_1lag | 1.045922 .0765155 0.61 0.539 .90621 1.207174

sp75\_810\_1lag | 1.098924 .0365629 2.84 0.005 1.029549 1.172974

sp75\_820\_1lag | 1.019397 .0953046 0.21 0.837 .8487178 1.224399

sp75\_900\_1lag | .9850366 .020591 -0.72 0.471 .9454945 1.026232

sp77\_1710\_1lag | .9679004 .0193 -1.64 0.102 .9308028 1.006477

sp77\_200\_1lag | 1.00068 .0100863 0.07 0.946 .9811047 1.020645

sp77\_210\_1lag | 1.007659 .0573756 0.13 0.893 .9012528 1.126628

sp77\_400\_1lag | 1.013318 .0076646 1.75 0.080 .9984069 1.028453

sp77\_410\_1lag | 1.018679 .0130022 1.45 0.147 .9935113 1.044484

sp77\_500\_1lag | .9124013 .1112676 -0.75 0.452 .7184254 1.158751

sp77\_510\_1lag | .9418448 .1767813 -0.32 0.750 .6519457 1.360652

sp77\_600\_1lag | 1.216172 .1592303 1.49 0.135 .9409124 1.571956

sp77\_700\_1lag | .8380039 .0779091 -1.90 0.057 .6984091 1.0055

sp77\_800\_1lag | 1.157175 .2281565 0.74 0.459 .7862679 1.703052

sp77\_810\_1lag | 1.083729 .1407446 0.62 0.536 .8401844 1.39787

sp77\_900\_1lag | .8501726 .1115902 -1.24 0.216 .6573277 1.099594

mine\_time | .9949908 .0073604 -0.68 0.497 .9806687 1.009522

onsite\_insp\_hours | .9998497 .0000487 -3.09 0.002 .9997543 .9999451

|

state |

1 | 1.279283 .1259003 2.50 0.012 1.054862 1.551448

2 | 2.101928 .1550655 10.07 0.000 1.818955 2.428921

3 | .7391778 .1366201 -1.64 0.102 .5145456 1.061876

4 | 1.046075 .0931175 0.51 0.613 .8786017 1.24547

5 | .8748483 .1492667 -0.78 0.433 .6261821 1.222263

6 | .9650912 .0547804 -0.63 0.531 .8634805 1.078659

7 | 1.023694 .2701157 0.09 0.929 .6103358 1.717004

8 | 1.033749 .1078671 0.32 0.750 .8425508 1.268336

9 | .8911565 .0609754 -1.68 0.092 .7793138 1.01905

10 | 1.135003 .125764 1.14 0.253 .9134389 1.410309

11 | .7999069 .2103291 -0.85 0.396 .4777743 1.339233

12 | 1.019447 .0900762 0.22 0.827 .8573419 1.212202

13 | 1.381196 .1996202 2.23 0.025 1.04048 1.833483

14 | .6300938 .0872199 -3.34 0.001 .4803732 .8264787

15 | .7164507 .0475607 -5.02 0.000 .6290431 .816004

17 | 1.278124 .1440623 2.18 0.029 1.02478 1.594098

|

time |

2000 | 1.060562 .0650436 0.96 0.338 .9404432 1.196024

2002 | .9538542 .0607759 -0.74 0.458 .8418732 1.08073

2003 | .8349732 .0561513 -2.68 0.007 .7318631 .9526102

2004 | .8896682 .0577764 -1.80 0.072 .7833389 1.01043

2005 | .7637312 .0530304 -3.88 0.000 .6665558 .8750735

2006 | .7170772 .0565873 -4.21 0.000 .6143195 .8370233

2007 | .6725041 .0537071 -4.97 0.000 .5750649 .7864534

2008 | .6444665 .0507814 -5.58 0.000 .5522415 .7520932

2009 | .5661184 .0453543 -7.10 0.000 .4838533 .6623702

2010 | .5295595 .0436262 -7.72 0.000 .4505999 .6223553

2011 | .5330228 .0451882 -7.42 0.000 .4514225 .6293734

2012 | .5591922 .0481839 -6.75 0.000 .4722976 .662074

2013 | .5108956 .0487751 -7.03 0.000 .4237094 .616022

2014 | .4756026 .0456116 -7.75 0.000 .3941047 .5739537

2015 | .4902832 .0538928 -6.48 0.000 .3952587 .6081527

|

\_cons | .0000165 1.02e-06 -177.75 0.000 .0000146 .0000186

ln(hours) | 1 (exposure)

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

**. estat gof**

Deviance goodness-of-fit = 7617.463

Prob > chi2(5914) = 0.0000

Pearson goodness-of-fit = 8440.244

Prob > chi2(5914) = 0.0000

**. glm MR `subpart\_count\_lag\_1\_vars' `covariates' ib(freq).state ib(freq).time, family(nbinomial) link(log) vce(cl mineid) exposure(hours) iter(50) eform**

Iteration 0: log pseudolikelihood = -9164.1218

Iteration 1: log pseudolikelihood = -8999.2834

Iteration 2: log pseudolikelihood = -8997.6526

Iteration 3: log pseudolikelihood = -8997.5571

Iteration 4: log pseudolikelihood = -8997.5512

Iteration 5: log pseudolikelihood = -8997.55

Iteration 6: log pseudolikelihood = -8997.5497

Iteration 7: log pseudolikelihood = -8997.5496

Iteration 8: log pseudolikelihood = -8997.5496

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,904

Scale parameter = 1

Deviance = 3681.336789 (1/df) Deviance = .6235327

Pearson = 3914.779446 (1/df) Pearson = .6630724

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

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

AIC = 2.989461

Log pseudolikelihood = -8997.549569 BIC = -47924.44

(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\_1lag | .9705093 .040862 -0.71 0.477 .8936366 1.053995

sp48\_11\_1lag | 1.035297 .0566247 0.63 0.526 .9300563 1.152446

sp71\_701\_1lag | 2.985934 1.669891 1.96 0.050 .9978004 8.935456

sp75\_1001\_1\_1lag | .982156 .1683468 -0.11 0.916 .7019076 1.374298

sp75\_1001\_1lag | .9147109 .35248 -0.23 0.817 .4298104 1.946663

sp75\_1003\_1\_1lag | .8080123 .1685709 -1.02 0.307 .5368299 1.216184

sp75\_1400\_1\_1lag | 1.027639 .2832779 0.10 0.921 .5986864 1.763933

sp75\_1401\_1\_1lag | .6033626 .1982486 -1.54 0.124 .3168813 1.148842

sp75\_1401\_1lag | .8347192 .1484352 -1.02 0.310 .5890799 1.182787

sp75\_1403\_11\_1lag | .9665427 .3628072 -0.09 0.928 .4631365 2.017126

sp75\_1404\_1\_1lag | .6719269 .2012198 -1.33 0.184 .3736074 1.20845

sp75\_1405\_1\_1lag | 1.61314 .4864397 1.59 0.113 .8932922 2.913067

sp75\_1431\_1lag | 1.159646 .2995027 0.57 0.566 .6990129 1.923827

sp75\_151\_1lag | 2.176324 .867834 1.95 0.051 .9960869 4.754993

sp75\_1721\_1lag | .4030753 .3533359 -1.04 0.300 .072314 2.246724

sp75\_1731\_1lag | .9964494 .0028667 -1.24 0.216 .9908466 1.002084

sp75\_1911\_1lag | .9990003 .011298 -0.09 0.930 .9771002 1.021391

sp75\_211\_1lag | 1.004325 .015676 0.28 0.782 .9740657 1.035524

sp75\_341\_1lag | 1.077311 .2671427 0.30 0.764 .6626236 1.751519

sp75\_506\_1\_1lag | 1.295796 .0896325 3.75 0.000 1.131508 1.483938

sp75\_510\_1\_1lag | 1.338061 .6942233 0.56 0.575 .4840035 3.699159

sp75\_511\_1\_1lag | .2067564 .1014701 -3.21 0.001 .0790158 .5410087

sp75\_511\_1lag | 1.037867 .0456929 0.84 0.399 .9520658 1.131401

sp75\_512\_1\_1lag | 1.147396 .3011942 0.52 0.600 .6859163 1.919357

sp75\_513\_1\_1lag | 1.11886 .1046574 1.20 0.230 .9314398 1.343992

sp75\_516\_1\_1lag | .9712787 .1544665 -0.18 0.855 .7111705 1.32652

sp75\_517\_1\_1lag | .9544901 .1341218 -0.33 0.740 .7247086 1.257128

sp75\_518\_1\_1lag | 1.014106 .0171824 0.83 0.408 .980982 1.048348

sp75\_523\_1\_1lag | .9652681 .0292751 -1.17 0.244 .9095621 1.024386

sp75\_600\_1\_1lag | 1.130214 .2470356 0.56 0.575 .7363939 1.734648

sp75\_601\_1\_1lag | .9903002 .0133178 -0.72 0.469 .9645388 1.01675

sp75\_601\_1lag | 1.02291 .0167895 1.38 0.168 .9905269 1.056352

sp75\_700\_1\_1lag | .6901439 .0925992 -2.76 0.006 .5305554 .8977358

sp75\_701\_1\_1lag | .9877827 .0485746 -0.25 0.803 .8970222 1.087726

sp75\_701\_1lag | 1.017318 .0114254 1.53 0.126 .9951688 1.039959

sp75\_702\_1\_1lag | 1.170676 .1528893 1.21 0.228 .9062972 1.512178

sp75\_703\_1\_1lag | .8847385 .3457601 -0.31 0.754 .4113023 1.903131

sp75\_705\_1\_1lag | .9679222 .1291684 -0.24 0.807 .7451579 1.257282

sp75\_801\_1lag | .7947166 .1777676 -1.03 0.304 .5126367 1.232012

sp75\_811\_1lag | 1.045505 .0439365 1.06 0.290 .9628424 1.135265

sp75\_821\_1lag | 1.056921 .0637856 0.92 0.359 .9390143 1.189633

sp75\_831\_1lag | .6976462 .1302505 -1.93 0.054 .4838558 1.005899

sp75\_901\_1lag | .9667709 .0822181 -0.40 0.691 .8183403 1.142124

sp75\_902\_1\_1lag | 1.305725 .205816 1.69 0.091 .9586946 1.778374

sp77\_1111\_1lag | .8724842 .1473033 -0.81 0.419 .6266823 1.214696

sp77\_401\_1lag | .9360798 .0631378 -0.98 0.327 .8201628 1.06838

sp77\_403\_1\_1lag | 1.057794 .1123934 0.53 0.597 .8589317 1.302697

sp77\_411\_1lag | .6684883 .3802655 -0.71 0.479 .2192265 2.038424

sp77\_501\_1lag | .9834755 .0871528 -0.19 0.851 .8266706 1.170024

sp77\_502\_1\_1lag | 1.278672 .6515361 0.48 0.629 .4710172 3.471214

sp77\_503\_1\_1lag | 1.300649 .362586 0.94 0.346 .7531271 2.24622

sp77\_506\_1\_1lag | 1.041447 .0404283 1.05 0.295 .9651487 1.123778

sp77\_508\_1\_1lag | .8571017 .1156923 -1.14 0.253 .6578645 1.116679

sp77\_511\_1lag | .7062354 .0943684 -2.60 0.009 .5435137 .9176741

sp77\_601\_1lag | .8747035 .1537167 -0.76 0.446 .6198325 1.234376

sp77\_606\_1\_1lag | .6266586 .1923496 -1.52 0.128 .3433674 1.143676

sp77\_700\_1\_1lag | 1.379217 .3031137 1.46 0.143 .8965247 2.121794

sp77\_701\_1\_1lag | 1.09689 .1673569 0.61 0.544 .8133771 1.479225

sp77\_701\_1lag | 1.011364 .0323025 0.35 0.724 .9499928 1.076699

sp77\_704\_1\_1lag | 1.016639 .1650367 0.10 0.919 .739582 1.397485

sp77\_800\_1\_1lag | 1.110838 .2156264 0.54 0.588 .7593159 1.625094

sp77\_801\_1\_1lag | 5.11e-06 5.14e-06 -12.13 0.000 7.14e-07 .0000366

sp77\_801\_1lag | .6463056 .3975476 -0.71 0.478 .1935786 2.157837

sp77\_807\_1\_1lag | 1.012531 .269018 0.05 0.963 .601525 1.704366

sp77\_900\_1\_1lag | 1.192988 .21774 0.97 0.334 .8342149 1.706061

sp77\_901\_1\_1lag | .489419 .1647208 -2.12 0.034 .2530446 .9465957

sp77\_901\_1lag | 1.065135 .1497237 0.45 0.653 .8086361 1.402995

sp47\_42\_1lag | .6594521 .0927028 -2.96 0.003 .5006395 .8686431

sp75\_1100\_2\_1lag | 1.011323 .0063002 1.81 0.071 .9990496 1.023746

sp75\_1102\_1lag | .9702138 .049821 -0.59 0.556 .8773196 1.072944

sp75\_1106\_2\_1lag | .9935727 .0350274 -0.18 0.855 .9272384 1.064653

sp75\_1400\_2\_1lag | 1.128083 .1513569 0.90 0.369 .8672287 1.467399

sp75\_1402\_2\_1lag | .6570743 .3334291 -0.83 0.408 .2430393 1.776448

sp75\_1432\_1lag | 1.006511 .1471889 0.04 0.965 .7556859 1.340588

sp75\_1600\_2\_1lag | .9857547 .0217573 -0.65 0.516 .9440204 1.029334

sp75\_1912\_1lag | .9924173 .0781288 -0.10 0.923 .8505166 1.157993

sp75\_202\_1lag | 1.002356 .0023545 1.00 0.317 .9977515 1.006981

sp75\_212\_1lag | .9197657 .0258276 -2.98 0.003 .8705124 .9718058

sp75\_312\_1lag | 1.029706 .0274354 1.10 0.272 .9773134 1.084907

sp75\_342\_1lag | 1.001071 .0063178 0.17 0.865 .9887641 1.01353

sp75\_352\_1lag | .9182321 .0345222 -2.27 0.023 .8530026 .9884498

sp75\_382\_1lag | 1.049212 .0522367 0.96 0.335 .9516665 1.156756

sp75\_512\_2\_1lag | 1.020862 .0152052 1.39 0.166 .9914911 1.051103

sp75\_512\_1lag | 1.004041 .0037098 1.09 0.275 .9967961 1.011338

sp75\_516\_2\_1lag | 1.009229 .0230302 0.40 0.687 .9650851 1.055392

sp75\_523\_2\_1lag | 1.035258 .0260419 1.38 0.168 .9854544 1.087578

sp75\_601\_2\_1lag | .7493669 .1486953 -1.45 0.146 .5079165 1.105597

sp75\_602\_1lag | .9904407 .0338332 -0.28 0.779 .9263 1.059023

sp75\_701\_2\_1lag | .9796189 .0644447 -0.31 0.754 .8611135 1.114433

sp75\_702\_1lag | .4341694 .2801776 -1.29 0.196 .122564 1.537997

sp75\_703\_2\_1lag | .8769731 .1114373 -1.03 0.302 .6836343 1.12499

sp75\_705\_2\_1lag | 1.137597 .2478732 0.59 0.554 .7421959 1.743647

sp75\_800\_2\_1lag | .5021712 .1309433 -2.64 0.008 .3012294 .8371558

sp75\_802\_1lag | .7613247 .0975845 -2.13 0.033 .5921957 .9787564

sp75\_803\_2\_1lag | 1.242251 .2737435 0.98 0.325 .8065622 1.91329

sp75\_812\_1lag | 1.064253 .218568 0.30 0.762 .7115928 1.591688

sp75\_832\_1lag | .5719769 .4368142 -0.73 0.464 .1280332 2.555255

sp75\_900\_2\_1lag | .8292561 .1928154 -0.81 0.421 .5257395 1.307997

sp75\_902\_2\_1lag | 1.084307 .0694155 1.26 0.206 .9564447 1.229263

sp75\_902\_1lag | 1.017756 .02251 0.80 0.426 .9745803 1.062845

sp77\_1112\_1lag | .9687389 .0830266 -0.37 0.711 .8189432 1.145934

sp77\_1432\_1lag | .9547638 .2449177 -0.18 0.857 .5774897 1.578511

sp77\_1802\_1lag | .8696391 .2961857 -0.41 0.682 .4461007 1.695295

sp77\_202\_1lag | .9703716 .0144336 -2.02 0.043 .9424908 .9990773

sp77\_402\_1lag | 1.036075 .0338871 1.08 0.279 .9717412 1.104667

sp77\_403\_2\_1lag | 2.284208 .9998353 1.89 0.059 .9686143 5.386672

sp77\_412\_1lag | 1.104612 .089663 1.23 0.220 .9421423 1.295099

sp77\_502\_2\_1lag | .9778826 .0485377 -0.45 0.652 .8872314 1.077796

sp77\_502\_1lag | 1.001218 .0104688 0.12 0.907 .9809085 1.021948

sp77\_512\_1lag | .9846383 .0203164 -0.75 0.453 .9456133 1.025274

sp77\_602\_1lag | 1.483558 .2417538 2.42 0.015 1.077945 2.041796

sp77\_701\_2\_1lag | .9220555 .1199248 -0.62 0.533 .7145748 1.189779

sp77\_702\_1lag | .6162038 .3050106 -0.98 0.328 .2335574 1.625755

sp77\_800\_2\_1lag | 1.128829 .1098617 1.25 0.213 .9327948 1.366061

sp77\_802\_1lag | .8808264 .2773593 -0.40 0.687 .4751814 1.632756

sp77\_807\_2\_1lag | .9120058 .1648537 -0.51 0.610 .6399336 1.299751

sp77\_900\_2\_1lag | 1.095743 .1079909 0.93 0.354 .9032718 1.329226

sp77\_902\_2\_1lag | .9698002 .1897727 -0.16 0.875 .6608718 1.423139

sp77\_902\_1lag | 1.046125 .1455888 0.32 0.746 .7963831 1.374184

sp47\_43\_1lag | 2.063008 1.041434 1.43 0.151 .7670133 5.548796

sp72\_503\_1lag | .9561758 .0495519 -0.86 0.387 .8638254 1.058399

sp75\_1106\_3\_1lag | 1.015273 .0139192 1.11 0.269 .9883551 1.042924

sp75\_1400\_3\_1lag | 1.028176 .0475149 0.60 0.548 .939142 1.125652

sp75\_1403\_3\_1lag | 1.022118 .2519143 0.09 0.929 .6305384 1.656879

sp75\_1433\_1lag | 1.006299 .0728536 0.09 0.931 .8731766 1.159717

sp75\_153\_1lag | 1.025147 .1602262 0.16 0.874 .7546525 1.392597

sp75\_1903\_1lag | .97094 .0284986 -1.00 0.315 .9166601 1.028434

sp75\_1913\_1lag | .9929953 .0460142 -0.15 0.879 .9067834 1.087404

sp75\_503\_1lag | 1.000625 .0030616 0.20 0.838 .9946425 1.006644

sp75\_513\_1lag | .916918 .0554277 -1.43 0.151 .8144705 1.032252

sp75\_523\_1lag | .9423819 .0250937 -2.23 0.026 .8944605 .9928708

sp75\_601\_3\_1lag | 1.017531 .2855534 0.06 0.951 .5870457 1.763695

sp75\_603\_1lag | .989371 .0597347 -0.18 0.860 .8789551 1.113658

sp75\_701\_3\_1lag | 1.03135 .0546597 0.58 0.560 .9295957 1.144243

sp75\_703\_3\_1lag | 1.14427 .0889842 1.73 0.083 .9825047 1.332668

sp75\_703\_1lag | 1.027292 .0292164 0.95 0.344 .9715957 1.086181

sp75\_705\_3\_1lag | 1.521984 .3130125 2.04 0.041 1.017071 2.277555

sp75\_800\_3\_1lag | 1.053439 .1193178 0.46 0.646 .8437199 1.315288

sp75\_803\_1lag | .9762388 .0882864 -0.27 0.790 .8176689 1.16556

sp75\_900\_3\_1lag | 1.106046 .0832399 1.34 0.180 .9543605 1.28184

sp75\_903\_1lag | 1.075134 .0406951 1.91 0.056 .9982596 1.157928

sp77\_103\_1lag | .7991206 .1939462 -0.92 0.356 .4966222 1.285874

sp77\_1103\_1lag | 1.00031 .0201887 0.02 0.988 .9615136 1.040672

sp77\_1403\_1lag | .994853 .1072982 -0.05 0.962 .8052931 1.229034

sp77\_1433\_1lag | 1.045966 .1533258 0.31 0.759 .7847694 1.394098

sp77\_203\_1lag | 1.1205 .132448 0.96 0.336 .8887837 1.412627

sp77\_403\_1lag | 1.459063 .2744885 2.01 0.045 1.009114 2.109636

sp77\_413\_1lag | .8456356 .167444 -0.85 0.397 .5736369 1.246607

sp77\_503\_1lag | 1.003036 .1145397 0.03 0.979 .801891 1.254636

sp77\_513\_1lag | 1.008016 .032629 0.25 0.805 .9460511 1.07404

sp77\_603\_1lag | 1.472628 .2399604 2.38 0.018 1.070021 2.026721

sp77\_701\_3\_1lag | 1.389139 .6144948 0.74 0.457 .5837289 3.305829

sp77\_703\_1lag | .8549384 .3032562 -0.44 0.659 .4265835 1.713427

sp77\_803\_1lag | 1.849046 1.182462 0.96 0.336 .5279655 6.475748

sp77\_807\_3\_1lag | 1.000581 .1498013 0.00 0.997 .746131 1.341805

sp77\_902\_3\_1lag | 1.245908 .383808 0.71 0.475 .6811914 2.278782

sp77\_903\_1lag | .789111 .1520328 -1.23 0.219 .540932 1.151154

sp47\_44\_1lag | 1.043516 .0607985 0.73 0.465 .9309056 1.16975

sp48\_24\_1lag | .0512818 .0102783 -14.82 0.000 .0346226 .0759569

sp48\_4\_1lag | 2.003528 .28974 4.81 0.000 1.509034 2.660063

sp75\_1103\_4\_1lag | 1.009611 .0118974 0.81 0.417 .9865597 1.033201

sp75\_1104\_1lag | 1.026407 .032652 0.82 0.413 .9643648 1.092441

sp75\_1106\_4\_1lag | .9698859 .0904555 -0.33 0.743 .8078563 1.164413

sp75\_1107\_14\_1lag | .844352 .2766333 -0.52 0.606 .4442691 1.604726

sp75\_1400\_4\_1lag | .9536955 .0745579 -0.61 0.544 .8182096 1.111616

sp75\_1403\_4\_1lag | 1.77105 .6394257 1.58 0.113 .8727912 3.59378

sp75\_1404\_1lag | .7543613 .2246584 -0.95 0.344 .4208049 1.352316

sp75\_1434\_1lag | .9157061 .08543 -0.94 0.345 .7626828 1.099432

sp75\_1914\_1lag | .9955957 .0057515 -0.76 0.445 .9843865 1.006933

sp75\_214\_1lag | 1.007901 .0315406 0.25 0.801 .94794 1.071654

sp75\_324\_1lag | .9511546 .0503342 -0.95 0.344 .8574452 1.055105

sp75\_344\_1lag | .9775013 .0767878 -0.29 0.772 .8380135 1.140207

sp75\_504\_1lag | .9395721 .0816597 -0.72 0.473 .7924116 1.114062

sp75\_514\_1lag | 1.016676 .0151537 1.11 0.267 .9874052 1.046815

sp75\_604\_1lag | 1.01726 .0055968 3.11 0.002 1.006349 1.028288

sp75\_701\_4\_1lag | 1.71045 .3529662 2.60 0.009 1.141451 2.563086

sp75\_703\_4\_1lag | 3.60e-07 3.89e-07 -13.76 0.000 4.35e-08 2.98e-06

sp75\_704\_1lag | 1.06746 .1561415 0.45 0.655 .8013888 1.421871

sp75\_800\_4\_1lag | 1.064575 .082851 0.80 0.421 .9139679 1.239999

sp75\_804\_1lag | .9662774 .0461836 -0.72 0.473 .8798695 1.061171

sp75\_814\_1lag | .9354225 .0834176 -0.75 0.454 .7854177 1.114076

sp75\_834\_1lag | 7.91e-07 9.99e-07 -11.13 0.000 6.67e-08 9.39e-06

sp75\_900\_4\_1lag | .9922196 .0269146 -0.29 0.773 .9408457 1.046399

sp75\_902\_4\_1lag | 1.045244 .0456964 1.01 0.311 .9594103 1.138756

sp75\_904\_1lag | 1.006472 .0100133 0.65 0.517 .987037 1.026291

sp77\_104\_1lag | .8547877 .1934967 -0.69 0.488 .5484959 1.332119

sp77\_1104\_1lag | 1.002227 .0075538 0.30 0.768 .987531 1.017143

sp77\_1434\_1lag | 1.404351 .2970479 1.61 0.108 .9277478 2.125796

sp77\_204\_1lag | .9578755 .0333274 -1.24 0.216 .8947325 1.025475

sp77\_314\_1lag | .3002892 .1284468 -2.81 0.005 .1298505 .6944419

sp77\_404\_1lag | .9931562 .0084069 -0.81 0.417 .9768149 1.009771

sp77\_504\_1lag | .9782144 .0371559 -0.58 0.562 .9080348 1.053818

sp77\_514\_1lag | .809151 .1122432 -1.53 0.127 .6165286 1.061954

sp77\_604\_1lag | 1.091226 .1163964 0.82 0.413 .8853614 1.344958

sp77\_701\_4\_1lag | 1.021101 .1193891 0.18 0.858 .8119789 1.284083

sp77\_704\_1lag | .8882604 .3084626 -0.34 0.733 .449725 1.75442

sp77\_804\_1lag | .7271443 .6746706 -0.34 0.731 .11799 4.481218

sp77\_904\_1lag | .9731055 .0304145 -0.87 0.383 .9152834 1.034581

sp48\_25\_1lag | .8992152 .0741525 -1.29 0.198 .765016 1.056956

sp48\_5\_1lag | 1.005582 .1187151 0.05 0.962 .7978624 1.267381

sp75\_1106\_5\_1lag | .9701754 .0423223 -0.69 0.488 .8906724 1.056775

sp75\_1403\_5\_1lag | .9935513 .0086537 -0.74 0.458 .9767344 1.010658

sp75\_1405\_1lag | .9923143 .0149807 -0.51 0.609 .9633827 1.022115

sp75\_1435\_1lag | .8156729 .1556016 -1.07 0.286 .5612248 1.185483

sp75\_155\_1lag | 1.105091 .276105 0.40 0.689 .6772156 1.803305

sp75\_1725\_1lag | 1.002213 .0041933 0.53 0.597 .9940278 1.010466

sp75\_1915\_1lag | 1.097196 .1087561 0.94 0.349 .9034656 1.332469

sp75\_505\_1lag | 1.021528 .128906 0.17 0.866 .7976962 1.308166

sp75\_515\_1lag | .970459 .010028 -2.90 0.004 .9510021 .9903138

sp75\_605\_1lag | 1.003278 .0192846 0.17 0.865 .9661837 1.041796

sp75\_701\_5\_1lag | .9246013 .0849748 -0.85 0.394 .7721923 1.107092

sp75\_705\_1lag | 1.619902 .2722185 2.87 0.004 1.165326 2.251801

sp75\_805\_1lag | 1.116564 .1737238 0.71 0.479 .8230892 1.514678

sp75\_815\_1lag | 1.266571 .1092022 2.74 0.006 1.069645 1.49975

sp75\_825\_1lag | 1.080015 .1750955 0.47 0.635 .7860139 1.483984

sp75\_905\_1lag | .8029902 .169087 -1.04 0.297 .5314609 1.213247

sp77\_1605\_1lag | .9888033 .0089331 -1.25 0.213 .9714489 1.006468

sp77\_1915\_1lag | .927714 .091253 -0.76 0.446 .7650453 1.12497

sp77\_205\_1lag | .9998563 .0065961 -0.02 0.983 .9870113 1.012868

sp77\_305\_1lag | 2.661917 2.022818 1.29 0.198 .6002854 11.80406

sp77\_315\_1lag | .5928113 .3765079 -0.82 0.410 .1707258 2.058419

sp77\_405\_1lag | 1.163788 .1267804 1.39 0.164 .940039 1.440793

sp77\_505\_1lag | 1.007388 .0235052 0.32 0.752 .962356 1.054527

sp77\_515\_1lag | .8876009 .4497628 -0.24 0.814 .3287753 2.396273

sp77\_605\_1lag | .543452 .2177988 -1.52 0.128 .247757 1.192056

sp77\_705\_1lag | 1.125726 .0800506 1.67 0.096 .979273 1.294082

sp77\_805\_1lag | .7519376 .2208568 -0.97 0.332 .4228336 1.337193

sp48\_26\_1lag | 1.096265 .0619675 1.63 0.104 .9812966 1.224702

sp48\_6\_1lag | .9732528 .057979 -0.46 0.649 .8659993 1.09379

sp75\_1106\_6\_1lag | .5207744 .2291842 -1.48 0.138 .2198112 1.233813

sp75\_1106\_1lag | 1.183976 .1068077 1.87 0.061 .9920997 1.412963

sp75\_1403\_6\_1lag | .9902808 .0079576 -1.22 0.224 .9748063 1.006001

sp75\_1436\_1lag | 1.89551 .8078327 1.50 0.133 .822165 4.370117

sp75\_156\_1lag | 1.063341 .2525449 0.26 0.796 .6675917 1.693691

sp75\_1712\_6\_1lag | .9951675 .0309719 -0.16 0.876 .9362781 1.057761

sp75\_1726\_1lag | 1.170383 .1201857 1.53 0.125 .9570148 1.431321

sp75\_506\_1lag | .9866688 .0418969 -0.32 0.752 .9078766 1.072299

sp75\_516\_1lag | .9860405 .0140248 -0.99 0.323 .958932 1.013915

sp75\_606\_1lag | .9911004 .0088044 -1.01 0.314 .9739934 1.008508

sp75\_706\_1lag | .8791851 .0562487 -2.01 0.044 .7755717 .9966408

sp75\_806\_1lag | .9028223 .2894395 -0.32 0.750 .4816284 1.692359

sp75\_816\_1lag | 1.000765 .0292995 0.03 0.979 .9449557 1.059871

sp77\_1106\_1lag | 1.495571 1.186827 0.51 0.612 .3157376 7.084146

sp77\_1606\_1lag | 1.022724 .0131686 1.75 0.081 .9972373 1.048863

sp77\_1906\_1lag | .9616342 .2132484 -0.18 0.860 .6226596 1.485146

sp77\_1916\_1lag | 1.383268 .2697697 1.66 0.096 .9438478 2.027265

sp77\_206\_1lag | .9647323 .0436674 -0.79 0.428 .8828324 1.05423

sp77\_216\_1lag | 1.020882 .0370642 0.57 0.569 .9507623 1.096174

sp77\_506\_1lag | .9645964 .0325266 -1.07 0.285 .9029065 1.030501

sp77\_516\_1lag | .9879062 .0109316 -1.10 0.272 .9667113 1.009566

sp77\_606\_1lag | 1.626464 .2585174 3.06 0.002 1.191107 2.220947

sp77\_906\_1lag | .1633727 .133706 -2.21 0.027 .0328509 .8124793

sp48\_27\_1lag | 1.116391 .0774247 1.59 0.112 .9745031 1.278938

sp48\_7\_1lag | 1.065036 .0572739 1.17 0.241 .958494 1.18342

sp75\_1403\_7\_1lag | .941026 .0413295 -1.38 0.166 .8634103 1.025619

sp75\_1437\_1lag | .8233953 .1483191 -1.08 0.281 .5784695 1.172023

sp75\_1727\_1lag | .841723 .4507538 -0.32 0.748 .2946724 2.404356

sp75\_337\_1lag | 1.014139 .0338573 0.42 0.674 .949904 1.082717

sp75\_507\_1lag | 1.029051 .0482344 0.61 0.541 .9387263 1.128068

sp75\_517\_1lag | .9979992 .0037913 -0.53 0.598 .9905959 1.005458

sp75\_607\_1lag | 1.016689 .0432855 0.39 0.697 .9352945 1.105167

sp75\_807\_1lag | 1.021247 .009846 2.18 0.029 1.00213 1.040728

sp75\_827\_1lag | 1.403258 .3133756 1.52 0.129 .9058312 2.173842

sp75\_907\_1lag | .9903255 .0721243 -0.13 0.894 .8585901 1.142273

sp77\_1437\_1lag | .770979 .1268842 -1.58 0.114 .5584132 1.06446

sp77\_207\_1lag | 1.042759 .0310744 1.41 0.160 .9835983 1.105477

sp77\_507\_1lag | .9144297 .0935638 -0.87 0.382 .7482659 1.117493

sp77\_807\_1lag | .7551712 .109258 -1.94 0.052 .5687138 1.00276

sp48\_28\_1lag | .9362254 .0800842 -0.77 0.441 .7917153 1.107113

sp48\_8\_1lag | 1.075799 .0939421 0.84 0.403 .9065707 1.276617

sp75\_1403\_8\_1lag | .9845488 .0083357 -1.84 0.066 .9683459 1.001023

sp75\_1438\_1lag | 8.205308 3.728513 4.63 0.000 3.367493 19.99324

sp75\_1728\_1lag | 1.473876 .2930176 1.95 0.051 .9982414 2.176136

sp75\_208\_1lag | .989456 .0167997 -0.62 0.532 .9570711 1.022937

sp75\_518\_1lag | 1.007013 .0130159 0.54 0.589 .9818229 1.03285

sp75\_705\_8\_1lag | 1.127651 .179805 0.75 0.451 .8249919 1.541344

sp75\_808\_1lag | 1.126338 .1016683 1.32 0.187 .9437035 1.344318

sp75\_818\_1lag | .9855061 .1219111 -0.12 0.906 .7733253 1.255904

sp77\_1438\_1lag | .3980108 .2406882 -1.52 0.128 .1216605 1.302087

sp77\_208\_1lag | 1.021144 .0175764 1.22 0.224 .9872698 1.056181

sp77\_408\_1lag | .926948 .0926926 -0.76 0.448 .7619689 1.127648

sp77\_508\_1lag | .9808344 .0958582 -0.20 0.843 .8098539 1.187913

sp77\_704\_8\_1lag | 1.067354 .209249 0.33 0.740 .7268332 1.567407

sp77\_808\_1lag | 1.384639 .3677703 1.23 0.220 .8227181 2.330354

sp75\_1403\_9\_1lag | .9690619 .0298352 -1.02 0.307 .9123153 1.029338

sp75\_1729\_1lag | 1.130959 .158317 0.88 0.379 .8595907 1.487997

sp75\_1909\_1lag | 1.009614 .00557 1.73 0.083 .9987561 1.02059

sp75\_519\_1lag | .7802124 .2657478 -0.73 0.466 .4002077 1.521039

sp75\_809\_1lag | .9933654 .0327262 -0.20 0.840 .9312502 1.059624

sp75\_819\_1lag | 2.449044 .868348 2.53 0.012 1.222333 4.906862

sp77\_309\_1lag | 1.36753 .4299462 1.00 0.319 .7384519 2.532511

sp77\_409\_1lag | .8302738 .1594666 -0.97 0.333 .5698168 1.209783

sp77\_509\_1lag | .9311512 .0480264 -1.38 0.167 .8416227 1.030203

sp77\_704\_9\_1lag | .7089624 .3725612 -0.65 0.513 .2531134 1.985781

sp77\_809\_1lag | .8267735 .0555878 -2.83 0.005 .7246968 .9432282

sp72\_610\_1lag | 1.024849 .2830855 0.09 0.929 .5964026 1.761085

sp72\_620\_1lag | 1.1947 .1697827 1.25 0.211 .9042573 1.578433

sp72\_630\_1lag | 1.018693 .0089636 2.10 0.035 1.001276 1.036414

sp75\_100\_1lag | 1.114478 .1563049 0.77 0.440 .8466252 1.467075

sp75\_1101\_20\_1lag | 1.0147 .171172 0.09 0.931 .7290316 1.412305

sp75\_1400\_1lag | 1.008686 .0422663 0.21 0.836 .9291557 1.095023

sp75\_1403\_10\_1lag | .9989904 .0133533 -0.08 0.940 .9731583 1.025508

sp75\_150\_1lag | 1.398408 .279749 1.68 0.094 .9448275 2.069737

sp75\_160\_1lag | .7702257 .1855216 -1.08 0.278 .4803878 1.234935

sp75\_1712\_10\_1lag | .8282789 .0619602 -2.52 0.012 .715322 .9590729

sp75\_1720\_1lag | 1.022672 .0380446 0.60 0.547 .9507594 1.100024

sp75\_1730\_1lag | .9279463 .0415648 -1.67 0.095 .8499544 1.013095

sp75\_1910\_1lag | .9913648 .007112 -1.21 0.227 .9775232 1.005402

sp75\_320\_1lag | .9573735 .0199964 -2.09 0.037 .9189725 .9973791

sp75\_340\_1lag | 1.00899 .0110465 0.82 0.414 .9875698 1.030875

sp75\_520\_1lag | 1.026017 .0321336 0.82 0.412 .9649299 1.090971

sp75\_600\_1lag | 1.066925 .4420297 0.16 0.876 .4736735 2.403194

sp75\_700\_1lag | .9803852 .0374767 -0.52 0.604 .9096165 1.05666

sp75\_800\_1lag | .9710046 .089591 -0.32 0.750 .8103714 1.163479

sp75\_810\_1lag | 1.067029 .0428977 1.61 0.107 .9861781 1.154508

sp75\_820\_1lag | 1.054193 .1350679 0.41 0.680 .820088 1.355127

sp75\_900\_1lag | .968742 .0209756 -1.47 0.142 .9284907 1.010738

sp77\_1710\_1lag | .9645724 .022488 -1.55 0.122 .9214885 1.009671

sp77\_200\_1lag | 1.007257 .0130587 0.56 0.577 .9819849 1.03318

sp77\_210\_1lag | .9861756 .0644268 -0.21 0.831 .8676515 1.12089

sp77\_400\_1lag | 1.016948 .0103147 1.66 0.098 .9969313 1.037367

sp77\_410\_1lag | 1.004155 .0148402 0.28 0.779 .9754861 1.033667

sp77\_500\_1lag | .8804645 .104989 -1.07 0.286 .696967 1.112273

sp77\_510\_1lag | .958426 .3533935 -0.12 0.908 .4652659 1.974313

sp77\_600\_1lag | 1.337272 .2278674 1.71 0.088 .9575848 1.867506

sp77\_700\_1lag | .8339615 .0900493 -1.68 0.093 .6748934 1.030521

sp77\_800\_1lag | 1.288692 .3144791 1.04 0.299 .7987862 2.079062

sp77\_810\_1lag | .8935089 .1278267 -0.79 0.431 .6750325 1.182696

sp77\_900\_1lag | .8186583 .1183191 -1.38 0.166 .6167088 1.086739

mine\_time | .9990395 .0070452 -0.14 0.892 .9853261 1.012944

onsite\_insp\_hours | .9998741 .0000527 -2.39 0.017 .9997709 .9999774

|

state |

1 | 1.239152 .179205 1.48 0.138 .9333068 1.645222

2 | 1.699975 .1382297 6.53 0.000 1.449536 1.993683

3 | .7585147 .1371263 -1.53 0.126 .5322082 1.081052

4 | 1.004199 .1107972 0.04 0.970 .808916 1.246626

5 | .83813 .1434482 -1.03 0.302 .5992747 1.172187

6 | .8381282 .0450712 -3.28 0.001 .7542864 .9312894

7 | .9190348 .2371056 -0.33 0.743 .5542771 1.523832

8 | 1.256273 .1286193 2.23 0.026 1.027866 1.535435

9 | .8640438 .0816611 -1.55 0.122 .7179403 1.03988

10 | .8187494 .1389758 -1.18 0.239 .5870387 1.141919

11 | .8467243 .2494215 -0.56 0.572 .4753371 1.508282

12 | 1.005588 .0932268 0.06 0.952 .8385061 1.205963

13 | 1.426799 .2330566 2.18 0.030 1.035919 1.96517

14 | .6487269 .0976302 -2.88 0.004 .4830146 .8712915

15 | .6732432 .0456062 -5.84 0.000 .5895364 .7688352

17 | 1.309508 .1720103 2.05 0.040 1.012276 1.694017

|

time |

2000 | 1.030107 .072923 0.42 0.675 .896653 1.183424

2002 | .8933002 .0655783 -1.54 0.124 .7735878 1.031538

2003 | .8447641 .0684258 -2.08 0.037 .7207559 .9901083

2004 | .8171334 .0619417 -2.66 0.008 .704318 .9480192

2005 | .7088477 .0542807 -4.49 0.000 .6100583 .8236345

2006 | .6919439 .0561007 -4.54 0.000 .5902799 .8111175

2007 | .6462636 .0535661 -5.27 0.000 .5493601 .7602602

2008 | .5751153 .0484852 -6.56 0.000 .4875221 .6784464

2009 | .4593693 .0415439 -8.60 0.000 .384753 .5484563

2010 | .4979987 .0451967 -7.68 0.000 .4168463 .59495

2011 | .527287 .0484556 -6.96 0.000 .4403773 .6313485

2012 | .5311478 .0493703 -6.81 0.000 .4426861 .6372866

2013 | .4437974 .0441865 -8.16 0.000 .3651197 .5394291

2014 | .4200742 .0450489 -8.09 0.000 .3404418 .5183333

2015 | .472004 .0529493 -6.69 0.000 .3788419 .5880758

|

\_cons | .0000177 1.23e-06 -157.45 0.000 .0000154 .0000202

ln(hours) | 1 (exposure)

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

**. eststo: nbreg MR `subpart\_count\_lag\_1\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr**

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -95858.441

Iteration 1: log pseudolikelihood = -50156.318 (backed up)

Iteration 2: log pseudolikelihood = -43268.477

Iteration 3: log pseudolikelihood = -28356.889

Iteration 4: log pseudolikelihood = -13241.618

Iteration 5: log pseudolikelihood = -9075.9266

Iteration 6: log pseudolikelihood = -8654.9211

Iteration 7: log pseudolikelihood = -8598.0129

Iteration 8: log pseudolikelihood = -8596.1687

Iteration 9: log pseudolikelihood = -8596.1645

Iteration 10: log pseudolikelihood = -8596.1645

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 = -8570.1021

Iteration 1: log pseudolikelihood = -8482.5235

Iteration 2: log pseudolikelihood = -8474.6574

Iteration 3: log pseudolikelihood = -8474.5991

Iteration 4: log pseudolikelihood = -8474.5991

Negative binomial regression Number of obs = 6,253

Wald chi2(338) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -8474.5991 Pseudo R2 = 0.0544

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

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

| Robust

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

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

sp47\_41\_1lag | .9715832 .0359952 -0.78 0.436 .9035345 1.044757

sp48\_11\_1lag | .9914293 .0463387 -0.18 0.854 .904643 1.086541

sp71\_701\_1lag | 3.088404 1.514282 2.30 0.021 1.181353 8.073995

sp75\_1001\_1\_1lag | .9396889 .1339709 -0.44 0.663 .7106058 1.242623

sp75\_1001\_1lag | .9237309 .2616836 -0.28 0.779 .5301622 1.609468

sp75\_1003\_1\_1lag | .8130151 .1489655 -1.13 0.259 .5677228 1.164289

sp75\_1400\_1\_1lag | 1.010293 .2453423 0.04 0.966 .6276816 1.626131

sp75\_1401\_1\_1lag | .7414994 .2568589 -0.86 0.388 .3760542 1.46208

sp75\_1401\_1lag | .8388696 .1292106 -1.14 0.254 .6202751 1.1345

sp75\_1403\_11\_1lag | .99077 .3372524 -0.03 0.978 .5084272 1.930709

sp75\_1404\_1\_1lag | .7075689 .2318615 -1.06 0.291 .3722551 1.344921

sp75\_1405\_1\_1lag | 1.435289 .2673138 1.94 0.052 .9963414 2.067619

sp75\_1431\_1lag | 1.164166 .2463663 0.72 0.473 .7689172 1.762585

sp75\_151\_1lag | 2.114766 .8873517 1.78 0.074 .9291801 4.813099

sp75\_1721\_1lag | .4042713 .3644756 -1.00 0.315 .0690656 2.366376

sp75\_1731\_1lag | .9993282 .0025294 -0.27 0.791 .9943829 1.004298

sp75\_1911\_1lag | .9985599 .0099721 -0.14 0.885 .9792049 1.018297

sp75\_211\_1lag | 1.003589 .0142645 0.25 0.801 .9760174 1.03194

sp75\_341\_1lag | 1.184051 .2351518 0.85 0.395 .802273 1.747505

sp75\_506\_1\_1lag | 1.274683 .0860302 3.60 0.000 1.116744 1.45496

sp75\_510\_1\_1lag | 1.089213 .5190185 0.18 0.858 .4280641 2.771514

sp75\_511\_1\_1lag | .1899373 .0899528 -3.51 0.000 .0750738 .4805432

sp75\_511\_1lag | 1.052217 .0414743 1.29 0.197 .9739893 1.136727

sp75\_512\_1\_1lag | 1.189017 .3095498 0.67 0.506 .713815 1.980572

sp75\_513\_1\_1lag | 1.071245 .0958285 0.77 0.442 .8989684 1.276537

sp75\_516\_1\_1lag | .9964005 .1306166 -0.03 0.978 .7706394 1.288299

sp75\_517\_1\_1lag | .9467321 .1094574 -0.47 0.636 .7547698 1.187516

sp75\_518\_1\_1lag | 1.005985 .0155764 0.39 0.700 .9759143 1.036982

sp75\_523\_1\_1lag | .9674927 .0271422 -1.18 0.239 .9157311 1.02218

sp75\_600\_1\_1lag | .9655616 .1539745 -0.22 0.826 .706386 1.31983

sp75\_601\_1\_1lag | .9954271 .0116697 -0.39 0.696 .9728157 1.018564

sp75\_601\_1lag | 1.025599 .0145986 1.78 0.076 .997382 1.054615

sp75\_700\_1\_1lag | .8038857 .1035399 -1.69 0.090 .6245399 1.034733

sp75\_701\_1\_1lag | .9544578 .0372405 -1.19 0.232 .8841888 1.030311

sp75\_701\_1lag | 1.017978 .0105494 1.72 0.086 .9975098 1.038865

sp75\_702\_1\_1lag | 1.108379 .1400152 0.81 0.415 .8652883 1.419762

sp75\_703\_1\_1lag | .6570881 .164974 -1.67 0.094 .4017112 1.074814

sp75\_705\_1\_1lag | .8622242 .0844777 -1.51 0.130 .7115779 1.044763

sp75\_801\_1lag | .8113276 .1555468 -1.09 0.275 .557192 1.181375

sp75\_811\_1lag | 1.024936 .0379291 0.67 0.506 .9532278 1.102038

sp75\_821\_1lag | 1.06982 .0582073 1.24 0.215 .9616079 1.190209

sp75\_831\_1lag | .6876249 .1272586 -2.02 0.043 .4784317 .9882875

sp75\_901\_1lag | .9312953 .0677404 -0.98 0.328 .8075563 1.073994

sp75\_902\_1\_1lag | 1.318957 .1876005 1.95 0.052 .9980697 1.743012

sp77\_1111\_1lag | .9477853 .1323629 -0.38 0.701 .7208343 1.246191

sp77\_401\_1lag | .9905061 .0585299 -0.16 0.872 .8821835 1.11213

sp77\_403\_1\_1lag | 1.083041 .0961588 0.90 0.369 .9100603 1.288901

sp77\_411\_1lag | .9050815 .4032131 -0.22 0.823 .3779881 2.167192

sp77\_501\_1lag | .9839536 .0785059 -0.20 0.839 .8415124 1.150506

sp77\_502\_1\_1lag | 1.14468 .5139173 0.30 0.763 .4748183 2.759566

sp77\_503\_1\_1lag | 1.070974 .2360824 0.31 0.756 .6952523 1.649739

sp77\_506\_1\_1lag | 1.033228 .03491 0.97 0.333 .9670217 1.103967

sp77\_508\_1\_1lag | .8494872 .0989643 -1.40 0.161 .6760719 1.067384

sp77\_511\_1lag | .8027125 .1011337 -1.74 0.081 .6270717 1.02755

sp77\_601\_1lag | .9699711 .1623993 -0.18 0.856 .698626 1.346706

sp77\_606\_1\_1lag | .681168 .1808245 -1.45 0.148 .4048482 1.146083

sp77\_700\_1\_1lag | 1.299187 .2451481 1.39 0.165 .8975435 1.880563

sp77\_701\_1\_1lag | 1.076631 .1468039 0.54 0.588 .8241404 1.406476

sp77\_701\_1lag | 1.008325 .0288976 0.29 0.772 .9532482 1.066584

sp77\_704\_1\_1lag | 1.039708 .1463741 0.28 0.782 .7889977 1.370082

sp77\_800\_1\_1lag | 1.128411 .1967418 0.69 0.488 .8017852 1.588096

sp77\_801\_1\_1lag | 4.94e-09 4.96e-09 -19.04 0.000 6.89e-10 3.54e-08

sp77\_801\_1lag | .8345433 .3418955 -0.44 0.659 .373877 1.862812

sp77\_807\_1\_1lag | 1.127385 .2957904 0.46 0.648 .6741304 1.885389

sp77\_900\_1\_1lag | 1.204149 .2408125 0.93 0.353 .813677 1.782002

sp77\_901\_1\_1lag | .6236945 .183749 -1.60 0.109 .3501033 1.111086

sp77\_901\_1lag | 1.075844 .1232202 0.64 0.523 .8595242 1.346605

sp47\_42\_1lag | .7150533 .0856388 -2.80 0.005 .5654494 .9042387

sp75\_1100\_2\_1lag | 1.007696 .0054888 1.41 0.159 .9969949 1.018511

sp75\_1102\_1lag | .9591577 .0441768 -0.91 0.365 .876366 1.049771

sp75\_1106\_2\_1lag | 1.033167 .0321112 1.05 0.294 .9721086 1.09806

sp75\_1400\_2\_1lag | 1.076786 .1241569 0.64 0.521 .8589806 1.34982

sp75\_1402\_2\_1lag | .871836 .354124 -0.34 0.736 .3932712 1.932758

sp75\_1432\_1lag | .9577909 .119225 -0.35 0.729 .7504363 1.22244

sp75\_1600\_2\_1lag | .9895771 .0182159 -0.57 0.569 .9545111 1.025931

sp75\_1912\_1lag | .9706224 .0627956 -0.46 0.645 .855029 1.101843

sp75\_202\_1lag | 1.001276 .0020081 0.64 0.525 .9973475 1.005219

sp75\_212\_1lag | .9434014 .0222593 -2.47 0.014 .9007673 .9880534

sp75\_312\_1lag | 1.031615 .0250087 1.28 0.199 .9837452 1.081814

sp75\_342\_1lag | 1.004446 .0059018 0.75 0.450 .9929446 1.01608

sp75\_352\_1lag | .9331481 .0318087 -2.03 0.042 .8728412 .9976218

sp75\_382\_1lag | 1.055349 .0433051 1.31 0.189 .9737956 1.143732

sp75\_512\_2\_1lag | 1.023682 .0126674 1.89 0.059 .9991534 1.048814

sp75\_512\_1lag | 1.002385 .0032208 0.74 0.458 .9960925 1.008718

sp75\_516\_2\_1lag | 1.016159 .020314 0.80 0.423 .9771138 1.056764

sp75\_523\_2\_1lag | 1.011366 .0220761 0.52 0.605 .9690097 1.055573

sp75\_601\_2\_1lag | .7946874 .1448222 -1.26 0.207 .5560004 1.135841

sp75\_602\_1lag | 1.00234 .0317996 0.07 0.941 .9419125 1.066645

sp75\_701\_2\_1lag | .9743056 .0527603 -0.48 0.631 .876196 1.083401

sp75\_702\_1lag | .4504816 .2700684 -1.33 0.183 .1391147 1.458751

sp75\_703\_2\_1lag | .8845634 .103526 -1.05 0.295 .7032463 1.112629

sp75\_705\_2\_1lag | 1.126195 .2263787 0.59 0.554 .7594721 1.669996

sp75\_800\_2\_1lag | .6091234 .1549543 -1.95 0.051 .3699721 1.002863

sp75\_802\_1lag | .8790782 .1117086 -1.01 0.310 .6852693 1.1277

sp75\_803\_2\_1lag | 1.208829 .2377885 0.96 0.335 .8221014 1.77748

sp75\_812\_1lag | 1.103132 .1670379 0.65 0.517 .8198554 1.484286

sp75\_832\_1lag | .6240145 .4724185 -0.62 0.533 .1415081 2.751745

sp75\_900\_2\_1lag | .9523718 .1688074 -0.28 0.783 .6728705 1.347974

sp75\_902\_2\_1lag | 1.043275 .0607545 0.73 0.467 .9307427 1.169413

sp75\_902\_1lag | 1.004418 .0199831 0.22 0.825 .9660052 1.044357

sp77\_1112\_1lag | .998472 .0683604 -0.02 0.982 .8730887 1.141861

sp77\_1432\_1lag | .9687274 .2350947 -0.13 0.896 .6020444 1.558743

sp77\_1802\_1lag | .8638817 .2189427 -0.58 0.564 .5256846 1.419657

sp77\_202\_1lag | .9765972 .0118243 -1.96 0.050 .9536948 1.00005

sp77\_402\_1lag | 1.030541 .0262133 1.18 0.237 .980424 1.083221

sp77\_403\_2\_1lag | 2.646716 .9891901 2.60 0.009 1.272264 5.506016

sp77\_412\_1lag | 1.093009 .0817796 1.19 0.235 .9439225 1.265643

sp77\_502\_2\_1lag | .9490981 .0402651 -1.23 0.218 .873372 1.03139

sp77\_502\_1lag | .9946569 .0087642 -0.61 0.543 .9776269 1.011984

sp77\_512\_1lag | .9958015 .0171844 -0.24 0.807 .962684 1.030058

sp77\_602\_1lag | 1.463079 .2111043 2.64 0.008 1.102681 1.941269

sp77\_701\_2\_1lag | .9592248 .1028536 -0.39 0.698 .7774092 1.183562

sp77\_702\_1lag | .431415 .1832402 -1.98 0.048 .1876523 .9918286

sp77\_800\_2\_1lag | 1.118151 .0914309 1.37 0.172 .9525724 1.312511

sp77\_802\_1lag | 1.056625 .2824735 0.21 0.837 .6256971 1.784339

sp77\_807\_2\_1lag | .9323219 .1232465 -0.53 0.596 .7195201 1.208061

sp77\_900\_2\_1lag | 1.113525 .0993217 1.21 0.228 .9349244 1.326244

sp77\_902\_2\_1lag | .9912311 .1904487 -0.05 0.963 .6801905 1.444506

sp77\_902\_1lag | 1.030659 .102344 0.30 0.761 .848381 1.2521

sp47\_43\_1lag | 1.891204 .7342174 1.64 0.101 .8836463 4.047606

sp72\_503\_1lag | .9626613 .0455475 -0.80 0.421 .877404 1.056203

sp75\_1106\_3\_1lag | 1.015434 .0121607 1.28 0.201 .9918773 1.039551

sp75\_1400\_3\_1lag | 1.039502 .0394463 1.02 0.307 .9649936 1.119763

sp75\_1403\_3\_1lag | .9924319 .164689 -0.05 0.963 .7168828 1.373894

sp75\_1433\_1lag | 1.006969 .0641606 0.11 0.913 .8887513 1.14091

sp75\_153\_1lag | 1.133811 .1713783 0.83 0.406 .8431008 1.524762

sp75\_1903\_1lag | .9769676 .0242627 -0.94 0.348 .9305524 1.025698

sp75\_1913\_1lag | 1.001538 .0405141 0.04 0.970 .9251983 1.084177

sp75\_503\_1lag | .9989357 .002846 -0.37 0.709 .9933732 1.004529

sp75\_513\_1lag | .9465527 .050657 -1.03 0.305 .8522966 1.051233

sp75\_523\_1lag | .9590561 .0241869 -1.66 0.097 .9128032 1.007653

sp75\_601\_3\_1lag | .9488699 .1960019 -0.25 0.799 .6329647 1.42244

sp75\_603\_1lag | .9995153 .0516628 -0.01 0.993 .9032181 1.106079

sp75\_701\_3\_1lag | 1.071522 .0504207 1.47 0.142 .9771197 1.175045

sp75\_703\_3\_1lag | 1.123796 .0749004 1.75 0.080 .9861777 1.280618

sp75\_703\_1lag | 1.017623 .0256348 0.69 0.488 .9685996 1.069127

sp75\_705\_3\_1lag | 1.62248 .2901155 2.71 0.007 1.142816 2.303471

sp75\_800\_3\_1lag | 1.026127 .1022118 0.26 0.796 .844138 1.247351

sp75\_803\_1lag | .9395982 .076446 -0.77 0.444 .8011026 1.102037

sp75\_900\_3\_1lag | 1.097772 .0670974 1.53 0.127 .9738354 1.237482

sp75\_903\_1lag | 1.044968 .0359946 1.28 0.202 .9767489 1.117952

sp77\_103\_1lag | .6563929 .2380534 -1.16 0.246 .3224478 1.33619

sp77\_1103\_1lag | 1.000138 .0175797 0.01 0.994 .9662695 1.035194

sp77\_1403\_1lag | 1.009809 .1052641 0.09 0.925 .823206 1.23871

sp77\_1433\_1lag | 1.088519 .1540961 0.60 0.549 .8247749 1.436601

sp77\_203\_1lag | 1.110349 .1325886 0.88 0.381 .8786501 1.403146

sp77\_403\_1lag | 1.425453 .2371949 2.13 0.033 1.028758 1.975116

sp77\_413\_1lag | .9288924 .1202164 -0.57 0.569 .7207816 1.197091

sp77\_503\_1lag | 1.108214 .1165299 0.98 0.328 .9018184 1.361848

sp77\_513\_1lag | 1.004013 .0286435 0.14 0.888 .9494138 1.061753

sp77\_603\_1lag | 1.393953 .2321668 1.99 0.046 1.005722 1.932049

sp77\_701\_3\_1lag | .9706995 .3716081 -0.08 0.938 .4583778 2.055635

sp77\_703\_1lag | 1.019534 .3010351 0.07 0.948 .5715707 1.818586

sp77\_803\_1lag | 1.257449 .538632 0.53 0.593 .5430944 2.911421

sp77\_807\_3\_1lag | 1.042893 .1338991 0.33 0.744 .8108718 1.341304

sp77\_902\_3\_1lag | 1.168151 .2346785 0.77 0.439 .7879427 1.731821

sp77\_903\_1lag | .9069863 .1622249 -0.55 0.585 .6387834 1.287798

sp47\_44\_1lag | 1.020337 .0502088 0.41 0.682 .9265265 1.123647

sp48\_24\_1lag | .0129318 .0025926 -21.69 0.000 .0087299 .0191562

sp48\_4\_1lag | 2.09626 .273709 5.67 0.000 1.622944 2.707613

sp75\_1103\_4\_1lag | 1.01189 .0108374 1.10 0.270 .99087 1.033355

sp75\_1104\_1lag | 1.013874 .030183 0.46 0.643 .9564092 1.074792

sp75\_1106\_4\_1lag | 1.01074 .077919 0.14 0.890 .8689996 1.1756

sp75\_1107\_14\_1lag | .9631201 .3098662 -0.12 0.907 .5126513 1.809418

sp75\_1400\_4\_1lag | .977114 .0675253 -0.34 0.738 .8533384 1.118843

sp75\_1403\_4\_1lag | 1.604916 .3980504 1.91 0.056 .9870465 2.609557

sp75\_1404\_1lag | .7563824 .1692309 -1.25 0.212 .4878609 1.1727

sp75\_1434\_1lag | .9084162 .0810964 -1.08 0.282 .7625989 1.082115

sp75\_1914\_1lag | .9991455 .0045778 -0.19 0.852 .9902132 1.008158

sp75\_214\_1lag | 1.001257 .0293563 0.04 0.966 .9453416 1.06048

sp75\_324\_1lag | .9801643 .0439726 -0.45 0.655 .8976601 1.070252

sp75\_344\_1lag | 1.027632 .0711221 0.39 0.694 .8972761 1.176925

sp75\_504\_1lag | .9703737 .0803996 -0.36 0.717 .8249229 1.141471

sp75\_514\_1lag | 1.017931 .013305 1.36 0.174 .992185 1.044345

sp75\_604\_1lag | 1.017387 .0050622 3.46 0.001 1.007514 1.027358

sp75\_701\_4\_1lag | 1.606855 .2723678 2.80 0.005 1.152643 2.240054

sp75\_703\_4\_1lag | 4.43e-10 4.72e-10 -20.21 0.000 5.48e-11 3.57e-09

sp75\_704\_1lag | .977417 .1693626 -0.13 0.895 .695965 1.37269

sp75\_800\_4\_1lag | 1.04891 .0673068 0.74 0.457 .9249498 1.189484

sp75\_804\_1lag | .9815984 .0424211 -0.43 0.667 .9018785 1.068365

sp75\_814\_1lag | .9594893 .0732999 -0.54 0.588 .8260624 1.114467

sp75\_834\_1lag | 7.48e-10 9.41e-10 -16.72 0.000 6.37e-11 8.79e-09

sp75\_900\_4\_1lag | .9793621 .0193938 -1.05 0.292 .9420791 1.018121

sp75\_902\_4\_1lag | 1.028676 .038908 0.75 0.455 .9551754 1.107832

sp75\_904\_1lag | .9988107 .008855 -0.13 0.893 .9816051 1.016318

sp77\_104\_1lag | .7883604 .1838548 -1.02 0.308 .4991312 1.245188

sp77\_1104\_1lag | 1.004212 .0065707 0.64 0.521 .9914159 1.017174

sp77\_1434\_1lag | 1.167448 .1916209 0.94 0.346 .8463 1.610464

sp77\_204\_1lag | .957029 .0281839 -1.49 0.136 .9033536 1.013894

sp77\_314\_1lag | .2968399 .1133848 -3.18 0.001 .1404063 .6275642

sp77\_404\_1lag | .9892179 .0080319 -1.34 0.182 .9736003 1.005086

sp77\_504\_1lag | .975005 .0311051 -0.79 0.428 .915907 1.037916

sp77\_514\_1lag | .9634104 .1149613 -0.31 0.755 .7624996 1.217259

sp77\_604\_1lag | 1.09142 .1033903 0.92 0.356 .9064787 1.314094

sp77\_701\_4\_1lag | 1.055815 .1187914 0.48 0.629 .846872 1.316309

sp77\_704\_1lag | .900777 .3076702 -0.31 0.760 .4611902 1.759359

sp77\_804\_1lag | .6159297 .4344678 -0.69 0.492 .1545632 2.454461

sp77\_904\_1lag | .9796661 .0274476 -0.73 0.463 .9273202 1.034967

sp48\_25\_1lag | .9224844 .0731545 -1.02 0.309 .7896913 1.077608

sp48\_5\_1lag | .9866255 .1148197 -0.12 0.908 .7854033 1.239401

sp75\_1106\_5\_1lag | 1.006253 .0417532 0.15 0.881 .9276572 1.091507

sp75\_1403\_5\_1lag | .9961644 .0073787 -0.52 0.604 .9818069 1.010732

sp75\_1405\_1lag | .9955951 .0129739 -0.34 0.735 .9704887 1.021351

sp75\_1435\_1lag | .9223505 .1309932 -0.57 0.569 .6982444 1.218385

sp75\_155\_1lag | 1.059111 .1903159 0.32 0.749 .7447074 1.506251

sp75\_1725\_1lag | 1.002459 .003574 0.69 0.491 .9954789 1.009489

sp75\_1915\_1lag | 1.051156 .0958 0.55 0.584 .8792055 1.256735

sp75\_505\_1lag | 1.049876 .1309179 0.39 0.696 .8222318 1.340545

sp75\_515\_1lag | .9715808 .0093243 -3.00 0.003 .9534763 .990029

sp75\_605\_1lag | 1.000839 .0161523 0.05 0.959 .9696768 1.033003

sp75\_701\_5\_1lag | .9049763 .0692393 -1.31 0.192 .7789547 1.051386

sp75\_705\_1lag | 1.446076 .2332813 2.29 0.022 1.054084 1.983842

sp75\_805\_1lag | 1.138272 .1384964 1.06 0.287 .8967644 1.444821

sp75\_815\_1lag | 1.314418 .093453 3.85 0.000 1.143443 1.510959

sp75\_825\_1lag | 1.102308 .1451068 0.74 0.459 .8516312 1.426771

sp75\_905\_1lag | .8799492 .1866675 -0.60 0.547 .5806152 1.333604

sp77\_1605\_1lag | .9868881 .0079998 -1.63 0.103 .9713327 1.002693

sp77\_1915\_1lag | .9678728 .093994 -0.34 0.737 .8001192 1.170798

sp77\_205\_1lag | .9994445 .0056821 -0.10 0.922 .9883696 1.010644

sp77\_305\_1lag | 2.660606 1.647453 1.58 0.114 .7905236 8.954605

sp77\_315\_1lag | .6335445 .348479 -0.83 0.407 .2155642 1.861991

sp77\_405\_1lag | 1.062192 .0951545 0.67 0.501 .8911473 1.266066

sp77\_505\_1lag | .9998583 .0212975 -0.01 0.995 .9589753 1.042484

sp77\_515\_1lag | .7394161 .2088999 -1.07 0.285 .4250181 1.286383

sp77\_605\_1lag | .5858513 .2242046 -1.40 0.162 .2767155 1.240341

sp77\_705\_1lag | 1.097508 .0719505 1.42 0.156 .9651721 1.247989

sp77\_805\_1lag | .9306598 .254739 -0.26 0.793 .5442534 1.591405

sp48\_26\_1lag | 1.10378 .0580521 1.88 0.060 .9956679 1.223631

sp48\_6\_1lag | .9984014 .0509806 -0.03 0.975 .9033185 1.103493

sp75\_1106\_6\_1lag | .5717281 .200985 -1.59 0.112 .2870507 1.138729

sp75\_1106\_1lag | 1.121003 .0965114 1.33 0.185 .9469424 1.327058

sp75\_1403\_6\_1lag | .9935438 .0065486 -0.98 0.326 .9807913 1.006462

sp75\_1436\_1lag | 1.600694 .5951662 1.27 0.206 .7723547 3.317417

sp75\_156\_1lag | 1.079986 .2395955 0.35 0.729 .6991635 1.668237

sp75\_1712\_6\_1lag | .9951435 .0252134 -0.19 0.848 .9469331 1.045808

sp75\_1726\_1lag | 1.089463 .0863328 1.08 0.280 .9327397 1.27252

sp75\_506\_1lag | .9729092 .0345855 -0.77 0.440 .9074305 1.043113

sp75\_516\_1lag | .9918301 .0128914 -0.63 0.528 .9668826 1.017421

sp75\_606\_1lag | .9896646 .0073251 -1.40 0.160 .9754112 1.004126

sp75\_706\_1lag | .9159959 .0483668 -1.66 0.097 .8259391 1.015872

sp75\_806\_1lag | 1.09353 .2775925 0.35 0.725 .6648957 1.798491

sp75\_816\_1lag | .9932821 .0254072 -0.26 0.792 .9447125 1.044349

sp77\_1106\_1lag | 1.157918 .7321218 0.23 0.817 .3353395 3.998257

sp77\_1606\_1lag | 1.024319 .012631 1.95 0.051 .9998595 1.049377

sp77\_1906\_1lag | .9262604 .1857664 -0.38 0.703 .6252017 1.37229

sp77\_1916\_1lag | 1.307074 .1944433 1.80 0.072 .976503 1.749552

sp77\_206\_1lag | .9845876 .0377042 -0.41 0.685 .9133939 1.061331

sp77\_216\_1lag | 1.023638 .032574 0.73 0.463 .9617448 1.089515

sp77\_506\_1lag | .9656299 .0358609 -0.94 0.346 .8978409 1.038537

sp77\_516\_1lag | .9897589 .0096334 -1.06 0.290 .9710568 1.008821

sp77\_606\_1lag | 1.578633 .2065151 3.49 0.000 1.221597 2.04002

sp77\_906\_1lag | .1749056 .1022679 -2.98 0.003 .0556036 .5501794

sp48\_27\_1lag | 1.105342 .073238 1.51 0.131 .9707282 1.258623

sp48\_7\_1lag | 1.071405 .0479105 1.54 0.123 .9814994 1.169546

sp75\_1403\_7\_1lag | .9501863 .0354655 -1.37 0.171 .8831569 1.022303

sp75\_1437\_1lag | .9153945 .1458653 -0.55 0.579 .6698413 1.250963

sp75\_1727\_1lag | .9040109 .424726 -0.21 0.830 .3599638 2.270328

sp75\_337\_1lag | 1.021418 .0307375 0.70 0.481 .9629158 1.083475

sp75\_507\_1lag | 1.016181 .0417241 0.39 0.696 .9376075 1.10134

sp75\_517\_1lag | .9992069 .0032832 -0.24 0.809 .9927927 1.005663

sp75\_607\_1lag | 1.015208 .040652 0.38 0.706 .9385781 1.098095

sp75\_807\_1lag | 1.017889 .008612 2.10 0.036 1.001149 1.034909

sp75\_827\_1lag | 1.459041 .2429233 2.27 0.023 1.052802 2.022034

sp75\_907\_1lag | .9904642 .0652303 -0.15 0.884 .8705226 1.126931

sp77\_1437\_1lag | .7827308 .1008094 -1.90 0.057 .6081133 1.007489

sp77\_207\_1lag | 1.038708 .0251826 1.57 0.117 .9905052 1.089256

sp77\_507\_1lag | .9513726 .085008 -0.56 0.577 .7985337 1.133465

sp77\_807\_1lag | .8263086 .1004077 -1.57 0.116 .651193 1.048515

sp48\_28\_1lag | .9209356 .0803998 -0.94 0.345 .7760995 1.092801

sp48\_8\_1lag | 1.052563 .0762934 0.71 0.480 .9131666 1.213238

sp75\_1403\_8\_1lag | .9889999 .0068434 -1.60 0.110 .9756776 1.002504

sp75\_1438\_1lag | 8.233992 3.591924 4.83 0.000 3.501788 19.36115

sp75\_1728\_1lag | 1.329176 .3180205 1.19 0.234 .8316162 2.124429

sp75\_208\_1lag | .9978042 .0150193 -0.15 0.884 .9687969 1.02768

sp75\_518\_1lag | 1.002007 .0104737 0.19 0.848 .9816872 1.022746

sp75\_705\_8\_1lag | 1.17582 .1779521 1.07 0.285 .8740123 1.581846

sp75\_808\_1lag | 1.028644 .0757143 0.38 0.701 .8904539 1.188279

sp75\_818\_1lag | 1.04056 .104347 0.40 0.692 .854887 1.266558

sp77\_1438\_1lag | .4048401 .2766678 -1.32 0.186 .1060651 1.545236

sp77\_208\_1lag | 1.011941 .0154762 0.78 0.438 .9820584 1.042733

sp77\_408\_1lag | .9515531 .0794951 -0.59 0.552 .8078328 1.120842

sp77\_508\_1lag | .8927546 .0754431 -1.34 0.179 .7564852 1.053571

sp77\_704\_8\_1lag | .9573312 .1751139 -0.24 0.812 .6689004 1.370134

sp77\_808\_1lag | 1.267668 .319795 0.94 0.347 .7731659 2.078445

sp75\_1403\_9\_1lag | .9703252 .0241614 -1.21 0.226 .9241067 1.018855

sp75\_1729\_1lag | 1.126132 .1553886 0.86 0.389 .8592837 1.475848

sp75\_1909\_1lag | 1.009057 .0046334 1.96 0.050 1.000016 1.018179

sp75\_519\_1lag | .8090074 .2309951 -0.74 0.458 .462285 1.415778

sp75\_809\_1lag | .9879002 .0297994 -0.40 0.687 .9311875 1.048067

sp75\_819\_1lag | 2.062633 .6891157 2.17 0.030 1.071617 3.970126

sp77\_309\_1lag | 1.512471 .4089652 1.53 0.126 .8902785 2.569496

sp77\_409\_1lag | .9262056 .1411527 -0.50 0.615 .687045 1.248618

sp77\_509\_1lag | .9434953 .0430361 -1.28 0.202 .8628066 1.03173

sp77\_704\_9\_1lag | .6345063 .2895049 -1.00 0.319 .2594538 1.551715

sp77\_809\_1lag | .843725 .0470134 -3.05 0.002 .7564338 .9410895

sp72\_610\_1lag | .9973815 .2358471 -0.01 0.991 .6274524 1.585411

sp72\_620\_1lag | 1.311696 .1811962 1.96 0.050 1.000574 1.71956

sp72\_630\_1lag | 1.014579 .0077313 1.90 0.058 .9995384 1.029845

sp75\_100\_1lag | 1.05752 .1193207 0.50 0.620 .8477088 1.319259

sp75\_1101\_20\_1lag | .9136912 .1432251 -0.58 0.565 .6720009 1.242307

sp75\_1400\_1lag | 1.012924 .0369925 0.35 0.725 .9429542 1.088086

sp75\_1403\_10\_1lag | .9932026 .0117961 -0.57 0.566 .9703496 1.016594

sp75\_150\_1lag | 1.410568 .2891099 1.68 0.093 .9439122 2.10793

sp75\_160\_1lag | .838459 .183708 -0.80 0.421 .5457351 1.288195

sp75\_1712\_10\_1lag | .8468162 .0550233 -2.56 0.010 .7455571 .9618281

sp75\_1720\_1lag | 1.032914 .0342849 0.98 0.329 .9678561 1.102345

sp75\_1730\_1lag | .9361793 .038032 -1.62 0.105 .8645283 1.013769

sp75\_1910\_1lag | .9914707 .0064902 -1.31 0.191 .9788315 1.004273

sp75\_320\_1lag | .9630406 .0190694 -1.90 0.057 .9263813 1.001151

sp75\_340\_1lag | 1.006988 .0098667 0.71 0.477 .9878336 1.026513

sp75\_520\_1lag | 1.020626 .0251266 0.83 0.407 .9725479 1.071081

sp75\_600\_1lag | .9784108 .2846339 -0.08 0.940 .5532156 1.730406

sp75\_700\_1lag | .9651402 .0296311 -1.16 0.248 .9087771 1.024999

sp75\_800\_1lag | 1.019558 .0854353 0.23 0.817 .8651355 1.201544

sp75\_810\_1lag | 1.089315 .0366384 2.54 0.011 1.019821 1.163545

sp75\_820\_1lag | 1.028073 .1100107 0.26 0.796 .8335655 1.267968

sp75\_900\_1lag | .9812639 .0199769 -0.93 0.353 .9428807 1.02121

sp77\_1710\_1lag | .9664182 .0195688 -1.69 0.092 .9288152 1.005544

sp77\_200\_1lag | 1.003583 .0108254 0.33 0.740 .9825879 1.025026

sp77\_210\_1lag | .9954569 .0589532 -0.08 0.939 .8863646 1.117976

sp77\_400\_1lag | 1.013066 .0083892 1.57 0.117 .9967566 1.029643

sp77\_410\_1lag | 1.009794 .0132268 0.74 0.457 .9842002 1.036054

sp77\_500\_1lag | .8932179 .108524 -0.93 0.353 .7039443 1.133383

sp77\_510\_1lag | .9525712 .2532398 -0.18 0.855 .5657266 1.603941

sp77\_600\_1lag | 1.257691 .1764274 1.63 0.102 .9553628 1.655692

sp77\_700\_1lag | .8275078 .0768859 -2.04 0.042 .6897389 .9927948

sp77\_800\_1lag | 1.266918 .2963846 1.01 0.312 .8009721 2.003918

sp77\_810\_1lag | 1.013891 .1321571 0.11 0.916 .7853079 1.309008

sp77\_900\_1lag | .8461376 .1106257 -1.28 0.201 .6548672 1.093273

mine\_time | .9968871 .0069848 -0.44 0.656 .9832908 1.010671

onsite\_insp\_hours | .9998546 .0000493 -2.95 0.003 .999758 .9999512

|

state |

1 | 1.265592 .1432326 2.08 0.037 1.013817 1.579894

2 | 1.944093 .1436843 8.99 0.000 1.681924 2.247128

3 | .7520159 .1395749 -1.54 0.125 .5226887 1.081959

4 | 1.010355 .0929827 0.11 0.911 .8436026 1.210068

5 | .8525658 .1471447 -0.92 0.355 .6078811 1.195741

6 | .9030905 .0491938 -1.87 0.061 .8116411 1.004844

7 | .9951077 .2563307 -0.02 0.985 .6006318 1.648663

8 | 1.11667 .1175968 1.05 0.295 .9084158 1.372667

9 | .8761336 .0674709 -1.72 0.086 .7533893 1.018876

10 | .9858281 .1357136 -0.10 0.917 .7526983 1.291164

11 | .8089237 .220931 -0.78 0.438 .4736197 1.38161

12 | 1.013948 .0898786 0.16 0.876 .8522429 1.206336

13 | 1.379867 .2064983 2.15 0.031 1.029092 1.850207

14 | .6281959 .0898854 -3.25 0.001 .4745707 .8315518

15 | .6956067 .0450741 -5.60 0.000 .6126428 .7898054

17 | 1.284296 .1524445 2.11 0.035 1.01772 1.620697

|

time |

2000 | 1.063586 .0669887 0.98 0.328 .9400708 1.203329

2002 | .9422478 .0603229 -0.93 0.353 .831134 1.068216

2003 | .8493997 .0583846 -2.37 0.018 .7423414 .9718976

2004 | .8790312 .058891 -1.92 0.054 .770864 1.002376

2005 | .7539578 .0519676 -4.10 0.000 .6586834 .863013

2006 | .7223056 .0558492 -4.21 0.000 .6207339 .8404976

2007 | .6743411 .0524511 -5.07 0.000 .5789913 .7853933

2008 | .6283071 .0485939 -6.01 0.000 .5399321 .7311471

2009 | .5333399 .0436054 -7.69 0.000 .4543709 .6260335

2010 | .520162 .0427061 -7.96 0.000 .4428469 .6109753

2011 | .5388865 .0449907 -7.41 0.000 .457543 .6346915

2012 | .5497155 .0466231 -7.05 0.000 .465527 .6491291

2013 | .4865022 .04539 -7.72 0.000 .4051994 .5841183

2014 | .4538958 .0438623 -8.17 0.000 .3755781 .5485448

2015 | .4874738 .0524309 -6.68 0.000 .3948201 .6018709

|

\_cons | .000017 1.06e-06 -175.66 0.000 .000015 .0000192

ln(hours) | 1 (exposure)

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

/lnalpha | -1.957721 .1482573 -2.2483 -1.667142

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

alpha | .1411798 .0209309 .1055785 .1887858

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

(est1 stored)

**. lrtest pois nbin, stats force**

Likelihood-ratio test LR chi2(1) = 243.13

(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 -8596.164 339 17870.33 20155.47

nbin | 6,253 -8961.932 -8474.599 340 17629.2 19921.08

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

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

**. summ MR spcv2\_yhat**

Variable | Obs Mean Std. Dev. Min Max

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

MR | 6,253 1.881017 3.268911 0 37

spcv2\_yhat | 6,253 1.910749 3.022264 2.41e-10 52.48495