. // Model SP.C.SSV.3

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

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

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

Iteration 0: log pseudolikelihood = -9198.6925

Iteration 1: log pseudolikelihood = -8622.7361

Iteration 2: log pseudolikelihood = -8617.3236

Iteration 3: log pseudolikelihood = -8616.8013

Iteration 4: log pseudolikelihood = -8616.6771

Iteration 5: log pseudolikelihood = -8616.6398

Iteration 6: log pseudolikelihood = -8616.6315

Iteration 7: log pseudolikelihood = -8616.6297

Iteration 8: log pseudolikelihood = -8616.6293

Iteration 9: log pseudolikelihood = -8616.6292

Iteration 10: log pseudolikelihood = -8616.6292

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,944

Scale parameter = 1

Deviance = 7658.39272 (1/df) Deviance = 1.288424

Pearson = 8462.744941 (1/df) Pearson = 1.423746

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

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

AIC = 2.854831

Log pseudolikelihood = -8616.629207 BIC = -44297.02

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

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

| Robust

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

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

sp47\_41\_ss\_c\_4lag | .8249772 .0678707 -2.34 0.019 .702124 .9693265

sp47\_44\_ss\_c\_4lag | .9904569 .0706605 -0.13 0.893 .8612113 1.139099

sp48\_11\_ss\_c\_4lag | .9784464 .017556 -1.21 0.225 .9446352 1.013468

sp48\_25\_ss\_c\_4lag | .9948127 .0251047 -0.21 0.837 .9468054 1.045254

sp48\_26\_ss\_c\_4lag | 1.061949 .0251353 2.54 0.011 1.01381 1.112374

sp48\_27\_ss\_c\_4lag | .9995761 .0266761 -0.02 0.987 .9486357 1.053252

sp48\_28\_ss\_c\_4lag | .9955519 .0273091 -0.16 0.871 .9434405 1.050542

sp48\_4\_ss\_c\_4lag | 1.359307 .1507662 2.77 0.006 1.093723 1.689381

sp48\_5\_ss\_c\_4lag | .9782114 .0365076 -0.59 0.555 .9092122 1.052447

sp48\_6\_ss\_c\_4lag | .9733835 .0293278 -0.90 0.371 .9175665 1.032596

sp48\_7\_ss\_c\_4lag | 1.053382 .0195707 2.80 0.005 1.015714 1.092447

sp48\_8\_ss\_c\_4lag | .9712081 .0458364 -0.62 0.536 .8854001 1.065332

sp71\_701\_ss\_c\_4lag | 1.196692 .0952651 2.26 0.024 1.023813 1.398763

sp72\_503\_ss\_c\_4lag | .995669 .0669899 -0.06 0.949 .87266 1.136017

sp72\_610\_ss\_c\_4lag | .8886644 .0980851 -1.07 0.285 .7157933 1.103286

sp72\_620\_ss\_c\_4lag | 1.204551 .0873357 2.57 0.010 1.044982 1.388485

sp72\_630\_ss\_c\_4lag | 1.001407 .0030625 0.46 0.646 .9954223 1.007427

sp75\_100\_ss\_c\_4lag | 1.07181 .0778711 0.95 0.340 .9295539 1.235836

sp75\_1001\_1\_ss\_c\_4lag | 1.190223 .2738741 0.76 0.449 .7581662 1.868498

sp75\_1001\_ss\_c\_4lag | 1.109386 .160054 0.72 0.472 .8361368 1.471932

sp75\_1003\_1\_ss\_c\_4lag | .8460448 .0604857 -2.34 0.019 .735426 .9733023

sp75\_1100\_2\_ss\_c\_4lag | 1.003036 .0046657 0.65 0.515 .9939326 1.012222

sp75\_1101\_20\_ss\_c\_4lag | .9494816 .0459524 -1.07 0.284 .8635562 1.043957

sp75\_1102\_ss\_c\_4lag | .9750781 .0181076 -1.36 0.174 .9402259 1.011222

sp75\_1103\_4\_ss\_c\_4lag | 1.020903 .0097726 2.16 0.031 1.001927 1.040237

sp75\_1104\_ss\_c\_4lag | 1.031658 .0464203 0.69 0.489 .9445727 1.126773

sp75\_1106\_2\_ss\_c\_4lag | .985636 .0179815 -0.79 0.428 .9510156 1.021517

sp75\_1106\_3\_ss\_c\_4lag | 1.017272 .0082678 2.11 0.035 1.001196 1.033607

sp75\_1106\_4\_ss\_c\_4lag | 1.038183 .0634473 0.61 0.540 .9209879 1.170292

sp75\_1106\_5\_ss\_c\_4lag | .9966356 .0264037 -0.13 0.899 .9462059 1.049753

sp75\_1106\_6\_ss\_c\_4lag | .8570067 .0890431 -1.49 0.137 .699108 1.050568

sp75\_1106\_ss\_c\_4lag | .982932 .0342563 -0.49 0.621 .9180326 1.052419

sp75\_1107\_14\_ss\_c\_4lag | 1.153583 .1738542 0.95 0.343 .8585509 1.55

sp75\_1400\_1\_ss\_c\_4lag | .9855693 .04806 -0.30 0.766 .8957347 1.084414

sp75\_1400\_2\_ss\_c\_4lag | .8242922 .180203 -0.88 0.377 .5370261 1.265223

sp75\_1400\_3\_ss\_c\_4lag | .9965108 .0321985 -0.11 0.914 .9353595 1.06166

sp75\_1400\_4\_ss\_c\_4lag | .9458639 .058675 -0.90 0.370 .8375792 1.068148

sp75\_1400\_ss\_c\_4lag | 1.009129 .025626 0.36 0.720 .9601326 1.060626

sp75\_1401\_ss\_c\_4lag | .9971022 .0530527 -0.05 0.957 .8983589 1.106699

sp75\_1403\_10\_ss\_c\_4lag | .9951381 .0059619 -0.81 0.416 .9835213 1.006892

sp75\_1403\_11\_ss\_c\_4lag | 1.695891 .3722247 2.41 0.016 1.102988 2.607504

sp75\_1403\_3\_ss\_c\_4lag | 1.058526 .1550203 0.39 0.698 .7944083 1.410455

sp75\_1403\_4\_ss\_c\_4lag | 1.016842 .0869389 0.20 0.845 .8599574 1.202349

sp75\_1403\_5\_ss\_c\_4lag | .9950449 .0033322 -1.48 0.138 .9885353 1.001597

sp75\_1403\_6\_ss\_c\_4lag | .9984676 .0034927 -0.44 0.661 .9916455 1.005337

sp75\_1403\_7\_ss\_c\_4lag | 1.02218 .0151364 1.48 0.138 .9929397 1.052282

sp75\_1403\_8\_ss\_c\_4lag | .9946258 .0073279 -0.73 0.465 .9803666 1.009092

sp75\_1403\_9\_ss\_c\_4lag | .962016 .0298031 -1.25 0.211 .905341 1.022239

sp75\_1404\_1\_ss\_c\_4lag | .829562 .0957472 -1.62 0.105 .661613 1.040145

sp75\_1404\_ss\_c\_4lag | .8901273 .0927407 -1.12 0.264 .7257166 1.091785

sp75\_1405\_1\_ss\_c\_4lag | 1.136808 .1726861 0.84 0.399 .8440848 1.531047

sp75\_1405\_ss\_c\_4lag | 1.005011 .0054743 0.92 0.359 .9943385 1.015798

sp75\_1431\_ss\_c\_4lag | 1.004833 .1082878 0.04 0.964 .8135096 1.241153

sp75\_1432\_ss\_c\_4lag | .0007608 .0003229 -16.92 0.000 .0003311 .0017478

sp75\_1433\_ss\_c\_4lag | 1.029655 .0516622 0.58 0.560 .9332189 1.136057

sp75\_1434\_ss\_c\_4lag | 1.048795 .0330652 1.51 0.131 .9859503 1.115646

sp75\_1435\_ss\_c\_4lag | .8179051 .1144941 -1.44 0.151 .6216528 1.076113

sp75\_1437\_ss\_c\_4lag | 1.074706 .096317 0.80 0.421 .901578 1.281078

sp75\_150\_ss\_c\_4lag | 1.108142 .0922495 1.23 0.217 .9413163 1.304534

sp75\_151\_ss\_c\_4lag | .9556068 .0832715 -0.52 0.602 .8055743 1.133582

sp75\_153\_ss\_c\_4lag | .8689689 .2366282 -0.52 0.606 .5095822 1.481816

sp75\_155\_ss\_c\_4lag | .9844747 .07837 -0.20 0.844 .8422556 1.150708

sp75\_156\_ss\_c\_4lag | .8081189 .103871 -1.66 0.097 .6281548 1.039642

sp75\_1600\_2\_ss\_c\_4lag | .9436962 .0447541 -1.22 0.222 .859933 1.035618

sp75\_1712\_10\_ss\_c\_4lag | .987278 .0404557 -0.31 0.755 .9110868 1.069841

sp75\_1712\_6\_ss\_c\_4lag | 1.104454 .2566496 0.43 0.669 .7004034 1.741595

sp75\_1720\_ss\_c\_4lag | 1.006257 .0119539 0.53 0.600 .9830983 1.029961

sp75\_1721\_ss\_c\_4lag | 3.61e-06 2.99e-06 -15.13 0.000 7.11e-07 .0000183

sp75\_1725\_ss\_c\_4lag | 1.001248 .0012558 0.99 0.320 .9987895 1.003712

sp75\_1726\_ss\_c\_4lag | 1.039768 .0355782 1.14 0.254 .9723232 1.111892

sp75\_1727\_ss\_c\_4lag | 1.225889 .1203861 2.07 0.038 1.011255 1.486078

sp75\_1728\_ss\_c\_4lag | 1.185213 .0704237 2.86 0.004 1.054919 1.3316

sp75\_1729\_ss\_c\_4lag | 1.028862 .055708 0.53 0.599 .9252704 1.144052

sp75\_1730\_ss\_c\_4lag | .9830547 .0326593 -0.51 0.607 .9210831 1.049196

sp75\_1731\_ss\_c\_4lag | 1.000962 .0012755 0.75 0.451 .9984649 1.003465

sp75\_1903\_ss\_c\_4lag | 1.010116 .0399227 0.25 0.799 .9348228 1.091473

sp75\_1909\_ss\_c\_4lag | .9995931 .0047354 -0.09 0.932 .9903548 1.008918

sp75\_1910\_ss\_c\_4lag | .9959824 .0094533 -0.42 0.671 .9776255 1.014684

sp75\_1911\_ss\_c\_4lag | .9842978 .0117879 -1.32 0.186 .961463 1.007675

sp75\_1912\_ss\_c\_4lag | 1.120769 .0987678 1.29 0.196 .9429835 1.332074

sp75\_1913\_ss\_c\_4lag | 1.035618 .0189098 1.92 0.055 .999211 1.073352

sp75\_1914\_ss\_c\_4lag | 1.006416 .0035335 1.82 0.069 .9995139 1.013365

sp75\_1915\_ss\_c\_4lag | 1.08736 .0772742 1.18 0.239 .9459803 1.24987

sp75\_202\_ss\_c\_4lag | 1.000521 .0007748 0.67 0.501 .9990038 1.002041

sp75\_208\_ss\_c\_4lag | 1.009687 .0058375 1.67 0.095 .9983108 1.021194

sp75\_211\_ss\_c\_4lag | 1.000878 .0058055 0.15 0.880 .9895635 1.012321

sp75\_212\_ss\_c\_4lag | .9884337 .0185245 -0.62 0.535 .952785 1.025416

sp75\_214\_ss\_c\_4lag | .9402035 .0457299 -1.27 0.205 .8547141 1.034244

sp75\_312\_ss\_c\_4lag | 1.01653 .0593749 0.28 0.779 .9065718 1.139826

sp75\_320\_ss\_c\_4lag | 1.003298 .0157314 0.21 0.834 .9729338 1.034609

sp75\_324\_ss\_c\_4lag | .9854027 .0164788 -0.88 0.379 .9536285 1.018236

sp75\_337\_ss\_c\_4lag | 1.021678 .0095142 2.30 0.021 1.0032 1.040497

sp75\_340\_ss\_c\_4lag | 1.001368 .0049924 0.27 0.784 .9916308 1.011201

sp75\_342\_ss\_c\_4lag | 1.003217 .0031926 1.01 0.313 .996979 1.009494

sp75\_344\_ss\_c\_4lag | .9821314 .0274563 -0.64 0.519 .9297657 1.037446

sp75\_352\_ss\_c\_4lag | 1.007411 .0137666 0.54 0.589 .980787 1.034758

sp75\_382\_ss\_c\_4lag | 1.089679 .0402336 2.33 0.020 1.013609 1.171459

sp75\_503\_ss\_c\_4lag | .9969284 .0015379 -1.99 0.046 .9939188 .9999471

sp75\_504\_ss\_c\_4lag | .8501867 .068579 -2.01 0.044 .725861 .9958069

sp75\_505\_ss\_c\_4lag | .985658 .0787158 -0.18 0.856 .8428462 1.152668

sp75\_506\_1\_ss\_c\_4lag | 1.016848 .0731362 0.23 0.816 .8831484 1.170787

sp75\_506\_ss\_c\_4lag | 1.00479 .0603547 0.08 0.937 .8931944 1.130327

sp75\_507\_ss\_c\_4lag | 1.012532 .0252215 0.50 0.617 .9642862 1.063192

sp75\_511\_1\_ss\_c\_4lag | .7426779 .1292714 -1.71 0.087 .5280066 1.044628

sp75\_511\_ss\_c\_4lag | 1.042854 .0160518 2.73 0.006 1.011863 1.074794

sp75\_512\_1\_ss\_c\_4lag | 1.315017 .1673255 2.15 0.031 1.024761 1.687485

sp75\_512\_2\_ss\_c\_4lag | .996592 .0163761 -0.21 0.835 .9650067 1.029211

sp75\_512\_ss\_c\_4lag | 1.000018 .0020205 0.01 0.993 .9960655 1.003986

sp75\_513\_1\_ss\_c\_4lag | .877477 .104773 -1.09 0.274 .6943847 1.108846

sp75\_513\_ss\_c\_4lag | .9784893 .0486853 -0.44 0.662 .887573 1.078718

sp75\_514\_ss\_c\_4lag | 1.011 .0080266 1.38 0.168 .9953896 1.026855

sp75\_515\_ss\_c\_4lag | .9644818 .0087573 -3.98 0.000 .9474697 .9817994

sp75\_516\_1\_ss\_c\_4lag | .8764315 .0865257 -1.34 0.182 .7222426 1.063537

sp75\_516\_2\_ss\_c\_4lag | .9334238 .1038755 -0.62 0.536 .7505046 1.160925

sp75\_516\_ss\_c\_4lag | 1.020159 .0131085 1.55 0.120 .9947877 1.046177

sp75\_517\_1\_ss\_c\_4lag | .9148037 .0686355 -1.19 0.235 .789704 1.059721

sp75\_517\_ss\_c\_4lag | 1.000946 .0012257 0.77 0.440 .9985461 1.003351

sp75\_518\_1\_ss\_c\_4lag | .9481004 .0223206 -2.26 0.024 .9053468 .9928731

sp75\_518\_ss\_c\_4lag | 1.027403 .0062382 4.45 0.000 1.015249 1.039703

sp75\_519\_ss\_c\_4lag | 1.369972 .178009 2.42 0.015 1.061964 1.767313

sp75\_520\_ss\_c\_4lag | .9849085 .0120791 -1.24 0.215 .9615162 1.00887

sp75\_523\_1\_ss\_c\_4lag | .9929812 .0107864 -0.65 0.517 .9720638 1.014349

sp75\_523\_2\_ss\_c\_4lag | .9990528 .0107867 -0.09 0.930 .9781335 1.02042

sp75\_523\_ss\_c\_4lag | .9859712 .0097986 -1.42 0.155 .9669521 1.005364

sp75\_600\_1\_ss\_c\_4lag | .8193055 .0827395 -1.97 0.048 .6721795 .9986342

sp75\_600\_ss\_c\_4lag | .9390147 .0527344 -1.12 0.263 .8411424 1.048275

sp75\_601\_1\_ss\_c\_4lag | 1.001499 .0075148 0.20 0.842 .9868779 1.016336

sp75\_601\_2\_ss\_c\_4lag | .9808093 .0519321 -0.37 0.714 .8841276 1.088063

sp75\_601\_3\_ss\_c\_4lag | .9372366 .0638528 -0.95 0.341 .8200832 1.071126

sp75\_601\_ss\_c\_4lag | 1.004439 .0079834 0.56 0.577 .9889126 1.020208

sp75\_602\_ss\_c\_4lag | 1.033755 .0236075 1.45 0.146 .9885053 1.081076

sp75\_603\_ss\_c\_4lag | .9946638 .020478 -0.26 0.795 .9553267 1.035621

sp75\_604\_ss\_c\_4lag | 1.004988 .0018958 2.64 0.008 1.001279 1.00871

sp75\_605\_ss\_c\_4lag | 1.0125 .0104915 1.20 0.231 .9921446 1.033273

sp75\_606\_ss\_c\_4lag | .9928422 .0048978 -1.46 0.145 .983289 1.002488

sp75\_607\_ss\_c\_4lag | 1.00433 .0159679 0.27 0.786 .9735157 1.036119

sp75\_700\_1\_ss\_c\_4lag | .8173775 .0661502 -2.49 0.013 .6974853 .9578782

sp75\_700\_ss\_c\_4lag | .9734257 .0175523 -1.49 0.135 .9396247 1.008443

sp75\_701\_1\_ss\_c\_4lag | .9808743 .021426 -0.88 0.377 .9397664 1.02378

sp75\_701\_2\_ss\_c\_4lag | 1.022478 .032593 0.70 0.486 .9605514 1.088397

sp75\_701\_3\_ss\_c\_4lag | 1.029229 .024936 1.19 0.234 .9814971 1.079281

sp75\_701\_4\_ss\_c\_4lag | 1.125668 .160279 0.83 0.406 .8515527 1.488022

sp75\_701\_ss\_c\_4lag | 1.004341 .0070721 0.62 0.538 .9905751 1.018298

sp75\_703\_2\_ss\_c\_4lag | 1.058114 .0517492 1.16 0.248 .9613973 1.164561

sp75\_703\_3\_ss\_c\_4lag | 1.029319 .0533181 0.56 0.577 .9299469 1.139309

sp75\_703\_ss\_c\_4lag | 1.001391 .0167682 0.08 0.934 .9690591 1.034801

sp75\_704\_ss\_c\_4lag | 1.099926 .1531116 0.68 0.494 .8372878 1.444948

sp75\_705\_1\_ss\_c\_4lag | .9203679 .0283123 -2.70 0.007 .8665165 .977566

sp75\_705\_8\_ss\_c\_4lag | .8630124 .0466929 -2.72 0.006 .7761812 .9595573

sp75\_705\_ss\_c\_4lag | 1.05725 .0520395 1.13 0.258 .9600202 1.164328

sp75\_706\_ss\_c\_4lag | .9534489 .0409402 -1.11 0.267 .8764913 1.037163

sp75\_800\_2\_ss\_c\_4lag | 8.77e-08 8.79e-08 -16.21 0.000 1.23e-08 6.26e-07

sp75\_800\_3\_ss\_c\_4lag | 1.18595 .1775369 1.14 0.255 .8843852 1.590345

sp75\_800\_4\_ss\_c\_4lag | 1.371696 .2714751 1.60 0.110 .9306684 2.02172

sp75\_800\_ss\_c\_4lag | 1.015167 .0253579 0.60 0.547 .9666634 1.066104

sp75\_801\_ss\_c\_4lag | .912878 .0782683 -1.06 0.288 .7716715 1.079923

sp75\_802\_ss\_c\_4lag | .8909807 .0775966 -1.33 0.185 .7511664 1.056819

sp75\_803\_2\_ss\_c\_4lag | 1.109025 .1459349 0.79 0.432 .8569058 1.435323

sp75\_803\_ss\_c\_4lag | 1.027053 .0281865 0.97 0.331 .9732683 1.083811

sp75\_804\_ss\_c\_4lag | .9828619 .0235635 -0.72 0.471 .9377465 1.030148

sp75\_805\_ss\_c\_4lag | .9465204 .0546436 -0.95 0.341 .8452579 1.059914

sp75\_806\_ss\_c\_4lag | 1.223359 .086152 2.86 0.004 1.065639 1.404422

sp75\_807\_ss\_c\_4lag | 1.017346 .0069851 2.50 0.012 1.003747 1.031129

sp75\_808\_ss\_c\_4lag | .9517666 .0452595 -1.04 0.299 .867068 1.044739

sp75\_809\_ss\_c\_4lag | .9894243 .0217082 -0.48 0.628 .9477789 1.0329

sp75\_810\_ss\_c\_4lag | 1.043666 .0374714 1.19 0.234 .9727477 1.119754

sp75\_811\_ss\_c\_4lag | .9900758 .0317464 -0.31 0.756 .9297689 1.054294

sp75\_812\_ss\_c\_4lag | 1.003249 .0539599 0.06 0.952 .9028731 1.114784

sp75\_814\_ss\_c\_4lag | .9508572 .0271633 -1.76 0.078 .8990812 1.005615

sp75\_815\_ss\_c\_4lag | 1.348891 .1318565 3.06 0.002 1.113705 1.633741

sp75\_816\_ss\_c\_4lag | 1.048259 .0262353 1.88 0.060 .9980794 1.100961

sp75\_818\_ss\_c\_4lag | 1.09148 .060285 1.58 0.113 .9794945 1.216269

sp75\_819\_ss\_c\_4lag | 1.038866 .1574222 0.25 0.801 .7719244 1.39812

sp75\_820\_ss\_c\_4lag | .9896756 .0305671 -0.34 0.737 .9315424 1.051437

sp75\_821\_ss\_c\_4lag | 1.204183 .0963851 2.32 0.020 1.029345 1.408719

sp75\_825\_ss\_c\_4lag | 1.034444 .0741514 0.47 0.637 .8988576 1.190483

sp75\_827\_ss\_c\_4lag | 1.056432 .0853574 0.68 0.497 .9017086 1.237704

sp75\_831\_ss\_c\_4lag | .9513872 .0426418 -1.11 0.266 .8713766 1.038744

sp75\_900\_2\_ss\_c\_4lag | .9776497 .0867719 -0.25 0.799 .8215506 1.163408

sp75\_900\_3\_ss\_c\_4lag | .992585 .0610839 -0.12 0.904 .8798012 1.119827

sp75\_900\_4\_ss\_c\_4lag | 1.048803 .0519891 0.96 0.336 .9517 1.155814

sp75\_900\_ss\_c\_4lag | .9922026 .0106354 -0.73 0.465 .9715751 1.013268

sp75\_901\_ss\_c\_4lag | .9631327 .0400213 -0.90 0.366 .8878017 1.044856

sp75\_902\_1\_ss\_c\_4lag | 1.089031 .081191 1.14 0.253 .9409795 1.260376

sp75\_902\_2\_ss\_c\_4lag | 1.060943 .0181192 3.46 0.001 1.026018 1.097057

sp75\_902\_4\_ss\_c\_4lag | .9889485 .0188899 -0.58 0.561 .9526095 1.026674

sp75\_902\_ss\_c\_4lag | 1.008882 .0099275 0.90 0.369 .9896111 1.028529

sp75\_903\_ss\_c\_4lag | 1.002665 .0172846 0.15 0.877 .9693539 1.037121

sp75\_904\_ss\_c\_4lag | 1.001689 .0035205 0.48 0.631 .9948129 1.008613

sp75\_905\_ss\_c\_4lag | 1.067552 .1392339 0.50 0.616 .8267464 1.378497

sp75\_907\_ss\_c\_4lag | 1.01579 .0664109 0.24 0.811 .8936213 1.15466

sp77\_103\_ss\_c\_4lag | 1.042312 .023619 1.83 0.067 .9970325 1.089648

sp77\_1103\_ss\_c\_4lag | .9577414 .0210703 -1.96 0.050 .917322 .9999417

sp77\_1104\_ss\_c\_4lag | 1.00995 .0039099 2.56 0.011 1.002315 1.017642

sp77\_1106\_ss\_c\_4lag | .0144503 .0036402 -16.82 0.000 .0088197 .0236757

sp77\_1111\_ss\_c\_4lag | .8798846 .0931021 -1.21 0.227 .7150867 1.082662

sp77\_1112\_ss\_c\_4lag | 1.001808 .0221993 0.08 0.935 .9592299 1.046277

sp77\_1403\_ss\_c\_4lag | .8589275 .0993097 -1.32 0.188 .6847627 1.07739

sp77\_1433\_ss\_c\_4lag | .864992 .0761874 -1.65 0.100 .7278456 1.027981

sp77\_1434\_ss\_c\_4lag | .9587885 .0423557 -0.95 0.341 .8792653 1.045504

sp77\_1437\_ss\_c\_4lag | .8946849 .0519315 -1.92 0.055 .7984772 1.002484

sp77\_1438\_ss\_c\_4lag | .6453081 .1852786 -1.53 0.127 .367598 1.132821

sp77\_1605\_ss\_c\_4lag | 1.002605 .0059456 0.44 0.661 .9910196 1.014327

sp77\_1606\_ss\_c\_4lag | 1.00966 .0073504 1.32 0.187 .9953555 1.024169

sp77\_1710\_ss\_c\_4lag | .992566 .0092531 -0.80 0.423 .9745948 1.010869

sp77\_1802\_ss\_c\_4lag | .8722697 .0843357 -1.41 0.158 .7216923 1.054264

sp77\_1906\_ss\_c\_4lag | 1.244951 .2078189 1.31 0.189 .8975567 1.726803

sp77\_1915\_ss\_c\_4lag | 1.042816 .0691502 0.63 0.527 .9157219 1.18755

sp77\_1916\_ss\_c\_4lag | 1.077412 .0621821 1.29 0.196 .962178 1.206448

sp77\_200\_ss\_c\_4lag | .993565 .0051292 -1.25 0.211 .9835626 1.003669

sp77\_202\_ss\_c\_4lag | .9786353 .0061754 -3.42 0.001 .9666063 .9908139

sp77\_203\_ss\_c\_4lag | .951368 .0591483 -0.80 0.423 .8422244 1.074656

sp77\_204\_ss\_c\_4lag | .9951385 .0080417 -0.60 0.546 .9795013 1.011025

sp77\_205\_ss\_c\_4lag | 1.002807 .0027499 1.02 0.307 .9974317 1.008211

sp77\_206\_ss\_c\_4lag | 1.01916 .0197565 0.98 0.328 .9811642 1.058627

sp77\_207\_ss\_c\_4lag | 1.049873 .0177408 2.88 0.004 1.015671 1.085226

sp77\_208\_ss\_c\_4lag | 1.01106 .0096713 1.15 0.250 .9922808 1.030194

sp77\_210\_ss\_c\_4lag | .9818423 .0250445 -0.72 0.473 .9339629 1.032176

sp77\_216\_ss\_c\_4lag | 1.018293 .0707753 0.26 0.794 .8886095 1.166903

sp77\_315\_ss\_c\_4lag | .7463346 .1297497 -1.68 0.092 .5308268 1.049335

sp77\_400\_ss\_c\_4lag | 1.001936 .0030001 0.65 0.518 .9960735 1.007834

sp77\_401\_ss\_c\_4lag | .999163 .0303893 -0.03 0.978 .9413415 1.060536

sp77\_402\_ss\_c\_4lag | 1.001063 .0171885 0.06 0.951 .9679342 1.035325

sp77\_403\_1\_ss\_c\_4lag | 1.043602 .0497863 0.89 0.371 .9504456 1.145889

sp77\_403\_ss\_c\_4lag | 1.210264 .1416465 1.63 0.103 .9621828 1.522309

sp77\_404\_ss\_c\_4lag | .9926407 .0033481 -2.19 0.029 .9861003 .9992245

sp77\_405\_ss\_c\_4lag | 1.00643 .0296881 0.22 0.828 .9498929 1.066333

sp77\_408\_ss\_c\_4lag | 1.014586 .058244 0.25 0.801 .9066172 1.135412

sp77\_409\_ss\_c\_4lag | .6345375 .1075708 -2.68 0.007 .4551519 .8846232

sp77\_410\_ss\_c\_4lag | .9995183 .0063754 -0.08 0.940 .9871005 1.012092

sp77\_411\_ss\_c\_4lag | .9142368 .0524525 -1.56 0.118 .8170013 1.023045

sp77\_412\_ss\_c\_4lag | 1.044735 .0451549 1.01 0.311 .9598779 1.137094

sp77\_413\_ss\_c\_4lag | .8906311 .0348242 -2.96 0.003 .8249268 .9615687

sp77\_500\_ss\_c\_4lag | .9403923 .0266716 -2.17 0.030 .8895432 .994148

sp77\_501\_ss\_c\_4lag | .9828967 .029565 -0.57 0.566 .9266253 1.042585

sp77\_502\_1\_ss\_c\_4lag | 1.367816 .1613904 2.65 0.008 1.085409 1.723702

sp77\_502\_2\_ss\_c\_4lag | .9465693 .0325671 -1.60 0.110 .8848436 1.012601

sp77\_502\_ss\_c\_4lag | .9893868 .0039917 -2.64 0.008 .9815941 .9972414

sp77\_503\_1\_ss\_c\_4lag | .8661081 .0789855 -1.58 0.115 .7243459 1.035615

sp77\_503\_ss\_c\_4lag | .9457183 .0590903 -0.89 0.372 .8367141 1.068923

sp77\_504\_ss\_c\_4lag | .9847667 .0188239 -0.80 0.422 .9485551 1.022361

sp77\_505\_ss\_c\_4lag | .9676343 .0133646 -2.38 0.017 .9417915 .9941863

sp77\_506\_1\_ss\_c\_4lag | 1.028324 .0805894 0.36 0.722 .8819043 1.199053

sp77\_506\_ss\_c\_4lag | 1.013425 .0387966 0.35 0.728 .9401682 1.092391

sp77\_507\_ss\_c\_4lag | 1.062436 .0447446 1.44 0.150 .9782599 1.153855

sp77\_508\_1\_ss\_c\_4lag | 1.350278 .1734876 2.34 0.019 1.049684 1.736953

sp77\_508\_ss\_c\_4lag | 1.101387 .0437198 2.43 0.015 1.018946 1.190497

sp77\_509\_ss\_c\_4lag | .9471241 .0274484 -1.87 0.061 .8948256 1.002479

sp77\_510\_ss\_c\_4lag | .9553372 .0379364 -1.15 0.250 .8838031 1.032661

sp77\_511\_ss\_c\_4lag | .971607 .1090729 -0.26 0.798 .7797124 1.210729

sp77\_512\_ss\_c\_4lag | .9870357 .0128371 -1.00 0.316 .9621934 1.012519

sp77\_513\_ss\_c\_4lag | 1.000457 .01987 0.02 0.982 .9622602 1.040169

sp77\_514\_ss\_c\_4lag | 1.39421 .1362486 3.40 0.001 1.151184 1.68854

sp77\_515\_ss\_c\_4lag | 1.077747 .1912336 0.42 0.673 .7611694 1.525994

sp77\_516\_ss\_c\_4lag | .9791658 .0122801 -1.68 0.093 .9553905 1.003533

sp77\_600\_ss\_c\_4lag | 1.034737 .0470776 0.75 0.453 .946461 1.131246

sp77\_601\_ss\_c\_4lag | 1.05321 .0715949 0.76 0.446 .9218325 1.20331

sp77\_602\_ss\_c\_4lag | 1.114845 .0726053 1.67 0.095 .9812486 1.26663

sp77\_603\_ss\_c\_4lag | 1.475213 .1321483 4.34 0.000 1.23767 1.758347

sp77\_604\_ss\_c\_4lag | .9171765 .0544609 -1.46 0.145 .8164122 1.030377

sp77\_605\_ss\_c\_4lag | 1.005056 .2580281 0.02 0.984 .6076604 1.662337

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

sp77\_700\_1\_ss\_c\_4lag | 1.089373 .0714471 1.31 0.192 .9579664 1.238806

sp77\_700\_ss\_c\_4lag | .9859167 .0791866 -0.18 0.860 .8423132 1.154003

sp77\_701\_1\_ss\_c\_4lag | 1.063132 .1140977 0.57 0.568 .8614589 1.312019

sp77\_701\_2\_ss\_c\_4lag | .9363165 .0726765 -0.85 0.397 .804179 1.090166

sp77\_701\_3\_ss\_c\_4lag | 1.066867 .0462037 1.49 0.135 .9800458 1.161379

sp77\_701\_4\_ss\_c\_4lag | .9299964 .0689849 -0.98 0.328 .8041576 1.075527

sp77\_701\_ss\_c\_4lag | .9900493 .0156675 -0.63 0.527 .9598129 1.021238

sp77\_704\_1\_ss\_c\_4lag | 1.070735 .0497084 1.47 0.141 .9776096 1.172732

sp77\_704\_8\_ss\_c\_4lag | 1.040816 .1928152 0.22 0.829 .7239113 1.49645

sp77\_704\_9\_ss\_c\_4lag | 1.427735 .2743648 1.85 0.064 .979657 2.080756

sp77\_704\_ss\_c\_4lag | 1.020595 .1007612 0.21 0.836 .8410386 1.238485

sp77\_705\_ss\_c\_4lag | .9459571 .0694566 -0.76 0.449 .8191666 1.092372

sp77\_800\_1\_ss\_c\_4lag | .9938581 .1518632 -0.04 0.968 .7366468 1.340878

sp77\_800\_2\_ss\_c\_4lag | 1.188198 .0962499 2.13 0.033 1.013765 1.392644

sp77\_800\_ss\_c\_4lag | 1.2588 .2656961 1.09 0.276 .8323251 1.903797

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

sp77\_802\_ss\_c\_4lag | 1.022654 .0996053 0.23 0.818 .8449342 1.237755

sp77\_803\_ss\_c\_4lag | 1.171401 .2485882 0.75 0.456 .7728025 1.775591

sp77\_804\_ss\_c\_4lag | .6942508 .1064656 -2.38 0.017 .5140222 .9376719

sp77\_805\_ss\_c\_4lag | 1.000468 .0764229 0.01 0.995 .8613552 1.162048

sp77\_807\_1\_ss\_c\_4lag | .8633526 .1046966 -1.21 0.226 .6807147 1.094993

sp77\_807\_2\_ss\_c\_4lag | 1.058083 .0805462 0.74 0.458 .9114279 1.228336

sp77\_807\_3\_ss\_c\_4lag | 1.15156 .0364646 4.46 0.000 1.082264 1.225294

sp77\_807\_ss\_c\_4lag | 1.068689 .0721557 0.98 0.325 .9362247 1.219896

sp77\_808\_ss\_c\_4lag | 1.36312 .0976863 4.32 0.000 1.184497 1.56868

sp77\_809\_ss\_c\_4lag | .9744678 .0429841 -0.59 0.558 .8937596 1.062464

sp77\_810\_ss\_c\_4lag | .9435265 .0823298 -0.67 0.505 .7952072 1.11951

sp77\_900\_1\_ss\_c\_4lag | 1.317819 .1471892 2.47 0.013 1.058726 1.640317

sp77\_900\_2\_ss\_c\_4lag | .0178551 .0045249 -15.88 0.000 .0108654 .0293412

sp77\_900\_ss\_c\_4lag | .8822134 .0911428 -1.21 0.225 .7205011 1.080221

sp77\_901\_1\_ss\_c\_4lag | .3693485 .2847839 -1.29 0.196 .0814934 1.673979

sp77\_901\_ss\_c\_4lag | .9855194 .0416267 -0.35 0.730 .9072183 1.070578

sp77\_902\_3\_ss\_c\_4lag | .0007152 .000302 -17.16 0.000 .0003127 .0016361

sp77\_902\_ss\_c\_4lag | .9949582 .048074 -0.10 0.917 .9050588 1.093787

sp77\_903\_ss\_c\_4lag | 1.017334 .0454119 0.38 0.700 .9321104 1.110349

sp77\_904\_ss\_c\_4lag | 1.011649 .0168041 0.70 0.486 .979244 1.045126

mine\_time | .9962401 .0063966 -0.59 0.557 .9837815 1.008856

onsite\_insp\_hours | .9998891 .0000403 -2.75 0.006 .9998101 .9999681

|

state |

1 | 1.114951 .0904392 1.34 0.180 .9510656 1.307076

2 | 1.773957 .17117 5.94 0.000 1.468284 2.143265

3 | .6747334 .1184272 -2.24 0.025 .4783346 .9517714

4 | 1.101669 .0733661 1.45 0.146 .9668629 1.25527

5 | .9095464 .1505814 -0.57 0.567 .6575107 1.258192

6 | .9613115 .0548921 -0.69 0.490 .859527 1.075149

7 | 1.104524 .259601 0.42 0.672 .6968087 1.750801

8 | .8327388 .0708408 -2.15 0.031 .7048512 .9838302

9 | .7944098 .0557785 -3.28 0.001 .6922748 .9116133

10 | 1.120552 .1283243 0.99 0.320 .8952688 1.402525

11 | .9356187 .2353786 -0.26 0.791 .5714228 1.531935

12 | .9725912 .0842694 -0.32 0.748 .820689 1.152609

13 | 1.25732 .191844 1.50 0.133 .9323265 1.695601

14 | .5917527 .0775977 -4.00 0.000 .4576364 .7651737

15 | .6921014 .0467969 -5.44 0.000 .606199 .7901767

17 | 1.097439 .1014571 1.01 0.315 .915562 1.315446

|

time |

2000 | 1.139819 .0788359 1.89 0.058 .9953189 1.305297

2002 | .9991391 .0587517 -0.01 0.988 .8903758 1.121188

2003 | .9110471 .0621531 -1.37 0.172 .7970224 1.041385

2004 | .9039954 .0647782 -1.41 0.159 .7855451 1.040306

2005 | .7960962 .059587 -3.05 0.002 .6874703 .9218858

2006 | .7636492 .0585948 -3.51 0.000 .657024 .8875781

2007 | .7196041 .0589212 -4.02 0.000 .6129108 .8448702

2008 | .6588087 .0524995 -5.24 0.000 .5635446 .7701766

2009 | .5700365 .0484624 -6.61 0.000 .4825436 .6733932

2010 | .5778634 .0506896 -6.25 0.000 .4865849 .6862648

2011 | .5529356 .0485553 -6.75 0.000 .4655083 .6567825

2012 | .5571058 .050279 -6.48 0.000 .4667844 .6649041

2013 | .5326491 .0499972 -6.71 0.000 .4431421 .6402349

2014 | .5262809 .0532101 -6.35 0.000 .4316742 .6416218

2015 | .5233908 .0557035 -6.08 0.000 .4248488 .6447893

|

\_cons | .0000163 1.08e-06 -166.44 0.000 .0000143 .0000185

ln(hours) | 1 (exposure)

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

**. estat gof**

Deviance goodness-of-fit = 7658.392

Prob > chi2(5955) = 0.0000

Pearson goodness-of-fit = 8462.569

Prob > chi2(5955) = 0.0000

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

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

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

Iteration 0: log pseudolikelihood = -9162.5185

Iteration 1: log pseudolikelihood = -9006.2654

Iteration 2: log pseudolikelihood = -9004.2825

Iteration 3: log pseudolikelihood = -9003.9025

Iteration 4: log pseudolikelihood = -9003.8408

Iteration 5: log pseudolikelihood = -9003.827

Iteration 6: log pseudolikelihood = -9003.8247

Iteration 7: log pseudolikelihood = -9003.8244

Iteration 8: log pseudolikelihood = -9003.8244

Iteration 9: log pseudolikelihood = -9003.8244

Generalized linear models No. of obs = 6,253

Optimization : ML Residual df = 5,945

Scale parameter = 1

Deviance = 3693.886382 (1/df) Deviance = .6213434

Pearson = 3966.835704 (1/df) Pearson = .6672558

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

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

AIC = 2.978354

Log pseudolikelihood = -9003.824365 BIC = -48270.27

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

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

| Robust

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

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

sp47\_41\_ss\_c\_4lag | .7707179 .0751472 -2.67 0.008 .6366502 .9330182

sp47\_44\_ss\_c\_4lag | 1.029683 .0832051 0.36 0.717 .878862 1.206385

sp48\_11\_ss\_c\_4lag | .9937063 .0289326 -0.22 0.828 .9385871 1.052062

sp48\_25\_ss\_c\_4lag | .9830556 .0308685 -0.54 0.586 .9243787 1.045457

sp48\_26\_ss\_c\_4lag | 1.077463 .0240701 3.34 0.001 1.031305 1.125688

sp48\_27\_ss\_c\_4lag | 1.006164 .0314716 0.20 0.844 .9463339 1.069778

sp48\_28\_ss\_c\_4lag | .9780847 .040576 -0.53 0.593 .9017044 1.060935

sp48\_4\_ss\_c\_4lag | 1.328879 .1788985 2.11 0.035 1.02069 1.730125

sp48\_5\_ss\_c\_4lag | .962177 .0490319 -0.76 0.449 .8707195 1.063241

sp48\_6\_ss\_c\_4lag | .9547472 .036088 -1.23 0.221 .8865725 1.028164

sp48\_7\_ss\_c\_4lag | 1.066204 .0257668 2.65 0.008 1.01688 1.117921

sp48\_8\_ss\_c\_4lag | 1.041844 .0583868 0.73 0.464 .9334693 1.162802

sp71\_701\_ss\_c\_4lag | 1.303776 .1034365 3.34 0.001 1.11602 1.523119

sp72\_503\_ss\_c\_4lag | 1.008963 .0652439 0.14 0.890 .8888585 1.145295

sp72\_610\_ss\_c\_4lag | .8382248 .1132237 -1.31 0.191 .6432562 1.092288

sp72\_620\_ss\_c\_4lag | 1.066564 .095137 0.72 0.470 .8954883 1.270321

sp72\_630\_ss\_c\_4lag | 1.002432 .0035267 0.69 0.490 .9955437 1.009368

sp75\_100\_ss\_c\_4lag | 1.058331 .0857509 0.70 0.484 .9029281 1.24048

sp75\_1001\_1\_ss\_c\_4lag | .9460414 .4149466 -0.13 0.899 .4004623 2.234903

sp75\_1001\_ss\_c\_4lag | 1.171631 .2759462 0.67 0.501 .7384362 1.858953

sp75\_1003\_1\_ss\_c\_4lag | .8981247 .0977481 -0.99 0.324 .7255971 1.111675

sp75\_1100\_2\_ss\_c\_4lag | 1.000814 .0055322 0.15 0.883 .9900298 1.011716

sp75\_1101\_20\_ss\_c\_4lag | .9704748 .0471126 -0.62 0.537 .8823927 1.067349

sp75\_1102\_ss\_c\_4lag | .9787296 .0203291 -1.04 0.301 .9396854 1.019396

sp75\_1103\_4\_ss\_c\_4lag | 1.030145 .0124905 2.45 0.014 1.005952 1.054919

sp75\_1104\_ss\_c\_4lag | .95987 .0541891 -0.73 0.468 .8593264 1.072177

sp75\_1106\_2\_ss\_c\_4lag | .9669694 .020568 -1.58 0.114 .9274856 1.008134

sp75\_1106\_3\_ss\_c\_4lag | 1.025451 .0104443 2.47 0.014 1.005183 1.046127

sp75\_1106\_4\_ss\_c\_4lag | 1.01007 .0703707 0.14 0.886 .8811478 1.157854

sp75\_1106\_5\_ss\_c\_4lag | .9699049 .032826 -0.90 0.367 .9076546 1.036425

sp75\_1106\_6\_ss\_c\_4lag | .9043934 .1282641 -0.71 0.479 .6849157 1.194201

sp75\_1106\_ss\_c\_4lag | 1.006033 .0663566 0.09 0.927 .8840322 1.144871

sp75\_1107\_14\_ss\_c\_4lag | .9633266 .156634 -0.23 0.818 .7004397 1.324879

sp75\_1400\_1\_ss\_c\_4lag | .9763007 .056527 -0.41 0.679 .8715648 1.093623

sp75\_1400\_2\_ss\_c\_4lag | .5650651 .1287789 -2.50 0.012 .3615004 .8832591

sp75\_1400\_3\_ss\_c\_4lag | .9820109 .0404388 -0.44 0.659 .9058664 1.064556

sp75\_1400\_4\_ss\_c\_4lag | .8705068 .0705037 -1.71 0.087 .7427318 1.020263

sp75\_1400\_ss\_c\_4lag | 1.025873 .0249684 1.05 0.294 .9780844 1.075996

sp75\_1401\_ss\_c\_4lag | 1.041304 .0838971 0.50 0.615 .8891947 1.219434

sp75\_1403\_10\_ss\_c\_4lag | .9954452 .0074797 -0.61 0.543 .9808927 1.010214

sp75\_1403\_11\_ss\_c\_4lag | 1.653814 .4453557 1.87 0.062 .975588 2.80354

sp75\_1403\_3\_ss\_c\_4lag | 1.049309 .1894009 0.27 0.790 .7366498 1.494672

sp75\_1403\_4\_ss\_c\_4lag | 1.015335 .1088903 0.14 0.887 .8228519 1.252844

sp75\_1403\_5\_ss\_c\_4lag | .9914795 .0042402 -2.00 0.045 .9832036 .999825

sp75\_1403\_6\_ss\_c\_4lag | .9987116 .0044406 -0.29 0.772 .9900459 1.007453

sp75\_1403\_7\_ss\_c\_4lag | 1.017874 .0163803 1.10 0.271 .9862703 1.05049

sp75\_1403\_8\_ss\_c\_4lag | .9969899 .0105908 -0.28 0.777 .9764469 1.017965

sp75\_1403\_9\_ss\_c\_4lag | .9620392 .0436607 -0.85 0.394 .8801613 1.051534

sp75\_1404\_1\_ss\_c\_4lag | .7951376 .0881846 -2.07 0.039 .6397937 .9881996

sp75\_1404\_ss\_c\_4lag | .9743771 .198079 -0.13 0.898 .6541664 1.451329

sp75\_1405\_1\_ss\_c\_4lag | 1.282985 .247262 1.29 0.196 .8793758 1.871839

sp75\_1405\_ss\_c\_4lag | 1.00516 .0067554 0.77 0.444 .992006 1.018488

sp75\_1431\_ss\_c\_4lag | 1.017326 .1480153 0.12 0.906 .7649177 1.353023

sp75\_1432\_ss\_c\_4lag | .0011453 .0005339 -14.53 0.000 .0004594 .0028556

sp75\_1433\_ss\_c\_4lag | 1.053348 .0749742 0.73 0.465 .9161905 1.211038

sp75\_1434\_ss\_c\_4lag | 1.030254 .0387956 0.79 0.429 .9569543 1.109169

sp75\_1435\_ss\_c\_4lag | .7559986 .1315071 -1.61 0.108 .5375924 1.063136

sp75\_1437\_ss\_c\_4lag | 1.064556 .1101585 0.60 0.545 .8691358 1.303916

sp75\_150\_ss\_c\_4lag | 1.201449 .0918001 2.40 0.016 1.034349 1.395545

sp75\_151\_ss\_c\_4lag | .9354786 .0809245 -0.77 0.441 .7895867 1.108327

sp75\_153\_ss\_c\_4lag | 1.128086 .3883841 0.35 0.726 .5744942 2.215128

sp75\_155\_ss\_c\_4lag | .9881777 .1488977 -0.08 0.937 .7354901 1.32768

sp75\_156\_ss\_c\_4lag | .8099581 .1134925 -1.50 0.133 .6154473 1.065943

sp75\_1600\_2\_ss\_c\_4lag | .9674519 .0508219 -0.63 0.529 .8727992 1.07237

sp75\_1712\_10\_ss\_c\_4lag | .937658 .033565 -1.80 0.072 .8741266 1.005807

sp75\_1712\_6\_ss\_c\_4lag | 1.424182 .2374893 2.12 0.034 1.027125 1.974729

sp75\_1720\_ss\_c\_4lag | 1.008201 .012828 0.64 0.521 .983369 1.033659

sp75\_1721\_ss\_c\_4lag | 9.94e-06 9.17e-06 -12.49 0.000 1.63e-06 .0000606

sp75\_1725\_ss\_c\_4lag | 1.001637 .001494 1.10 0.273 .9987134 1.00457

sp75\_1726\_ss\_c\_4lag | 1.074685 .040429 1.91 0.056 .9982967 1.156919

sp75\_1727\_ss\_c\_4lag | 1.281797 .1360885 2.34 0.019 1.040992 1.578307

sp75\_1728\_ss\_c\_4lag | 1.191368 .0909763 2.29 0.022 1.02576 1.383714

sp75\_1729\_ss\_c\_4lag | 1.040784 .0571083 0.73 0.466 .9346629 1.158955

sp75\_1730\_ss\_c\_4lag | .9583583 .0514209 -0.79 0.428 .8626934 1.064631

sp75\_1731\_ss\_c\_4lag | .9989447 .001507 -0.70 0.484 .9959953 1.001903

sp75\_1903\_ss\_c\_4lag | 1.017149 .0532554 0.32 0.745 .9179474 1.127071

sp75\_1909\_ss\_c\_4lag | 1.004472 .0057614 0.78 0.437 .9932429 1.015827

sp75\_1910\_ss\_c\_4lag | .9952016 .0104793 -0.46 0.648 .9748731 1.015954

sp75\_1911\_ss\_c\_4lag | .9886399 .0126925 -0.89 0.374 .9640735 1.013832

sp75\_1912\_ss\_c\_4lag | 1.157302 .1312658 1.29 0.198 .9266164 1.445418

sp75\_1913\_ss\_c\_4lag | 1.039394 .0136666 2.94 0.003 1.01295 1.066528

sp75\_1914\_ss\_c\_4lag | 1.003491 .0046629 0.75 0.453 .9943931 1.012672

sp75\_1915\_ss\_c\_4lag | 1.057744 .1203785 0.49 0.622 .8462681 1.322066

sp75\_202\_ss\_c\_4lag | 1.000786 .0008554 0.92 0.358 .9991106 1.002464

sp75\_208\_ss\_c\_4lag | 1.004321 .0069321 0.62 0.532 .9908253 1.018

sp75\_211\_ss\_c\_4lag | .9976412 .0066947 -0.35 0.725 .9846058 1.010849

sp75\_212\_ss\_c\_4lag | .9794527 .017638 -1.15 0.249 .9454858 1.01464

sp75\_214\_ss\_c\_4lag | .9870469 .0541365 -0.24 0.812 .8864454 1.099065

sp75\_312\_ss\_c\_4lag | .9592399 .0529767 -0.75 0.451 .8608296 1.0689

sp75\_320\_ss\_c\_4lag | 1.011009 .0176706 0.63 0.531 .9769613 1.046242

sp75\_324\_ss\_c\_4lag | .9804265 .0225725 -0.86 0.391 .9371686 1.025681

sp75\_337\_ss\_c\_4lag | 1.016281 .015673 1.05 0.295 .9860222 1.047469

sp75\_340\_ss\_c\_4lag | .9998775 .0060138 -0.02 0.984 .9881599 1.011734

sp75\_342\_ss\_c\_4lag | 1.001023 .0034144 0.30 0.764 .9943528 1.007737

sp75\_344\_ss\_c\_4lag | .9739895 .0361432 -0.71 0.478 .905665 1.047469

sp75\_352\_ss\_c\_4lag | 1.00757 .025339 0.30 0.764 .959111 1.058478

sp75\_382\_ss\_c\_4lag | 1.100857 .0347531 3.04 0.002 1.034807 1.171124

sp75\_503\_ss\_c\_4lag | .9993758 .0019058 -0.33 0.743 .9956475 1.003118

sp75\_504\_ss\_c\_4lag | .7945122 .0832848 -2.19 0.028 .6469539 .9757258

sp75\_505\_ss\_c\_4lag | 1.007951 .0963146 0.08 0.934 .8358008 1.215558

sp75\_506\_1\_ss\_c\_4lag | .9876297 .0929875 -0.13 0.895 .8212051 1.187782

sp75\_506\_ss\_c\_4lag | 1.001049 .0792063 0.01 0.989 .8572459 1.168975

sp75\_507\_ss\_c\_4lag | 1.008182 .0279522 0.29 0.769 .9548584 1.064483

sp75\_511\_1\_ss\_c\_4lag | .6974497 .1149616 -2.19 0.029 .5049032 .9634245

sp75\_511\_ss\_c\_4lag | 1.03355 .0196618 1.73 0.083 .9957227 1.072814

sp75\_512\_1\_ss\_c\_4lag | 1.193418 .1730927 1.22 0.223 .8981204 1.585807

sp75\_512\_2\_ss\_c\_4lag | 1.004022 .020702 0.19 0.846 .9642555 1.045428

sp75\_512\_ss\_c\_4lag | 1.003865 .0025708 1.51 0.132 .9988393 1.008917

sp75\_513\_1\_ss\_c\_4lag | 1.039921 .0816109 0.50 0.618 .891661 1.212833

sp75\_513\_ss\_c\_4lag | .949136 .0562679 -0.88 0.379 .8450189 1.066082

sp75\_514\_ss\_c\_4lag | 1.003269 .0103623 0.32 0.752 .9831636 1.023786

sp75\_515\_ss\_c\_4lag | .9757062 .0093791 -2.56 0.011 .9574956 .9942632

sp75\_516\_1\_ss\_c\_4lag | .8042244 .0933991 -1.88 0.061 .6405048 1.009792

sp75\_516\_2\_ss\_c\_4lag | 1.05 .1911047 0.27 0.789 .7349655 1.500071

sp75\_516\_ss\_c\_4lag | 1.025803 .0167048 1.56 0.118 .9935787 1.059072

sp75\_517\_1\_ss\_c\_4lag | .9682963 .0808839 -0.39 0.700 .8220639 1.140541

sp75\_517\_ss\_c\_4lag | 1.000162 .0013649 0.12 0.906 .9974903 1.002841

sp75\_518\_1\_ss\_c\_4lag | .9397225 .0238231 -2.45 0.014 .8941711 .9875944

sp75\_518\_ss\_c\_4lag | 1.024675 .0087781 2.85 0.004 1.007614 1.042025

sp75\_519\_ss\_c\_4lag | 1.175308 .2087028 0.91 0.363 .8298532 1.664569

sp75\_520\_ss\_c\_4lag | .9765725 .0144091 -1.61 0.108 .9487357 1.005226

sp75\_523\_1\_ss\_c\_4lag | .9871749 .0119962 -1.06 0.288 .9639406 1.010969

sp75\_523\_2\_ss\_c\_4lag | 1.020017 .0113903 1.77 0.076 .9979352 1.042588

sp75\_523\_ss\_c\_4lag | .9785727 .0104697 -2.02 0.043 .9582661 .9993096

sp75\_600\_1\_ss\_c\_4lag | .8095724 .076855 -2.23 0.026 .6721229 .9751304

sp75\_600\_ss\_c\_4lag | 1.139563 .0858509 1.73 0.083 .9831319 1.320886

sp75\_601\_1\_ss\_c\_4lag | .9959422 .0091583 -0.44 0.658 .9781531 1.014055

sp75\_601\_2\_ss\_c\_4lag | .9804387 .0597296 -0.32 0.746 .8700899 1.104782

sp75\_601\_3\_ss\_c\_4lag | .9730627 .1126731 -0.24 0.814 .7754937 1.220965

sp75\_601\_ss\_c\_4lag | 1.011556 .0108868 1.07 0.286 .9904416 1.03312

sp75\_602\_ss\_c\_4lag | 1.00927 .0331674 0.28 0.779 .9463119 1.076416

sp75\_603\_ss\_c\_4lag | .9920241 .0329461 -0.24 0.809 .9295076 1.058745

sp75\_604\_ss\_c\_4lag | 1.006392 .0023272 2.76 0.006 1.001841 1.010963

sp75\_605\_ss\_c\_4lag | 1.012775 .013192 0.97 0.330 .9872462 1.038963

sp75\_606\_ss\_c\_4lag | .9890584 .0056828 -1.91 0.056 .9779827 1.000259

sp75\_607\_ss\_c\_4lag | 1.018129 .0188215 0.97 0.331 .9819 1.055695

sp75\_700\_1\_ss\_c\_4lag | .8084992 .0668146 -2.57 0.010 .6876003 .9506553

sp75\_700\_ss\_c\_4lag | .9654176 .0229182 -1.48 0.138 .9215277 1.011398

sp75\_701\_1\_ss\_c\_4lag | .9671202 .0273828 -1.18 0.238 .9149128 1.022307

sp75\_701\_2\_ss\_c\_4lag | 1.043118 .039072 1.13 0.260 .9692817 1.122579

sp75\_701\_3\_ss\_c\_4lag | 1.011929 .0314853 0.38 0.703 .952063 1.075559

sp75\_701\_4\_ss\_c\_4lag | 1.345982 .1835025 2.18 0.029 1.030367 1.758274

sp75\_701\_ss\_c\_4lag | 1.016632 .007429 2.26 0.024 1.002175 1.031297

sp75\_703\_2\_ss\_c\_4lag | 1.073901 .0901206 0.85 0.396 .9110295 1.265891

sp75\_703\_3\_ss\_c\_4lag | 1.018966 .0541487 0.35 0.724 .9181765 1.130819

sp75\_703\_ss\_c\_4lag | 1.005795 .0204267 0.28 0.776 .9665458 1.046638

sp75\_704\_ss\_c\_4lag | 1.110974 .1308703 0.89 0.372 .8819306 1.399502

sp75\_705\_1\_ss\_c\_4lag | .9682546 .0402227 -0.78 0.437 .8925435 1.050388

sp75\_705\_8\_ss\_c\_4lag | .8077805 .0522978 -3.30 0.001 .7115154 .9170698

sp75\_705\_ss\_c\_4lag | 1.059106 .06038 1.01 0.314 .9471358 1.184314

sp75\_706\_ss\_c\_4lag | .9207479 .045493 -1.67 0.095 .8357645 1.014373

sp75\_800\_2\_ss\_c\_4lag | 1.76e-07 1.76e-07 -15.51 0.000 2.46e-08 1.26e-06

sp75\_800\_3\_ss\_c\_4lag | 1.034413 .1463836 0.24 0.811 .7838574 1.365056

sp75\_800\_4\_ss\_c\_4lag | 1.570457 .3617061 1.96 0.050 .9999493 2.466459

sp75\_800\_ss\_c\_4lag | .9991515 .030651 -0.03 0.978 .9408471 1.061069

sp75\_801\_ss\_c\_4lag | .8104357 .0889206 -1.92 0.055 .6536198 1.004875

sp75\_802\_ss\_c\_4lag | .8696809 .077462 -1.57 0.117 .7303716 1.035562

sp75\_803\_2\_ss\_c\_4lag | 1.165674 .1344655 1.33 0.184 .9297955 1.461393

sp75\_803\_ss\_c\_4lag | 1.042783 .0386707 1.13 0.259 .969679 1.121399

sp75\_804\_ss\_c\_4lag | .992707 .0261454 -0.28 0.781 .9427631 1.045297

sp75\_805\_ss\_c\_4lag | .8796935 .056424 -2.00 0.046 .7757735 .9975344

sp75\_806\_ss\_c\_4lag | 1.127738 .0820759 1.65 0.099 .9778192 1.300643

sp75\_807\_ss\_c\_4lag | 1.015209 .0087681 1.75 0.081 .998169 1.032541

sp75\_808\_ss\_c\_4lag | .9500271 .0514609 -0.95 0.344 .8543351 1.056437

sp75\_809\_ss\_c\_4lag | .9806012 .0207085 -0.93 0.354 .9408417 1.022041

sp75\_810\_ss\_c\_4lag | 1.027987 .0357673 0.79 0.428 .9602218 1.100536

sp75\_811\_ss\_c\_4lag | 1.004123 .0466095 0.09 0.929 .9168026 1.099761

sp75\_812\_ss\_c\_4lag | .9293044 .0724567 -0.94 0.347 .7976105 1.082742

sp75\_814\_ss\_c\_4lag | .9359121 .0308344 -2.01 0.044 .8773876 .9983403

sp75\_815\_ss\_c\_4lag | 1.350579 .181482 2.24 0.025 1.037865 1.757514

sp75\_816\_ss\_c\_4lag | 1.025422 .0332426 0.77 0.439 .9622946 1.092691

sp75\_818\_ss\_c\_4lag | 1.119366 .1008528 1.25 0.211 .9381676 1.335561

sp75\_819\_ss\_c\_4lag | 1.168297 .1935788 0.94 0.348 .8443352 1.616559

sp75\_820\_ss\_c\_4lag | .9903705 .0390538 -0.25 0.806 .9167097 1.06995

sp75\_821\_ss\_c\_4lag | 1.023475 .0811704 0.29 0.770 .8761324 1.195598

sp75\_825\_ss\_c\_4lag | 1.045566 .1670071 0.28 0.780 .7645222 1.429924

sp75\_827\_ss\_c\_4lag | 1.020178 .1289642 0.16 0.874 .7962927 1.307011

sp75\_831\_ss\_c\_4lag | .9501378 .0485479 -1.00 0.317 .8595951 1.050218

sp75\_900\_2\_ss\_c\_4lag | .9935648 .124405 -0.05 0.959 .77735 1.269918

sp75\_900\_3\_ss\_c\_4lag | .9202472 .0645878 -1.18 0.236 .8019785 1.055957

sp75\_900\_4\_ss\_c\_4lag | 1.04073 .0617776 0.67 0.501 .9264263 1.169137

sp75\_900\_ss\_c\_4lag | .9875834 .0110055 -1.12 0.262 .9662469 1.009391

sp75\_901\_ss\_c\_4lag | .9854693 .0514547 -0.28 0.779 .8896085 1.09166

sp75\_902\_1\_ss\_c\_4lag | 1.039608 .0721344 0.56 0.576 .9074195 1.191054

sp75\_902\_2\_ss\_c\_4lag | 1.074855 .020242 3.83 0.000 1.035905 1.11527

sp75\_902\_4\_ss\_c\_4lag | .9721974 .0266103 -1.03 0.303 .9214163 1.025777

sp75\_902\_ss\_c\_4lag | 1.012236 .0114925 1.07 0.284 .9899596 1.035013

sp75\_903\_ss\_c\_4lag | 1.006585 .0174577 0.38 0.705 .9729433 1.041389

sp75\_904\_ss\_c\_4lag | 1.00393 .004865 0.81 0.418 .9944401 1.013511

sp75\_905\_ss\_c\_4lag | .9651792 .1072218 -0.32 0.750 .7763328 1.199963

sp75\_907\_ss\_c\_4lag | 1.047661 .0805855 0.61 0.545 .9010459 1.218133

sp77\_103\_ss\_c\_4lag | 1.056458 .0281333 2.06 0.039 1.002732 1.113063

sp77\_1103\_ss\_c\_4lag | .953487 .0254471 -1.78 0.074 .9048936 1.00469

sp77\_1104\_ss\_c\_4lag | 1.006011 .0046419 1.30 0.194 .9969543 1.01515

sp77\_1106\_ss\_c\_4lag | .0187675 .0048021 -15.54 0.000 .011366 .0309889

sp77\_1111\_ss\_c\_4lag | .8755911 .1107774 -1.05 0.294 .6832971 1.122001

sp77\_1112\_ss\_c\_4lag | .977025 .0339989 -0.67 0.504 .91261 1.045987

sp77\_1403\_ss\_c\_4lag | .8606926 .1067328 -1.21 0.226 .674982 1.097499

sp77\_1433\_ss\_c\_4lag | .8486038 .1022868 -1.36 0.173 .6700466 1.074744

sp77\_1434\_ss\_c\_4lag | .9494868 .0541224 -0.91 0.363 .8491198 1.061717

sp77\_1437\_ss\_c\_4lag | .8265706 .0795961 -1.98 0.048 .6844031 .9982699

sp77\_1438\_ss\_c\_4lag | .8855916 .18222 -0.59 0.555 .5916837 1.325493

sp77\_1605\_ss\_c\_4lag | 1.002587 .0067909 0.38 0.703 .9893656 1.015986

sp77\_1606\_ss\_c\_4lag | 1.006696 .0071908 0.93 0.350 .9927004 1.020889

sp77\_1710\_ss\_c\_4lag | .9871246 .0092676 -1.38 0.167 .9691266 1.005457

sp77\_1802\_ss\_c\_4lag | .8181862 .0978861 -1.68 0.093 .6471668 1.034399

sp77\_1906\_ss\_c\_4lag | 1.053263 .2125776 0.26 0.797 .7091541 1.564346

sp77\_1915\_ss\_c\_4lag | 1.065529 .0751047 0.90 0.368 .9280415 1.223384

sp77\_1916\_ss\_c\_4lag | 1.070279 .0791422 0.92 0.358 .9258799 1.237199

sp77\_200\_ss\_c\_4lag | .9920596 .0054928 -1.44 0.150 .9813522 1.002884

sp77\_202\_ss\_c\_4lag | .968343 .0089001 -3.50 0.000 .9510554 .9859449

sp77\_203\_ss\_c\_4lag | .9105544 .0584898 -1.46 0.145 .8028393 1.032721

sp77\_204\_ss\_c\_4lag | .9923414 .0121967 -0.63 0.532 .968722 1.016537

sp77\_205\_ss\_c\_4lag | 1.00518 .0039514 1.31 0.189 .9974652 1.012955

sp77\_206\_ss\_c\_4lag | 1.013317 .0236495 0.57 0.571 .968009 1.060746

sp77\_207\_ss\_c\_4lag | 1.058279 .0207247 2.89 0.004 1.018429 1.099688

sp77\_208\_ss\_c\_4lag | 1.01313 .0112969 1.17 0.242 .991229 1.035515

sp77\_210\_ss\_c\_4lag | .9789617 .0255413 -0.81 0.415 .9301601 1.030324

sp77\_216\_ss\_c\_4lag | 1.085717 .1121935 0.80 0.426 .8866601 1.329463

sp77\_315\_ss\_c\_4lag | .654208 .1338453 -2.07 0.038 .4380941 .976932

sp77\_400\_ss\_c\_4lag | 1.001733 .0042032 0.41 0.680 .9935289 1.010005

sp77\_401\_ss\_c\_4lag | .9943673 .0340712 -0.16 0.869 .929782 1.063439

sp77\_402\_ss\_c\_4lag | 1.018976 .0216246 0.89 0.376 .9774621 1.062253

sp77\_403\_1\_ss\_c\_4lag | 1.029451 .0589675 0.51 0.612 .9201282 1.151762

sp77\_403\_ss\_c\_4lag | 1.23788 .1829642 1.44 0.149 .9265468 1.653827

sp77\_404\_ss\_c\_4lag | .9962136 .0035923 -1.05 0.293 .9891975 1.003279

sp77\_405\_ss\_c\_4lag | 1.02355 .036688 0.65 0.516 .9541108 1.098044

sp77\_408\_ss\_c\_4lag | .9668947 .0460139 -0.71 0.479 .8807874 1.06142

sp77\_409\_ss\_c\_4lag | .6971185 .1688677 -1.49 0.136 .433625 1.120724

sp77\_410\_ss\_c\_4lag | .9990995 .0076216 -0.12 0.906 .9842726 1.01415

sp77\_411\_ss\_c\_4lag | .9560629 .0609192 -0.71 0.481 .8438182 1.083238

sp77\_412\_ss\_c\_4lag | 1.09749 .0577589 1.77 0.077 .9899277 1.21674

sp77\_413\_ss\_c\_4lag | .8336445 .0389682 -3.89 0.000 .7606625 .9136288

sp77\_500\_ss\_c\_4lag | .9467443 .0278431 -1.86 0.063 .8937158 1.002919

sp77\_501\_ss\_c\_4lag | .984726 .0402902 -0.38 0.707 .9088419 1.066946

sp77\_502\_1\_ss\_c\_4lag | 1.118268 .15559 0.80 0.422 .8513618 1.468851

sp77\_502\_2\_ss\_c\_4lag | .9316687 .0372071 -1.77 0.076 .8615251 1.007523

sp77\_502\_ss\_c\_4lag | .992935 .005099 -1.38 0.167 .9829912 1.002979

sp77\_503\_1\_ss\_c\_4lag | .8531211 .1469697 -0.92 0.356 .6086556 1.195776

sp77\_503\_ss\_c\_4lag | .818229 .0741192 -2.21 0.027 .6851235 .9771942

sp77\_504\_ss\_c\_4lag | 1.00265 .0217773 0.12 0.903 .9608633 1.046254

sp77\_505\_ss\_c\_4lag | .9640632 .0166867 -2.11 0.034 .9319064 .9973297

sp77\_506\_1\_ss\_c\_4lag | 1.022243 .0947143 0.24 0.812 .8524862 1.225803

sp77\_506\_ss\_c\_4lag | 1.040493 .0359836 1.15 0.251 .972304 1.113465

sp77\_507\_ss\_c\_4lag | 1.082538 .0563404 1.52 0.128 .9775581 1.198792

sp77\_508\_1\_ss\_c\_4lag | 1.418221 .1335609 3.71 0.000 1.179185 1.705712

sp77\_508\_ss\_c\_4lag | 1.115612 .0449299 2.72 0.007 1.030937 1.207242

sp77\_509\_ss\_c\_4lag | .9414255 .0273309 -2.08 0.038 .8893534 .9965464

sp77\_510\_ss\_c\_4lag | .8911643 .0464819 -2.21 0.027 .8045634 .9870866

sp77\_511\_ss\_c\_4lag | .8701692 .0920891 -1.31 0.189 .7071669 1.070743

sp77\_512\_ss\_c\_4lag | .985067 .0145766 -1.02 0.309 .9569077 1.014055

sp77\_513\_ss\_c\_4lag | .9859044 .0212925 -0.66 0.511 .9450427 1.028533

sp77\_514\_ss\_c\_4lag | 1.49771 .1810569 3.34 0.001 1.181753 1.898142

sp77\_515\_ss\_c\_4lag | .9368859 .1727635 -0.35 0.724 .6527149 1.344776

sp77\_516\_ss\_c\_4lag | .9924819 .0146811 -0.51 0.610 .9641206 1.021678

sp77\_600\_ss\_c\_4lag | 1.021827 .055185 0.40 0.689 .9191939 1.135919

sp77\_601\_ss\_c\_4lag | .9656981 .0820196 -0.41 0.681 .8176102 1.140608

sp77\_602\_ss\_c\_4lag | 1.115022 .088994 1.36 0.173 .9535557 1.30383

sp77\_603\_ss\_c\_4lag | 1.410879 .1171708 4.14 0.000 1.198945 1.660277

sp77\_604\_ss\_c\_4lag | .9627786 .0587475 -0.62 0.534 .8542544 1.08509

sp77\_605\_ss\_c\_4lag | 1.10164 .1773439 0.60 0.548 .8035481 1.510315

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

sp77\_700\_1\_ss\_c\_4lag | 1.128862 .1074962 1.27 0.203 .9366669 1.360495

sp77\_700\_ss\_c\_4lag | .9620608 .0758794 -0.49 0.624 .8242648 1.122893

sp77\_701\_1\_ss\_c\_4lag | .9973893 .1065139 -0.02 0.980 .8090262 1.229608

sp77\_701\_2\_ss\_c\_4lag | .9477722 .0724845 -0.70 0.483 .8158402 1.101039

sp77\_701\_3\_ss\_c\_4lag | 1.112373 .0519327 2.28 0.023 1.015105 1.218962

sp77\_701\_4\_ss\_c\_4lag | .9631412 .0715601 -0.51 0.613 .83262 1.114123

sp77\_701\_ss\_c\_4lag | .9852522 .0192597 -0.76 0.447 .9482179 1.023733

sp77\_704\_1\_ss\_c\_4lag | 1.058846 .0545953 1.11 0.267 .9570705 1.171444

sp77\_704\_8\_ss\_c\_4lag | 1.136295 .3316009 0.44 0.662 .6413393 2.013233

sp77\_704\_9\_ss\_c\_4lag | 1.298168 .2249179 1.51 0.132 .9243859 1.82309

sp77\_704\_ss\_c\_4lag | 1.031622 .1348818 0.24 0.812 .7984139 1.332947

sp77\_705\_ss\_c\_4lag | .9734255 .0465603 -0.56 0.573 .8863159 1.069097

sp77\_800\_1\_ss\_c\_4lag | 1.131411 .1189171 1.17 0.240 .9207778 1.390228

sp77\_800\_2\_ss\_c\_4lag | 1.153241 .114144 1.44 0.150 .9498852 1.400133

sp77\_800\_ss\_c\_4lag | 1.358217 .2535011 1.64 0.101 .9421033 1.958121

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

sp77\_802\_ss\_c\_4lag | .91702 .1164563 -0.68 0.495 .7149589 1.176188

sp77\_803\_ss\_c\_4lag | 1.525882 .6710455 0.96 0.337 .6444413 3.612921

sp77\_804\_ss\_c\_4lag | .5959996 .0914985 -3.37 0.001 .4411319 .8052364

sp77\_805\_ss\_c\_4lag | .9449114 .0992102 -0.54 0.589 .7691657 1.160813

sp77\_807\_1\_ss\_c\_4lag | .8343394 .1185009 -1.28 0.202 .6316069 1.102145

sp77\_807\_2\_ss\_c\_4lag | 1.087867 .1201043 0.76 0.446 .8761934 1.350676

sp77\_807\_3\_ss\_c\_4lag | 1.155866 .0435552 3.84 0.000 1.073575 1.244464

sp77\_807\_ss\_c\_4lag | 1.04335 .08354 0.53 0.596 .8918162 1.220633

sp77\_808\_ss\_c\_4lag | 1.30202 .0921072 3.73 0.000 1.133449 1.495661

sp77\_809\_ss\_c\_4lag | .9197278 .0384983 -2.00 0.046 .8472848 .9983647

sp77\_810\_ss\_c\_4lag | .9956433 .0777973 -0.06 0.955 .8542653 1.160419

sp77\_900\_1\_ss\_c\_4lag | 1.318804 .1528279 2.39 0.017 1.050848 1.655086

sp77\_900\_2\_ss\_c\_4lag | .0221088 .0056674 -14.87 0.000 .0133773 .0365396

sp77\_900\_ss\_c\_4lag | .876674 .089709 -1.29 0.198 .7173575 1.071373

sp77\_901\_1\_ss\_c\_4lag | .19786 .2058415 -1.56 0.119 .0257525 1.520185

sp77\_901\_ss\_c\_4lag | 1.010062 .0518618 0.19 0.845 .9133617 1.116999

sp77\_902\_3\_ss\_c\_4lag | .000976 .0004486 -15.08 0.000 .0003965 .0024024

sp77\_902\_ss\_c\_4lag | 1.003232 .0559266 0.06 0.954 .8993935 1.119058

sp77\_903\_ss\_c\_4lag | 1.035866 .05227 0.70 0.485 .9383214 1.14355

sp77\_904\_ss\_c\_4lag | 1.008829 .020047 0.44 0.658 .9702932 1.048896

mine\_time | .9974266 .0068898 -0.37 0.709 .9840138 1.011022

onsite\_insp\_hours | .9999089 .0000442 -2.06 0.039 .9998222 .9999956

|

state |

1 | 1.081059 .123892 0.68 0.496 .8635739 1.353315

2 | 1.47668 .1486867 3.87 0.000 1.212214 1.798845

3 | .6990595 .1282365 -1.95 0.051 .4879423 1.00152

4 | 1.072332 .0962688 0.78 0.437 .8993165 1.278633

5 | .9370713 .1650198 -0.37 0.712 .6635516 1.323338

6 | .8383308 .0442527 -3.34 0.001 .755933 .9297102

7 | 1.023104 .2376745 0.10 0.922 .6489025 1.613095

8 | 1.120993 .0873099 1.47 0.143 .9622905 1.30587

9 | .838218 .0817297 -1.81 0.070 .6924068 1.014735

10 | .8475139 .1433786 -0.98 0.328 .6083372 1.180726

11 | .9568978 .2620637 -0.16 0.872 .5594338 1.63675

12 | .9964152 .0907201 -0.04 0.969 .8335688 1.191075

13 | 1.321596 .2273387 1.62 0.105 .9433576 1.851488

14 | .6106898 .0847868 -3.55 0.000 .4652022 .8016773

15 | .6573958 .0437335 -6.31 0.000 .5770327 .7489509

17 | 1.188095 .1000677 2.05 0.041 1.007299 1.401341

|

time |

2000 | 1.091009 .0770461 1.23 0.217 .9499858 1.252966

2002 | .9187965 .0639483 -1.22 0.224 .8016331 1.053084

2003 | .876369 .0702013 -1.65 0.099 .7490343 1.02535

2004 | .8271247 .0626457 -2.51 0.012 .71302 .9594897

2005 | .7141603 .0552527 -4.35 0.000 .6136779 .8310956

2006 | .7017247 .0553184 -4.49 0.000 .6012635 .8189714

2007 | .6520397 .0537305 -5.19 0.000 .5547942 .7663307

2008 | .5808362 .0483654 -6.52 0.000 .4933729 .6838047

2009 | .4635923 .040176 -8.87 0.000 .3911731 .5494186

2010 | .5234457 .0454937 -7.45 0.000 .4414608 .6206563

2011 | .5291475 .0474958 -7.09 0.000 .4437861 .6309279

2012 | .5277635 .048381 -6.97 0.000 .4409691 .6316412

2013 | .450822 .0436183 -8.23 0.000 .3729485 .5449559

2014 | .436234 .0456152 -7.93 0.000 .3553963 .535459

2015 | .4690281 .050837 -6.99 0.000 .3792617 .5800411

|

\_cons | .0000179 1.24e-06 -157.87 0.000 .0000157 .0000206

ln(hours) | 1 (exposure)

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

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

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

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

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -90649.964

Iteration 1: log pseudolikelihood = -54569.323 (backed up)

Iteration 2: log pseudolikelihood = -32469.373

Iteration 3: log pseudolikelihood = -17719.122

Iteration 4: log pseudolikelihood = -11040.133

Iteration 5: log pseudolikelihood = -8908.1865

Iteration 6: log pseudolikelihood = -8655.0149

Iteration 7: log pseudolikelihood = -8617.913

Iteration 8: log pseudolikelihood = -8616.6315

Iteration 9: log pseudolikelihood = -8616.6292

Iteration 10: log pseudolikelihood = -8616.6292

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 = -8582.0813

Iteration 1: log pseudolikelihood = -8490.6048

Iteration 2: log pseudolikelihood = -8482.8985

Iteration 3: log pseudolikelihood = -8482.8577

Iteration 4: log pseudolikelihood = -8482.8577

Negative binomial regression Number of obs = 6,253

Wald chi2(297) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -8482.8577 Pseudo R2 = 0.0535

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

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

| Robust

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

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

sp47\_41\_ss\_c\_4lag | .815601 .0688116 -2.42 0.016 .6912937 .9622612

sp47\_44\_ss\_c\_4lag | 1.004872 .0688515 0.07 0.943 .878594 1.149299

sp48\_11\_ss\_c\_4lag | .9827498 .021785 -0.78 0.432 .9409662 1.026389

sp48\_25\_ss\_c\_4lag | .9846467 .0246849 -0.62 0.537 .9374346 1.034236

sp48\_26\_ss\_c\_4lag | 1.072228 .0238451 3.14 0.002 1.026497 1.119997

sp48\_27\_ss\_c\_4lag | 1.009615 .0285424 0.34 0.735 .955195 1.067136

sp48\_28\_ss\_c\_4lag | .9870718 .0324201 -0.40 0.692 .9255316 1.052704

sp48\_4\_ss\_c\_4lag | 1.341712 .1588433 2.48 0.013 1.063866 1.692123

sp48\_5\_ss\_c\_4lag | .9651082 .0381997 -0.90 0.370 .8930685 1.042959

sp48\_6\_ss\_c\_4lag | .9680286 .0307 -1.02 0.306 .9096896 1.030109

sp48\_7\_ss\_c\_4lag | 1.058223 .0219486 2.73 0.006 1.016067 1.102128

sp48\_8\_ss\_c\_4lag | .9987094 .0494877 -0.03 0.979 .9062764 1.10057

sp71\_701\_ss\_c\_4lag | 1.249266 .0926049 3.00 0.003 1.080333 1.444616

sp72\_503\_ss\_c\_4lag | 1.002381 .067851 0.04 0.972 .8778399 1.144592

sp72\_610\_ss\_c\_4lag | .8843552 .101561 -1.07 0.285 .7061112 1.107593

sp72\_620\_ss\_c\_4lag | 1.153274 .0921482 1.78 0.074 .9860981 1.348791

sp72\_630\_ss\_c\_4lag | 1.001726 .0030534 0.57 0.572 .9957588 1.007728

sp75\_100\_ss\_c\_4lag | 1.056157 .0793131 0.73 0.467 .9116053 1.223631

sp75\_1001\_1\_ss\_c\_4lag | 1.086118 .3216513 0.28 0.780 .607849 1.9407

sp75\_1001\_ss\_c\_4lag | 1.115738 .1979886 0.62 0.537 .7879813 1.579824

sp75\_1003\_1\_ss\_c\_4lag | .8614057 .0690606 -1.86 0.063 .7361482 1.007976

sp75\_1100\_2\_ss\_c\_4lag | 1.001615 .0048424 0.33 0.739 .9921689 1.011151

sp75\_1101\_20\_ss\_c\_4lag | .9576903 .0459521 -0.90 0.368 .8717311 1.052126

sp75\_1102\_ss\_c\_4lag | .973766 .018427 -1.40 0.160 .9383112 1.01056

sp75\_1103\_4\_ss\_c\_4lag | 1.0259 .010446 2.51 0.012 1.00563 1.04658

sp75\_1104\_ss\_c\_4lag | 1.00933 .0482346 0.19 0.846 .9190843 1.108437

sp75\_1106\_2\_ss\_c\_4lag | .979069 .0183349 -1.13 0.259 .9437848 1.015672

sp75\_1106\_3\_ss\_c\_4lag | 1.019596 .0091448 2.16 0.030 1.001829 1.037678

sp75\_1106\_4\_ss\_c\_4lag | 1.029669 .0654031 0.46 0.645 .9091395 1.166178

sp75\_1106\_5\_ss\_c\_4lag | .9813555 .0280258 -0.66 0.510 .9279349 1.037851

sp75\_1106\_6\_ss\_c\_4lag | .8888627 .1013444 -1.03 0.301 .7108603 1.111438

sp75\_1106\_ss\_c\_4lag | .9883845 .0465914 -0.25 0.804 .9011584 1.084053

sp75\_1107\_14\_ss\_c\_4lag | 1.072575 .1646374 0.46 0.648 .7939091 1.449055

sp75\_1400\_1\_ss\_c\_4lag | .9782225 .0489041 -0.44 0.660 .8869186 1.078926

sp75\_1400\_2\_ss\_c\_4lag | .6991682 .1488622 -1.68 0.093 .4606272 1.06124

sp75\_1400\_3\_ss\_c\_4lag | .9890815 .0349051 -0.31 0.756 .9229812 1.059916

sp75\_1400\_4\_ss\_c\_4lag | .9165358 .0646188 -1.24 0.216 .7982464 1.052354

sp75\_1400\_ss\_c\_4lag | 1.018146 .0251267 0.73 0.466 .9700707 1.068604

sp75\_1401\_ss\_c\_4lag | 1.025786 .069645 0.37 0.708 .8979766 1.171786

sp75\_1403\_10\_ss\_c\_4lag | .9942908 .00631 -0.90 0.367 .982 1.006735

sp75\_1403\_11\_ss\_c\_4lag | 1.669317 .3898712 2.19 0.028 1.056184 2.638385

sp75\_1403\_3\_ss\_c\_4lag | 1.05169 .163356 0.32 0.746 .7756628 1.425944

sp75\_1403\_4\_ss\_c\_4lag | 1.008411 .0923471 0.09 0.927 .8427277 1.206669

sp75\_1403\_5\_ss\_c\_4lag | .9938891 .003344 -1.82 0.068 .9873565 1.000465

sp75\_1403\_6\_ss\_c\_4lag | .9989565 .0036628 -0.28 0.776 .9918033 1.006161

sp75\_1403\_7\_ss\_c\_4lag | 1.020995 .0148735 1.43 0.154 .992256 1.050567

sp75\_1403\_8\_ss\_c\_4lag | .9951565 .0083432 -0.58 0.563 .9789377 1.011644

sp75\_1403\_9\_ss\_c\_4lag | .9626216 .0319191 -1.15 0.251 .9020508 1.027259

sp75\_1404\_1\_ss\_c\_4lag | .8181289 .0933655 -1.76 0.079 .654157 1.023202

sp75\_1404\_ss\_c\_4lag | .923773 .1247256 -0.59 0.557 .7089867 1.203628

sp75\_1405\_1\_ss\_c\_4lag | 1.177831 .2326952 0.83 0.407 .799682 1.734796

sp75\_1405\_ss\_c\_4lag | 1.005612 .0058665 0.96 0.337 .994179 1.017176

sp75\_1431\_ss\_c\_4lag | 1.016636 .1187046 0.14 0.888 .8086816 1.278067

sp75\_1432\_ss\_c\_4lag | .0000357 .0000179 -20.38 0.000 .0000133 .0000956

sp75\_1433\_ss\_c\_4lag | 1.041485 .0616549 0.69 0.492 .9273909 1.169616

sp75\_1434\_ss\_c\_4lag | 1.04084 .0328894 1.27 0.205 .9783339 1.107341

sp75\_1435\_ss\_c\_4lag | .822668 .1171313 -1.37 0.170 .6223443 1.087473

sp75\_1437\_ss\_c\_4lag | 1.080934 .0995403 0.85 0.398 .9024312 1.294744

sp75\_150\_ss\_c\_4lag | 1.148161 .0876368 1.81 0.070 .9886267 1.333439

sp75\_151\_ss\_c\_4lag | .9279662 .0789194 -0.88 0.379 .785491 1.096284

sp75\_153\_ss\_c\_4lag | .9256029 .2715813 -0.26 0.792 .5208031 1.645038

sp75\_155\_ss\_c\_4lag | .9990104 .1020749 -0.01 0.992 .8177069 1.220513

sp75\_156\_ss\_c\_4lag | .7981463 .100613 -1.79 0.074 .623421 1.021842

sp75\_1600\_2\_ss\_c\_4lag | .948019 .0478664 -1.06 0.290 .8586953 1.046634

sp75\_1712\_10\_ss\_c\_4lag | .9731692 .0399857 -0.66 0.508 .8978713 1.054782

sp75\_1712\_6\_ss\_c\_4lag | 1.254197 .2638733 1.08 0.282 .8303848 1.894313

sp75\_1720\_ss\_c\_4lag | 1.0078 .0115689 0.68 0.498 .9853789 1.030732

sp75\_1721\_ss\_c\_4lag | 1.36e-08 1.36e-08 -18.07 0.000 1.91e-09 9.71e-08

sp75\_1725\_ss\_c\_4lag | 1.001376 .0012645 1.09 0.276 .998901 1.003858

sp75\_1726\_ss\_c\_4lag | 1.05207 .0359034 1.49 0.137 .9840027 1.124846

sp75\_1727\_ss\_c\_4lag | 1.253046 .1190243 2.37 0.018 1.040191 1.509458

sp75\_1728\_ss\_c\_4lag | 1.176821 .0761552 2.52 0.012 1.036638 1.335962

sp75\_1729\_ss\_c\_4lag | 1.035889 .0564225 0.65 0.517 .9310016 1.152594

sp75\_1730\_ss\_c\_4lag | .9722616 .0394946 -0.69 0.489 .8978549 1.052834

sp75\_1731\_ss\_c\_4lag | 1.000245 .0013281 0.18 0.854 .997645 1.002851

sp75\_1903\_ss\_c\_4lag | 1.018001 .0437312 0.42 0.678 .9357991 1.107425

sp75\_1909\_ss\_c\_4lag | 1.00226 .0049897 0.45 0.650 .9925283 1.012088

sp75\_1910\_ss\_c\_4lag | .995427 .0094218 -0.48 0.628 .9771308 1.014066

sp75\_1911\_ss\_c\_4lag | .9859174 .011806 -1.18 0.236 .9630475 1.00933

sp75\_1912\_ss\_c\_4lag | 1.132614 .1150844 1.23 0.220 .9280932 1.382204

sp75\_1913\_ss\_c\_4lag | 1.041145 .0149951 2.80 0.005 1.012166 1.070953

sp75\_1914\_ss\_c\_4lag | 1.005658 .0039656 1.43 0.153 .9979151 1.01346

sp75\_1915\_ss\_c\_4lag | 1.06534 .0964262 0.70 0.484 .8921626 1.272132

sp75\_202\_ss\_c\_4lag | 1.000568 .000775 0.73 0.464 .9990501 1.002088

sp75\_208\_ss\_c\_4lag | 1.008624 .0062347 1.39 0.165 .9964775 1.020918

sp75\_211\_ss\_c\_4lag | .9994843 .0059387 -0.09 0.931 .9879121 1.011192

sp75\_212\_ss\_c\_4lag | .9842265 .0179212 -0.87 0.383 .9497209 1.019986

sp75\_214\_ss\_c\_4lag | .9571051 .0511658 -0.82 0.412 .8618968 1.06283

sp75\_312\_ss\_c\_4lag | .9942053 .0527388 -0.11 0.913 .896031 1.103136

sp75\_320\_ss\_c\_4lag | 1.004595 .0158305 0.29 0.771 .9740424 1.036107

sp75\_324\_ss\_c\_4lag | .9813601 .0175319 -1.05 0.292 .9475928 1.016331

sp75\_337\_ss\_c\_4lag | 1.021128 .0118432 1.80 0.071 .9981779 1.044606

sp75\_340\_ss\_c\_4lag | 1.000297 .005273 0.06 0.955 .9900158 1.010686

sp75\_342\_ss\_c\_4lag | 1.002269 .0029937 0.76 0.448 .9964185 1.008154

sp75\_344\_ss\_c\_4lag | .9860848 .0301605 -0.46 0.647 .9287083 1.047006

sp75\_352\_ss\_c\_4lag | 1.008891 .0159795 0.56 0.576 .9780526 1.040701

sp75\_382\_ss\_c\_4lag | 1.094136 .0355074 2.77 0.006 1.02671 1.16599

sp75\_503\_ss\_c\_4lag | .9978065 .0015844 -1.38 0.167 .9947059 1.000917

sp75\_504\_ss\_c\_4lag | .8235633 .0672668 -2.38 0.017 .7017344 .9665432

sp75\_505\_ss\_c\_4lag | .9910581 .0822667 -0.11 0.914 .8422515 1.166155

sp75\_506\_1\_ss\_c\_4lag | .9901087 .0690699 -0.14 0.887 .8635811 1.135174

sp75\_506\_ss\_c\_4lag | .9938781 .0629872 -0.10 0.923 .8777849 1.125326

sp75\_507\_ss\_c\_4lag | 1.007503 .0252843 0.30 0.766 .9591458 1.058298

sp75\_511\_1\_ss\_c\_4lag | .720602 .1217294 -1.94 0.052 .5174926 1.003429

sp75\_511\_ss\_c\_4lag | 1.040394 .0175337 2.35 0.019 1.00659 1.075333

sp75\_512\_1\_ss\_c\_4lag | 1.269682 .1792118 1.69 0.091 .9628313 1.674324

sp75\_512\_2\_ss\_c\_4lag | 1.00081 .0171499 0.05 0.962 .967755 1.034994

sp75\_512\_ss\_c\_4lag | 1.001461 .0021751 0.67 0.501 .9972074 1.005734

sp75\_513\_1\_ss\_c\_4lag | .9707265 .094636 -0.30 0.761 .8018873 1.175115

sp75\_513\_ss\_c\_4lag | .9751761 .048436 -0.51 0.613 .8847178 1.074883

sp75\_514\_ss\_c\_4lag | 1.007766 .0088446 0.88 0.378 .9905794 1.025251

sp75\_515\_ss\_c\_4lag | .9693985 .0089499 -3.37 0.001 .9520148 .9870996

sp75\_516\_1\_ss\_c\_4lag | .8249221 .0877695 -1.81 0.070 .6696492 1.016198

sp75\_516\_2\_ss\_c\_4lag | .9716745 .1382016 -0.20 0.840 .7352823 1.284067

sp75\_516\_ss\_c\_4lag | 1.022113 .0146799 1.52 0.128 .9937417 1.051294

sp75\_517\_1\_ss\_c\_4lag | .9298869 .0690424 -0.98 0.328 .8039518 1.075549

sp75\_517\_ss\_c\_4lag | 1.000772 .0012256 0.63 0.529 .9983729 1.003177

sp75\_518\_1\_ss\_c\_4lag | .9435036 .0220185 -2.49 0.013 .9013202 .9876613

sp75\_518\_ss\_c\_4lag | 1.025845 .0069962 3.74 0.000 1.012224 1.03965

sp75\_519\_ss\_c\_4lag | 1.293503 .1882599 1.77 0.077 .972481 1.720495

sp75\_520\_ss\_c\_4lag | .9808842 .0122996 -1.54 0.124 .9570712 1.00529

sp75\_523\_1\_ss\_c\_4lag | .9895506 .0108904 -0.95 0.340 .9684344 1.011127

sp75\_523\_2\_ss\_c\_4lag | 1.006453 .0106743 0.61 0.544 .9857473 1.027593

sp75\_523\_ss\_c\_4lag | .984537 .0096365 -1.59 0.111 .9658298 1.003606

sp75\_600\_1\_ss\_c\_4lag | .8243677 .0815379 -1.95 0.051 .6790924 1.000721

sp75\_600\_ss\_c\_4lag | .9990499 .059363 -0.02 0.987 .8892201 1.122445

sp75\_601\_1\_ss\_c\_4lag | .9986858 .0078179 -0.17 0.867 .9834799 1.014127

sp75\_601\_2\_ss\_c\_4lag | .9804145 .0514527 -0.38 0.706 .8845821 1.086629

sp75\_601\_3\_ss\_c\_4lag | .9579612 .0823129 -0.50 0.617 .8094843 1.133672

sp75\_601\_ss\_c\_4lag | 1.009016 .0088102 1.03 0.304 .991895 1.026432

sp75\_602\_ss\_c\_4lag | 1.025904 .0269983 0.97 0.331 .9743295 1.080208

sp75\_603\_ss\_c\_4lag | .9947022 .0245141 -0.22 0.829 .9477973 1.043928

sp75\_604\_ss\_c\_4lag | 1.005585 .0020165 2.78 0.005 1.001641 1.009545

sp75\_605\_ss\_c\_4lag | 1.011024 .0108796 1.02 0.308 .9899233 1.032574

sp75\_606\_ss\_c\_4lag | .9922215 .0051421 -1.51 0.132 .9821942 1.002351

sp75\_607\_ss\_c\_4lag | 1.010804 .0166733 0.65 0.515 .9786472 1.044017

sp75\_700\_1\_ss\_c\_4lag | .8175368 .065462 -2.52 0.012 .6987947 .9564559

sp75\_700\_ss\_c\_4lag | .9686443 .0182266 -1.69 0.090 .9335715 1.005035

sp75\_701\_1\_ss\_c\_4lag | .9748702 .0227645 -1.09 0.276 .9312582 1.020525

sp75\_701\_2\_ss\_c\_4lag | 1.036769 .0339763 1.10 0.271 .97227 1.105546

sp75\_701\_3\_ss\_c\_4lag | 1.0206 .0273661 0.76 0.447 .9683486 1.075671

sp75\_701\_4\_ss\_c\_4lag | 1.224067 .1480863 1.67 0.095 .9656674 1.55161

sp75\_701\_ss\_c\_4lag | 1.010081 .0069124 1.47 0.143 .9966237 1.023721

sp75\_703\_2\_ss\_c\_4lag | 1.060337 .0596449 1.04 0.298 .9496489 1.183927

sp75\_703\_3\_ss\_c\_4lag | 1.021686 .0479866 0.46 0.648 .931833 1.120203

sp75\_703\_ss\_c\_4lag | 1.001996 .0182254 0.11 0.913 .9669042 1.038362

sp75\_704\_ss\_c\_4lag | 1.114815 .144745 0.84 0.403 .8643399 1.437874

sp75\_705\_1\_ss\_c\_4lag | .9389072 .0322461 -1.84 0.066 .8777862 1.004284

sp75\_705\_8\_ss\_c\_4lag | .8459247 .0460945 -3.07 0.002 .7602382 .941269

sp75\_705\_ss\_c\_4lag | 1.047162 .0541367 0.89 0.373 .9462548 1.15883

sp75\_706\_ss\_c\_4lag | .9467781 .0420414 -1.23 0.218 .8678623 1.03287

sp75\_800\_2\_ss\_c\_4lag | 1.41e-10 1.42e-10 -22.62 0.000 1.98e-11 1.01e-09

sp75\_800\_3\_ss\_c\_4lag | 1.116419 .1628034 0.76 0.450 .8388793 1.485781

sp75\_800\_4\_ss\_c\_4lag | 1.429968 .3019258 1.69 0.090 .9453712 2.16297

sp75\_800\_ss\_c\_4lag | 1.013572 .0262667 0.52 0.603 .9633761 1.066384

sp75\_801\_ss\_c\_4lag | .8550489 .07759 -1.73 0.084 .7157314 1.021484

sp75\_802\_ss\_c\_4lag | .8758385 .0734287 -1.58 0.114 .7431234 1.032255

sp75\_803\_2\_ss\_c\_4lag | 1.132209 .1390978 1.01 0.312 .8899226 1.44046

sp75\_803\_ss\_c\_4lag | 1.026807 .0318448 0.85 0.394 .9662518 1.091158

sp75\_804\_ss\_c\_4lag | .9898686 .0229581 -0.44 0.661 .945879 1.035904

sp75\_805\_ss\_c\_4lag | .9029267 .0512385 -1.80 0.072 .8078844 1.00915

sp75\_806\_ss\_c\_4lag | 1.164826 .0772187 2.30 0.021 1.0229 1.326444

sp75\_807\_ss\_c\_4lag | 1.017328 .007631 2.29 0.022 1.002481 1.032395

sp75\_808\_ss\_c\_4lag | .9449955 .045822 -1.17 0.243 .8593216 1.039211

sp75\_809\_ss\_c\_4lag | .9871796 .0210002 -0.61 0.544 .9468661 1.029209

sp75\_810\_ss\_c\_4lag | 1.043964 .0350532 1.28 0.200 .9774726 1.114978

sp75\_811\_ss\_c\_4lag | .9940312 .0361211 -0.16 0.869 .9256975 1.067409

sp75\_812\_ss\_c\_4lag | .9731151 .0634592 -0.42 0.676 .8563578 1.105791

sp75\_814\_ss\_c\_4lag | .9471206 .027919 -1.84 0.065 .8939511 1.003452

sp75\_815\_ss\_c\_4lag | 1.35797 .1377645 3.02 0.003 1.113107 1.656699

sp75\_816\_ss\_c\_4lag | 1.044073 .0277392 1.62 0.105 .9910968 1.099882

sp75\_818\_ss\_c\_4lag | 1.088809 .0736484 1.26 0.208 .9536204 1.243163

sp75\_819\_ss\_c\_4lag | 1.093559 .1662317 0.59 0.556 .8118038 1.473103

sp75\_820\_ss\_c\_4lag | .9939245 .031094 -0.19 0.846 .9348122 1.056775

sp75\_821\_ss\_c\_4lag | 1.104735 .087411 1.26 0.208 .9460363 1.290056

sp75\_825\_ss\_c\_4lag | 1.025285 .0978847 0.26 0.794 .8503151 1.236259

sp75\_827\_ss\_c\_4lag | 1.050971 .1013766 0.52 0.606 .8699289 1.269689

sp75\_831\_ss\_c\_4lag | .9474566 .0417597 -1.22 0.221 .8690447 1.032943

sp75\_900\_2\_ss\_c\_4lag | .9716797 .0950185 -0.29 0.769 .8022061 1.176956

sp75\_900\_3\_ss\_c\_4lag | .9618121 .0607522 -0.62 0.538 .8498156 1.088568

sp75\_900\_4\_ss\_c\_4lag | 1.040621 .0566992 0.73 0.465 .9352207 1.1579

sp75\_900\_ss\_c\_4lag | .9912071 .0103886 -0.84 0.399 .9710535 1.011779

sp75\_901\_ss\_c\_4lag | .9682351 .0421652 -0.74 0.459 .8890216 1.054507

sp75\_902\_1\_ss\_c\_4lag | 1.063131 .0740135 0.88 0.379 .9275288 1.218557

sp75\_902\_2\_ss\_c\_4lag | 1.066179 .0176571 3.87 0.000 1.032127 1.101354

sp75\_902\_4\_ss\_c\_4lag | .9831824 .0214231 -0.78 0.436 .9420779 1.02608

sp75\_902\_ss\_c\_4lag | 1.011346 .0102144 1.12 0.264 .9915234 1.031566

sp75\_903\_ss\_c\_4lag | 1.002398 .0169304 0.14 0.887 .9697586 1.036137

sp75\_904\_ss\_c\_4lag | 1.002116 .0039617 0.53 0.593 .9943808 1.009911

sp75\_905\_ss\_c\_4lag | 1.023322 .1155642 0.20 0.838 .8201355 1.276847

sp75\_907\_ss\_c\_4lag | 1.026207 .0698474 0.38 0.704 .8980469 1.172657

sp77\_103\_ss\_c\_4lag | 1.048487 .0254103 1.95 0.051 .9998485 1.099493

sp77\_1103\_ss\_c\_4lag | .9544087 .0211686 -2.10 0.035 .9138079 .9968134

sp77\_1104\_ss\_c\_4lag | 1.008078 .0040576 2.00 0.046 1.000157 1.016062

sp77\_1106\_ss\_c\_4lag | .0030008 .0007589 -22.97 0.000 .001828 .0049261

sp77\_1111\_ss\_c\_4lag | .8854354 .0997192 -1.08 0.280 .7100569 1.104131

sp77\_1112\_ss\_c\_4lag | .9865485 .0260041 -0.51 0.607 .9368754 1.038855

sp77\_1403\_ss\_c\_4lag | .854982 .0963716 -1.39 0.165 .6855064 1.066356

sp77\_1433\_ss\_c\_4lag | .8486306 .0834548 -1.67 0.095 .6998599 1.029026

sp77\_1434\_ss\_c\_4lag | .9446744 .0454368 -1.18 0.237 .8596887 1.038062

sp77\_1437\_ss\_c\_4lag | .8740042 .0604595 -1.95 0.052 .7631877 1.000911

sp77\_1438\_ss\_c\_4lag | .7876364 .1809285 -1.04 0.299 .5021064 1.235537

sp77\_1605\_ss\_c\_4lag | 1.002329 .0058981 0.40 0.693 .990835 1.013956

sp77\_1606\_ss\_c\_4lag | 1.008504 .00685 1.25 0.212 .9951677 1.02202

sp77\_1710\_ss\_c\_4lag | .9904713 .0087009 -1.09 0.276 .9735638 1.007672

sp77\_1802\_ss\_c\_4lag | .8437697 .0906843 -1.58 0.114 .6835037 1.041614

sp77\_1906\_ss\_c\_4lag | 1.148027 .2036333 0.78 0.436 .8109025 1.625307

sp77\_1915\_ss\_c\_4lag | 1.059773 .0709134 0.87 0.386 .929513 1.208286

sp77\_1916\_ss\_c\_4lag | 1.077356 .0659545 1.22 0.224 .955542 1.2147

sp77\_200\_ss\_c\_4lag | .9932003 .0050185 -1.35 0.177 .9834127 1.003085

sp77\_202\_ss\_c\_4lag | .9754532 .0069548 -3.49 0.000 .9619168 .9891802

sp77\_203\_ss\_c\_4lag | .9343225 .0570668 -1.11 0.266 .8289091 1.053142

sp77\_204\_ss\_c\_4lag | .9948227 .0096532 -0.53 0.593 .9760816 1.013924

sp77\_205\_ss\_c\_4lag | 1.003832 .0030853 1.24 0.213 .9978031 1.009897

sp77\_206\_ss\_c\_4lag | 1.016723 .0204508 0.82 0.410 .9774195 1.057606

sp77\_207\_ss\_c\_4lag | 1.057625 .0186657 3.17 0.002 1.021667 1.094849

sp77\_208\_ss\_c\_4lag | 1.012015 .010128 1.19 0.233 .9923577 1.032061

sp77\_210\_ss\_c\_4lag | .98253 .0243303 -0.71 0.477 .9359823 1.031393

sp77\_216\_ss\_c\_4lag | 1.044633 .0879778 0.52 0.604 .885679 1.232114

sp77\_315\_ss\_c\_4lag | .6946881 .1271994 -1.99 0.047 .485213 .9945973

sp77\_400\_ss\_c\_4lag | 1.001129 .0032997 0.34 0.732 .9946826 1.007617

sp77\_401\_ss\_c\_4lag | 1.000086 .0315147 0.00 0.998 .940187 1.063801

sp77\_402\_ss\_c\_4lag | 1.011184 .0181274 0.62 0.535 .9762713 1.047344

sp77\_403\_1\_ss\_c\_4lag | 1.046116 .0519729 0.91 0.364 .9490533 1.153105

sp77\_403\_ss\_c\_4lag | 1.224531 .1526109 1.63 0.104 .9591494 1.56334

sp77\_404\_ss\_c\_4lag | .993721 .0033917 -1.85 0.065 .9870955 1.000391

sp77\_405\_ss\_c\_4lag | 1.010023 .029014 0.35 0.728 .954728 1.068521

sp77\_408\_ss\_c\_4lag | .9884405 .0462306 -0.25 0.804 .9018593 1.083334

sp77\_409\_ss\_c\_4lag | .6416511 .1200556 -2.37 0.018 .4446676 .9258963

sp77\_410\_ss\_c\_4lag | .9992503 .006635 -0.11 0.910 .9863302 1.01234

sp77\_411\_ss\_c\_4lag | .9389916 .0530351 -1.11 0.265 .8405916 1.04891

sp77\_412\_ss\_c\_4lag | 1.068724 .0482867 1.47 0.141 .9781531 1.167681

sp77\_413\_ss\_c\_4lag | .8674134 .0353072 -3.49 0.000 .800901 .9394494

sp77\_500\_ss\_c\_4lag | .9457176 .0263877 -2.00 0.045 .8953875 .9988768

sp77\_501\_ss\_c\_4lag | .9875477 .0335226 -0.37 0.712 .9239826 1.055486

sp77\_502\_1\_ss\_c\_4lag | 1.254038 .1564396 1.81 0.070 .9820292 1.60139

sp77\_502\_2\_ss\_c\_4lag | .9408701 .0339261 -1.69 0.091 .8766714 1.00977

sp77\_502\_ss\_c\_4lag | .9908332 .0043492 -2.10 0.036 .9823456 .9993943

sp77\_503\_1\_ss\_c\_4lag | .853065 .0879295 -1.54 0.123 .697019 1.044046

sp77\_503\_ss\_c\_4lag | .9002224 .0670911 -1.41 0.158 .7778791 1.041808

sp77\_504\_ss\_c\_4lag | .9920342 .0192306 -0.41 0.680 .9550499 1.030451

sp77\_505\_ss\_c\_4lag | .9651579 .0141522 -2.42 0.016 .9378149 .9932981

sp77\_506\_1\_ss\_c\_4lag | 1.026689 .0881902 0.31 0.759 .8676061 1.214941

sp77\_506\_ss\_c\_4lag | 1.026245 .0357234 0.74 0.457 .9585635 1.098705

sp77\_507\_ss\_c\_4lag | 1.078178 .0497877 1.63 0.103 .9848816 1.180312

sp77\_508\_1\_ss\_c\_4lag | 1.393086 .1538461 3.00 0.003 1.121954 1.72974

sp77\_508\_ss\_c\_4lag | 1.112809 .0417132 2.85 0.004 1.033984 1.197644

sp77\_509\_ss\_c\_4lag | .9443527 .0271458 -1.99 0.046 .8926189 .9990848

sp77\_510\_ss\_c\_4lag | .9292158 .0402998 -1.69 0.091 .8534935 1.011656

sp77\_511\_ss\_c\_4lag | .9277794 .1017132 -0.68 0.494 .7483879 1.150172

sp77\_512\_ss\_c\_4lag | .9853859 .0130704 -1.11 0.267 .9600984 1.011339

sp77\_513\_ss\_c\_4lag | .9980342 .0197081 -0.10 0.921 .960145 1.037419

sp77\_514\_ss\_c\_4lag | 1.410019 .1450178 3.34 0.001 1.152605 1.724922

sp77\_515\_ss\_c\_4lag | 1.005721 .174768 0.03 0.974 .7154196 1.41382

sp77\_516\_ss\_c\_4lag | .988351 .0125658 -0.92 0.357 .9640267 1.013289

sp77\_600\_ss\_c\_4lag | 1.028291 .0472376 0.61 0.544 .9397525 1.125171

sp77\_601\_ss\_c\_4lag | 1.019536 .0759602 0.26 0.795 .8810161 1.179834

sp77\_602\_ss\_c\_4lag | 1.109624 .0753594 1.53 0.126 .9713308 1.267607

sp77\_603\_ss\_c\_4lag | 1.465109 .1254294 4.46 0.000 1.238791 1.732775

sp77\_604\_ss\_c\_4lag | .9394938 .0542262 -1.08 0.280 .8390036 1.05202

sp77\_605\_ss\_c\_4lag | 1.032352 .2286951 0.14 0.886 .6687478 1.59365

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

sp77\_700\_1\_ss\_c\_4lag | 1.092019 .0845354 1.14 0.255 .9382893 1.270935

sp77\_700\_ss\_c\_4lag | .9666416 .0784119 -0.42 0.676 .8245517 1.133217

sp77\_701\_1\_ss\_c\_4lag | 1.034599 .107987 0.33 0.745 .843194 1.269454

sp77\_701\_2\_ss\_c\_4lag | .9401411 .0721494 -0.80 0.421 .8088522 1.09274

sp77\_701\_3\_ss\_c\_4lag | 1.08784 .0467216 1.96 0.050 1.000015 1.183377

sp77\_701\_4\_ss\_c\_4lag | .949705 .0735391 -0.67 0.505 .8159755 1.105351

sp77\_701\_ss\_c\_4lag | .9874393 .0165597 -0.75 0.451 .9555105 1.020435

sp77\_704\_1\_ss\_c\_4lag | 1.06572 .0473539 1.43 0.152 .9768346 1.162693

sp77\_704\_8\_ss\_c\_4lag | 1.094848 .2343801 0.42 0.672 .7196687 1.665618

sp77\_704\_9\_ss\_c\_4lag | 1.356956 .2412815 1.72 0.086 .9576638 1.922732

sp77\_704\_ss\_c\_4lag | 1.021261 .1122725 0.19 0.848 .8233031 1.266817

sp77\_705\_ss\_c\_4lag | .9555057 .0555226 -0.78 0.433 .8526516 1.070767

sp77\_800\_1\_ss\_c\_4lag | 1.073122 .1532479 0.49 0.621 .8111341 1.419729

sp77\_800\_2\_ss\_c\_4lag | 1.171804 .0963639 1.93 0.054 .9973692 1.376747

sp77\_800\_ss\_c\_4lag | 1.356788 .2572302 1.61 0.108 .935696 1.967385

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

sp77\_802\_ss\_c\_4lag | .9738471 .0998872 -0.26 0.796 .7964954 1.190689

sp77\_803\_ss\_c\_4lag | 1.267951 .3508966 0.86 0.391 .73712 2.181054

sp77\_804\_ss\_c\_4lag | .6519157 .0930374 -3.00 0.003 .4928482 .8623223

sp77\_805\_ss\_c\_4lag | .9785432 .0816969 -0.26 0.795 .8308347 1.152512

sp77\_807\_1\_ss\_c\_4lag | .8516214 .1051786 -1.30 0.193 .6685284 1.084859

sp77\_807\_2\_ss\_c\_4lag | 1.04941 .0843134 0.60 0.548 .8965129 1.228383

sp77\_807\_3\_ss\_c\_4lag | 1.164965 .0394776 4.51 0.000 1.090104 1.244968

sp77\_807\_ss\_c\_4lag | 1.056142 .0730654 0.79 0.430 .9222212 1.209511

sp77\_808\_ss\_c\_4lag | 1.345802 .0970593 4.12 0.000 1.168402 1.550136

sp77\_809\_ss\_c\_4lag | .9513025 .0392956 -1.21 0.227 .8773197 1.031524

sp77\_810\_ss\_c\_4lag | .9717819 .0749274 -0.37 0.710 .8354847 1.130314

sp77\_900\_1\_ss\_c\_4lag | 1.340939 .1456105 2.70 0.007 1.083872 1.658974

sp77\_900\_2\_ss\_c\_4lag | .0036425 .0009257 -22.09 0.000 .0022135 .0059942

sp77\_900\_ss\_c\_4lag | .8735466 .0821257 -1.44 0.150 .7265427 1.050294

sp77\_901\_1\_ss\_c\_4lag | .2943376 .2513066 -1.43 0.152 .0552188 1.568935

sp77\_901\_ss\_c\_4lag | .9890839 .0442508 -0.25 0.806 .9060477 1.07973

sp77\_902\_3\_ss\_c\_4lag | .0000371 .0000189 -20.07 0.000 .0000137 .0001006

sp77\_902\_ss\_c\_4lag | 1.001402 .0524153 0.03 0.979 .9037639 1.109589

sp77\_903\_ss\_c\_4lag | 1.028386 .0485972 0.59 0.554 .9374152 1.128185

sp77\_904\_ss\_c\_4lag | 1.006579 .0177054 0.37 0.709 .972468 1.041886

mine\_time | .9966018 .0064022 -0.53 0.596 .9841324 1.009229

onsite\_insp\_hours | .9998913 .0000412 -2.64 0.008 .9998106 .9999721

|

state |

1 | 1.081639 .0989103 0.86 0.391 .904158 1.293958

2 | 1.657679 .1547799 5.41 0.000 1.380456 1.990574

3 | .6782113 .1236065 -2.13 0.033 .4744937 .9693924

4 | 1.076068 .0762629 1.03 0.301 .9365124 1.23642

5 | .9202653 .155996 -0.49 0.624 .6601219 1.282927

6 | .8963087 .0478328 -2.05 0.040 .8072946 .9951377

7 | 1.086523 .2534614 0.36 0.722 .6878169 1.716347

8 | .886337 .0757888 -1.41 0.158 .7495738 1.048053

9 | .8190057 .0643614 -2.54 0.011 .7020942 .955385

10 | .9906282 .1341421 -0.07 0.945 .7597112 1.291733

11 | .9404332 .2313278 -0.25 0.803 .5806967 1.523023

12 | .9953748 .0875111 -0.05 0.958 .8378204 1.182558

13 | 1.25841 .1978572 1.46 0.144 .9246755 1.712595

14 | .5870193 .0782373 -4.00 0.000 .4520694 .7622539

15 | .6761125 .044138 -6.00 0.000 .5949094 .7683995

17 | 1.108934 .0972135 1.18 0.238 .9338694 1.316817

|

time |

2000 | 1.131578 .0742292 1.88 0.060 .9950553 1.286831

2002 | .9767464 .0594242 -0.39 0.699 .8669531 1.100444

2003 | .901945 .0623603 -1.49 0.136 .7876407 1.032837

2004 | .8864624 .0623576 -1.71 0.087 .7722949 1.017507

2005 | .7717608 .0560867 -3.56 0.000 .669303 .889903

2006 | .7486614 .0560592 -3.87 0.000 .6464696 .8670074

2007 | .6957036 .0545526 -4.63 0.000 .5965935 .8112786

2008 | .632162 .0487289 -5.95 0.000 .5435197 .7352608

2009 | .5336719 .0437487 -7.66 0.000 .45446 .6266904

2010 | .5579657 .0457025 -7.12 0.000 .4752107 .6551319

2011 | .5469734 .0458224 -7.20 0.000 .4641487 .6445776

2012 | .5475311 .0468823 -7.03 0.000 .4629401 .6475791

2013 | .4976907 .0452317 -7.68 0.000 .4164853 .5947294

2014 | .4872044 .0478027 -7.33 0.000 .4019707 .590511

2015 | .502729 .0523162 -6.61 0.000 .4099719 .6164726

|

\_cons | .000017 1.11e-06 -168.10 0.000 .000015 .0000193

ln(hours) | 1 (exposure)

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

/lnalpha | -1.936019 .1415494 -2.213451 -1.658587

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

alpha | .1442772 .0204223 .1093227 .1904078

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

(est1 stored)

**. lrtest pois nbin, stats force**

Likelihood-ratio test LR chi2(1) = 267.54

(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 -8616.629 298 17829.26 19838.02

nbin | 6,253 -8961.932 -8482.858 299 17563.72 19579.22

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

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

**. summ MR spcssv3\_yhat**

Variable | Obs Mean Std. Dev. Min Max

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

MR | 6,253 1.881017 3.268911 0 37

spcssv3\_yhat | 6,253 1.900338 2.890477 3.55e-25 33.5314