. // Model SP.B.SSV.2

**. logit MR\_indicator `subpart\_sigsub\_lag\_1\_vars' `covariates' ib(freq).state ///**

**> ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or**

note: sp47\_44\_ss\_1lag != 0 predicts success perfectly

sp47\_44\_ss\_1lag dropped and 1 obs not used

note: sp48\_4\_ss\_1lag != 0 predicts failure perfectly

sp48\_4\_ss\_1lag dropped and 2 obs not used

note: sp71\_701\_ss\_1lag != 0 predicts success perfectly

sp71\_701\_ss\_1lag dropped and 1 obs not used

note: sp72\_610\_ss\_1lag != 0 predicts failure perfectly

sp72\_610\_ss\_1lag dropped and 1 obs not used

note: sp75\_1003\_1\_ss\_1lag != 0 predicts success perfectly

sp75\_1003\_1\_ss\_1lag dropped and 6 obs not used

note: sp75\_1101\_20\_ss\_1lag != 0 predicts failure perfectly

sp75\_1101\_20\_ss\_1lag dropped and 1 obs not used

note: sp75\_1107\_14\_ss\_1lag != 0 predicts success perfectly

sp75\_1107\_14\_ss\_1lag dropped and 1 obs not used

note: sp75\_1400\_2\_ss\_1lag != 0 predicts success perfectly

sp75\_1400\_2\_ss\_1lag dropped and 1 obs not used

note: sp75\_1400\_4\_ss\_1lag != 0 predicts success perfectly

sp75\_1400\_4\_ss\_1lag dropped and 1 obs not used

note: sp75\_1403\_11\_ss\_1lag != 0 predicts success perfectly

sp75\_1403\_11\_ss\_1lag dropped and 1 obs not used

note: sp75\_1403\_3\_ss\_1lag != 0 predicts success perfectly

sp75\_1403\_3\_ss\_1lag dropped and 1 obs not used

note: sp75\_1403\_4\_ss\_1lag != 0 predicts success perfectly

sp75\_1403\_4\_ss\_1lag dropped and 3 obs not used

note: sp75\_1404\_1\_ss\_1lag != 0 predicts failure perfectly

sp75\_1404\_1\_ss\_1lag dropped and 5 obs not used

note: sp75\_1405\_1\_ss\_1lag != 0 predicts success perfectly

sp75\_1405\_1\_ss\_1lag dropped and 3 obs not used

note: sp75\_1431\_ss\_1lag != 0 predicts failure perfectly

sp75\_1431\_ss\_1lag dropped and 1 obs not used

note: sp75\_1432\_ss\_1lag != 0 predicts failure perfectly

sp75\_1432\_ss\_1lag dropped and 2 obs not used

note: sp75\_153\_ss\_1lag != 0 predicts success perfectly

sp75\_153\_ss\_1lag dropped and 1 obs not used

note: sp75\_155\_ss\_1lag != 0 predicts success perfectly

sp75\_155\_ss\_1lag dropped and 1 obs not used

note: sp75\_156\_ss\_1lag != 0 predicts failure perfectly

sp75\_156\_ss\_1lag dropped and 1 obs not used

note: sp75\_1721\_ss\_1lag != 0 predicts failure perfectly

sp75\_1721\_ss\_1lag dropped and 3 obs not used

note: sp75\_1727\_ss\_1lag != 0 predicts failure perfectly

sp75\_1727\_ss\_1lag dropped and 1 obs not used

note: sp75\_1915\_ss\_1lag != 0 predicts success perfectly

sp75\_1915\_ss\_1lag dropped and 6 obs not used

note: sp75\_511\_1\_ss\_1lag != 0 predicts failure perfectly

sp75\_511\_1\_ss\_1lag dropped and 2 obs not used

note: sp75\_600\_1\_ss\_1lag != 0 predicts failure perfectly

sp75\_600\_1\_ss\_1lag dropped and 5 obs not used

note: sp75\_600\_ss\_1lag != 0 predicts success perfectly

sp75\_600\_ss\_1lag dropped and 1 obs not used

note: sp75\_601\_2\_ss\_1lag != 0 predicts failure perfectly

sp75\_601\_2\_ss\_1lag dropped and 4 obs not used

note: sp75\_705\_8\_ss\_1lag != 0 predicts failure perfectly

sp75\_705\_8\_ss\_1lag dropped and 2 obs not used

note: sp75\_800\_2\_ss\_1lag != 0 predicts failure perfectly

sp75\_800\_2\_ss\_1lag dropped and 1 obs not used

note: sp75\_800\_4\_ss\_1lag != 0 predicts failure perfectly

sp75\_800\_4\_ss\_1lag dropped and 3 obs not used

note: sp75\_803\_2\_ss\_1lag != 0 predicts failure perfectly

sp75\_803\_2\_ss\_1lag dropped and 2 obs not used

note: sp75\_806\_ss\_1lag != 0 predicts success perfectly

sp75\_806\_ss\_1lag dropped and 2 obs not used

note: sp75\_814\_ss\_1lag != 0 predicts success perfectly

sp75\_814\_ss\_1lag dropped and 2 obs not used

note: sp75\_819\_ss\_1lag != 0 predicts success perfectly

sp75\_819\_ss\_1lag dropped and 1 obs not used

note: sp75\_827\_ss\_1lag != 0 predicts success perfectly

sp75\_827\_ss\_1lag dropped and 2 obs not used

note: sp75\_831\_ss\_1lag != 0 predicts success perfectly

sp75\_831\_ss\_1lag dropped and 1 obs not used

note: sp77\_103\_ss\_1lag != 0 predicts failure perfectly

sp77\_103\_ss\_1lag dropped and 1 obs not used

note: sp77\_1106\_ss\_1lag != 0 predicts failure perfectly

sp77\_1106\_ss\_1lag dropped and 1 obs not used

note: sp77\_1433\_ss\_1lag != 0 predicts success perfectly

sp77\_1433\_ss\_1lag dropped and 2 obs not used

note: sp77\_1802\_ss\_1lag != 0 predicts success perfectly

sp77\_1802\_ss\_1lag dropped and 2 obs not used

note: sp77\_1906\_ss\_1lag != 0 predicts success perfectly

sp77\_1906\_ss\_1lag dropped and 2 obs not used

note: sp77\_216\_ss\_1lag != 0 predicts success perfectly

sp77\_216\_ss\_1lag dropped and 6 obs not used

note: sp77\_315\_ss\_1lag != 0 predicts success perfectly

sp77\_315\_ss\_1lag dropped and 1 obs not used

note: sp77\_411\_ss\_1lag != 0 predicts failure perfectly

sp77\_411\_ss\_1lag dropped and 1 obs not used

note: sp77\_413\_ss\_1lag != 0 predicts success perfectly

sp77\_413\_ss\_1lag dropped and 1 obs not used

note: sp77\_502\_1\_ss\_1lag != 0 predicts success perfectly

sp77\_502\_1\_ss\_1lag dropped and 1 obs not used

note: sp77\_508\_1\_ss\_1lag != 0 predicts failure perfectly

sp77\_508\_1\_ss\_1lag dropped and 7 obs not used

note: sp77\_514\_ss\_1lag != 0 predicts success perfectly

sp77\_514\_ss\_1lag dropped and 1 obs not used

note: sp77\_605\_ss\_1lag != 0 predicts failure perfectly

sp77\_605\_ss\_1lag dropped and 5 obs not used

note: sp77\_606\_ss\_1lag != 0 predicts failure perfectly

sp77\_606\_ss\_1lag dropped and 1 obs not used

note: sp77\_701\_3\_ss\_1lag != 0 predicts success perfectly

sp77\_701\_3\_ss\_1lag dropped and 1 obs not used

note: sp77\_704\_8\_ss\_1lag != 0 predicts success perfectly

sp77\_704\_8\_ss\_1lag dropped and 1 obs not used

note: sp77\_704\_9\_ss\_1lag != 0 predicts failure perfectly

sp77\_704\_9\_ss\_1lag dropped and 2 obs not used

note: sp77\_804\_ss\_1lag != 0 predicts failure perfectly

sp77\_804\_ss\_1lag dropped and 3 obs not used

note: sp77\_805\_ss\_1lag != 0 predicts success perfectly

sp77\_805\_ss\_1lag dropped and 2 obs not used

note: sp77\_810\_ss\_1lag != 0 predicts failure perfectly

sp77\_810\_ss\_1lag dropped and 5 obs not used

note: sp77\_900\_2\_ss\_1lag != 0 predicts failure perfectly

sp77\_900\_2\_ss\_1lag dropped and 1 obs not used

note: sp77\_901\_1\_ss\_1lag != 0 predicts success perfectly

sp77\_901\_1\_ss\_1lag dropped and 1 obs not used

note: sp77\_801\_1\_ss\_1lag omitted because of collinearity

Iteration 0: log pseudolikelihood = -12145.343

Iteration 1: log pseudolikelihood = -11443

Iteration 2: log pseudolikelihood = -11432.611

Iteration 3: log pseudolikelihood = -11432.54

Iteration 4: log pseudolikelihood = -11432.54

Logistic regression Number of obs = 25,990

Wald chi2(319) = .

Log pseudolikelihood = -11432.54 Prob > chi2 = .

(Std. Err. adjusted for 1,474 clusters in mineid)

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

| Robust

MR\_indicator | Odds Ratio Std. Err. z P>|z| [95% Conf. Interval]

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

sp47\_41\_ss\_1lag | .7955904 .4290831 -0.42 0.672 .2764483 2.28963

sp47\_44\_ss\_1lag | 1 (omitted)

sp48\_11\_ss\_1lag | 1.059677 .2221019 0.28 0.782 .702695 1.598013

sp48\_25\_ss\_1lag | 1.04472 .33976 0.13 0.893 .5523004 1.976171

sp48\_26\_ss\_1lag | 1.105555 .2761878 0.40 0.688 .6775396 1.803956

sp48\_27\_ss\_1lag | 1.545198 .3615343 1.86 0.063 .9768456 2.44423

sp48\_28\_ss\_1lag | .8384861 .2159381 -0.68 0.494 .5061545 1.38902

sp48\_4\_ss\_1lag | 1 (omitted)

sp48\_5\_ss\_1lag | .6368775 .264762 -1.09 0.278 .281965 1.438522

sp48\_6\_ss\_1lag | .6245198 .1557136 -1.89 0.059 .3831009 1.018074

sp48\_7\_ss\_1lag | 1.25881 .2459009 1.18 0.239 .8583865 1.846023

sp48\_8\_ss\_1lag | 1.095375 .4296842 0.23 0.816 .5077629 2.363006

sp71\_701\_ss\_1lag | 1 (omitted)

sp72\_503\_ss\_1lag | .6951438 .3083191 -0.82 0.412 .2914331 1.658099

sp72\_610\_ss\_1lag | 1 (omitted)

sp72\_620\_ss\_1lag | .5313616 .3566339 -0.94 0.346 .1425901 1.980118

sp72\_630\_ss\_1lag | 1.084638 .0382719 2.30 0.021 1.012162 1.162304

sp75\_100\_ss\_1lag | .7559593 .4256518 -0.50 0.619 .2507375 2.279174

sp75\_1001\_1\_ss\_1lag | .5733402 1.089897 -0.29 0.770 .0138138 23.79651

sp75\_1001\_ss\_1lag | .7655375 .8604014 -0.24 0.812 .0845835 6.928628

sp75\_1003\_1\_ss\_1lag | 1 (omitted)

sp75\_1100\_2\_ss\_1lag | 1.065162 .0566234 1.19 0.235 .9597683 1.18213

sp75\_1101\_20\_ss\_1lag | 1 (omitted)

sp75\_1102\_ss\_1lag | .9536644 .1492552 -0.30 0.762 .7017405 1.296029

sp75\_1103\_4\_ss\_1lag | 1.089688 .1232977 0.76 0.448 .8729493 1.360239

sp75\_1104\_ss\_1lag | .9351672 .3619788 -0.17 0.863 .4379368 1.99695

sp75\_1106\_2\_ss\_1lag | 1.027388 .164777 0.17 0.866 .7502651 1.40687

sp75\_1106\_3\_ss\_1lag | 1.188759 .0949741 2.16 0.030 1.016455 1.39027

sp75\_1106\_4\_ss\_1lag | .5751303 .2344174 -1.36 0.175 .258717 1.27852

sp75\_1106\_5\_ss\_1lag | 1.097634 .2341624 0.44 0.662 .7225494 1.66743

sp75\_1106\_6\_ss\_1lag | 337.4687 4361.465 0.45 0.652 3.37e-09 3.38e+13

sp75\_1106\_ss\_1lag | .9332582 .2752331 -0.23 0.815 .5235626 1.663547

sp75\_1107\_14\_ss\_1lag | 1 (omitted)

sp75\_1400\_1\_ss\_1lag | 1.232419 1.127772 0.23 0.819 .2050378 7.40769

sp75\_1400\_2\_ss\_1lag | 1 (omitted)

sp75\_1400\_3\_ss\_1lag | .769032 .2825874 -0.71 0.475 .3742511 1.58025

sp75\_1400\_4\_ss\_1lag | 1 (omitted)

sp75\_1400\_ss\_1lag | 1.252069 .2359981 1.19 0.233 .8653431 1.811625

sp75\_1401\_ss\_1lag | 11.51416 6.315806 4.45 0.000 3.929403 33.73943

sp75\_1403\_10\_ss\_1lag | 1.112429 .1131927 1.05 0.295 .9112979 1.357952

sp75\_1403\_11\_ss\_1lag | 1 (omitted)

sp75\_1403\_3\_ss\_1lag | 1 (omitted)

sp75\_1403\_4\_ss\_1lag | 1 (omitted)

sp75\_1403\_5\_ss\_1lag | .9528688 .0541414 -0.85 0.396 .8524489 1.065118

sp75\_1403\_6\_ss\_1lag | .9251624 .051813 -1.39 0.165 .8289858 1.032497

sp75\_1403\_7\_ss\_1lag | 1.08015 .262814 0.32 0.751 .6704653 1.740172

sp75\_1403\_8\_ss\_1lag | .9496273 .0628412 -0.78 0.435 .8341138 1.081138

sp75\_1403\_9\_ss\_1lag | 1.897985 1.853307 0.66 0.512 .2799811 12.8664

sp75\_1404\_1\_ss\_1lag | 1 (omitted)

sp75\_1404\_ss\_1lag | .4424241 .6185368 -0.58 0.560 .0285631 6.852866

sp75\_1405\_1\_ss\_1lag | 1 (omitted)

sp75\_1405\_ss\_1lag | .9428922 .0717983 -0.77 0.440 .8121678 1.094658

sp75\_1431\_ss\_1lag | 1 (omitted)

sp75\_1432\_ss\_1lag | 1 (omitted)

sp75\_1433\_ss\_1lag | 1.666684 1.536946 0.55 0.580 .2734707 10.15771

sp75\_1434\_ss\_1lag | 1.372302 .6316916 0.69 0.492 .5567098 3.382757

sp75\_1435\_ss\_1lag | 6.086314 5.048039 2.18 0.029 1.197735 30.92772

sp75\_1437\_ss\_1lag | 1.305296 1.409389 0.25 0.805 .1572633 10.83405

sp75\_150\_ss\_1lag | 1.625709 2.090297 0.38 0.705 .1307944 20.20676

sp75\_151\_ss\_1lag | .0980561 .1080956 -2.11 0.035 .0113012 .8507983

sp75\_153\_ss\_1lag | 1 (omitted)

sp75\_155\_ss\_1lag | 1 (omitted)

sp75\_156\_ss\_1lag | 1 (omitted)

sp75\_1600\_2\_ss\_1lag | .9531955 .4224664 -0.11 0.914 .3998715 2.272184

sp75\_1712\_10\_ss\_1lag | 3.356162 2.567686 1.58 0.114 .7492336 15.03379

sp75\_1712\_6\_ss\_1lag | 2.158707 1.655303 1.00 0.316 .4802746 9.702815

sp75\_1720\_ss\_1lag | .9392218 .1023705 -0.58 0.565 .7585626 1.162907

sp75\_1721\_ss\_1lag | 1 (omitted)

sp75\_1725\_ss\_1lag | 1.007419 .0168012 0.44 0.658 .975022 1.040893

sp75\_1726\_ss\_1lag | 1.217307 .3179509 0.75 0.452 .7295799 2.031081

sp75\_1727\_ss\_1lag | 1 (omitted)

sp75\_1728\_ss\_1lag | 1.841686 1.348422 0.83 0.404 .4385245 7.734592

sp75\_1729\_ss\_1lag | 1.319407 .5819044 0.63 0.530 .5558652 3.131759

sp75\_1730\_ss\_1lag | .3004409 .1978181 -1.83 0.068 .082662 1.091974

sp75\_1731\_ss\_1lag | 1.003835 .0217137 0.18 0.860 .9621661 1.047308

sp75\_1903\_ss\_1lag | 1.278892 .7860385 0.40 0.689 .3834111 4.265827

sp75\_1909\_ss\_1lag | .9810619 .0545405 -0.34 0.731 .8797824 1.094

sp75\_1910\_ss\_1lag | .926684 .0895164 -0.79 0.431 .7668436 1.119842

sp75\_1911\_ss\_1lag | 1.039677 .1360477 0.30 0.766 .8044774 1.34364

sp75\_1912\_ss\_1lag | 1.547668 .996092 0.68 0.497 .4383666 5.464095

sp75\_1913\_ss\_1lag | 1.161493 .4445808 0.39 0.696 .548536 2.459394

sp75\_1914\_ss\_1lag | 1.018718 .0678277 0.28 0.781 .8940869 1.160722

sp75\_1915\_ss\_1lag | 1 (omitted)

sp75\_202\_ss\_1lag | 1.008589 .0105487 0.82 0.414 .988124 1.029477

sp75\_208\_ss\_1lag | 1.044946 .0599495 0.77 0.443 .9338119 1.169305

sp75\_211\_ss\_1lag | .9726426 .0658604 -0.41 0.682 .8517575 1.110684

sp75\_212\_ss\_1lag | .719826 .1136485 -2.08 0.037 .528247 .980885

sp75\_214\_ss\_1lag | .9397598 .3343201 -0.17 0.861 .4679521 1.887263

sp75\_312\_ss\_1lag | .9975424 .3330866 -0.01 0.994 .5184526 1.919348

sp75\_320\_ss\_1lag | .9654926 .1751054 -0.19 0.846 .676662 1.377609

sp75\_324\_ss\_1lag | 1.267906 .4269628 0.70 0.481 .6553116 2.453161

sp75\_337\_ss\_1lag | .8146992 .1150517 -1.45 0.147 .6177188 1.074494

sp75\_340\_ss\_1lag | 1.092972 .0678913 1.43 0.152 .9676886 1.234475

sp75\_342\_ss\_1lag | .9705869 .0413969 -0.70 0.484 .8927492 1.055211

sp75\_344\_ss\_1lag | 1.551313 .548536 1.24 0.214 .7757452 3.102271

sp75\_352\_ss\_1lag | .9613985 .2179819 -0.17 0.862 .6164629 1.499339

sp75\_382\_ss\_1lag | 3.34409 1.84972 2.18 0.029 1.130972 9.887899

sp75\_503\_ss\_1lag | 1.023155 .0216566 1.08 0.279 .9815774 1.066494

sp75\_504\_ss\_1lag | 1.389354 1.077093 0.42 0.671 .3040334 6.34899

sp75\_505\_ss\_1lag | 1.071999 1.038679 0.07 0.943 .1604907 7.160425

sp75\_506\_1\_ss\_1lag | .4622403 .3426353 -1.04 0.298 .1081223 1.976152

sp75\_506\_ss\_1lag | 2.278205 1.703025 1.10 0.271 .5263744 9.860316

sp75\_507\_ss\_1lag | 1.95813 .4433457 2.97 0.003 1.256373 3.051859

sp75\_511\_1\_ss\_1lag | 1 (omitted)

sp75\_511\_ss\_1lag | .8372566 .1221284 -1.22 0.223 .6290659 1.114349

sp75\_512\_1\_ss\_1lag | 10.25203 7.3191 3.26 0.001 2.530014 41.54293

sp75\_512\_2\_ss\_1lag | .8113323 .1211436 -1.40 0.161 .6054831 1.087165

sp75\_512\_ss\_1lag | 1.006986 .0222038 0.32 0.752 .9643948 1.051459

sp75\_513\_1\_ss\_1lag | .8345483 .6900261 -0.22 0.827 .1650654 4.219363

sp75\_513\_ss\_1lag | 1.112078 .340877 0.35 0.729 .6098494 2.027905

sp75\_514\_ss\_1lag | .9798206 .0925914 -0.22 0.829 .8141593 1.17919

sp75\_515\_ss\_1lag | .9759116 .0736454 -0.32 0.747 .8417363 1.131475

sp75\_516\_1\_ss\_1lag | 1.248257 1.082943 0.26 0.798 .2279462 6.835586

sp75\_516\_2\_ss\_1lag | .7463985 1.045659 -0.21 0.835 .0479169 11.62659

sp75\_516\_ss\_1lag | 1.282372 .1564528 2.04 0.041 1.009637 1.628782

sp75\_517\_1\_ss\_1lag | 1.645617 1.000475 0.82 0.413 .4998382 5.417865

sp75\_517\_ss\_1lag | 1.00732 .0196294 0.37 0.708 .9695724 1.046537

sp75\_518\_1\_ss\_1lag | .683296 .1507107 -1.73 0.084 .4434699 1.052819

sp75\_518\_ss\_1lag | 1.064955 .0828546 0.81 0.419 .9143385 1.240383

sp75\_519\_ss\_1lag | .2292485 .339443 -0.99 0.320 .0125879 4.175046

sp75\_520\_ss\_1lag | .849175 .1126489 -1.23 0.218 .654756 1.101323

sp75\_523\_1\_ss\_1lag | .8807269 .0751305 -1.49 0.137 .7451256 1.041006

sp75\_523\_2\_ss\_1lag | 1.192575 .0938394 2.24 0.025 1.022134 1.391437

sp75\_523\_ss\_1lag | .8226028 .0682084 -2.36 0.019 .6992146 .9677649

sp75\_600\_1\_ss\_1lag | 1 (omitted)

sp75\_600\_ss\_1lag | 1 (omitted)

sp75\_601\_1\_ss\_1lag | 1.073321 .0724673 1.05 0.295 .9402845 1.225181

sp75\_601\_2\_ss\_1lag | 1 (omitted)

sp75\_601\_3\_ss\_1lag | 1.541289 1.532374 0.44 0.663 .219587 10.81837

sp75\_601\_ss\_1lag | .8768791 .071093 -1.62 0.105 .7480463 1.0279

sp75\_602\_ss\_1lag | 1.149007 .1667487 0.96 0.339 .8645555 1.527048

sp75\_603\_ss\_1lag | .8191827 .1510728 -1.08 0.279 .5706937 1.175867

sp75\_604\_ss\_1lag | 1.065815 .0258723 2.63 0.009 1.016293 1.117749

sp75\_605\_ss\_1lag | .9360306 .0939087 -0.66 0.510 .768939 1.139431

sp75\_606\_ss\_1lag | 1.011832 .0562497 0.21 0.832 .9073782 1.128309

sp75\_607\_ss\_1lag | 1.264942 .2254527 1.32 0.187 .891989 1.793832

sp75\_700\_1\_ss\_1lag | .7221239 .5305012 -0.44 0.658 .1711137 3.047464

sp75\_700\_ss\_1lag | .7569639 .1795049 -1.17 0.240 .4755793 1.204835

sp75\_701\_1\_ss\_1lag | .9359614 .213594 -0.29 0.772 .598421 1.463892

sp75\_701\_2\_ss\_1lag | 1.446812 .4703367 1.14 0.256 .765067 2.736056

sp75\_701\_3\_ss\_1lag | .9331733 .3280046 -0.20 0.844 .4685655 1.858465

sp75\_701\_4\_ss\_1lag | 3.580424 4.100047 1.11 0.265 .3794889 33.78079

sp75\_701\_5\_ss\_1lag | 1.244739 .6830406 0.40 0.690 .4246082 3.648954

sp75\_701\_ss\_1lag | 1.109512 .069628 1.66 0.098 .9811021 1.254728

sp75\_703\_2\_ss\_1lag | .7014258 .2950947 -0.84 0.399 .3075214 1.599883

sp75\_703\_3\_ss\_1lag | 2.756061 1.285181 2.17 0.030 1.105005 6.874062

sp75\_703\_ss\_1lag | .90966 .1209982 -0.71 0.477 .7009011 1.180596

sp75\_704\_ss\_1lag | 3.055641 3.060577 1.12 0.265 .4290677 21.761

sp75\_705\_1\_ss\_1lag | .5688611 .3193774 -1.00 0.315 .1892839 1.709617

sp75\_705\_8\_ss\_1lag | 1 (omitted)

sp75\_705\_ss\_1lag | .8834988 .6222553 -0.18 0.860 .2221764 3.51329

sp75\_706\_ss\_1lag | .953844 .3474087 -0.13 0.897 .4671465 1.947608

sp75\_800\_2\_ss\_1lag | 1 (omitted)

sp75\_800\_3\_ss\_1lag | .3926356 .3809144 -0.96 0.335 .0586406 2.62894

sp75\_800\_4\_ss\_1lag | 1 (omitted)

sp75\_800\_ss\_1lag | 1.079535 .2924727 0.28 0.778 .6347825 1.835896

sp75\_801\_ss\_1lag | .9176457 .7843019 -0.10 0.920 .1718551 4.899906

sp75\_802\_ss\_1lag | .606503 .3390247 -0.89 0.371 .2027804 1.814011

sp75\_803\_2\_ss\_1lag | 1 (omitted)

sp75\_803\_ss\_1lag | 1.096274 .2656234 0.38 0.704 .6818293 1.762634

sp75\_804\_ss\_1lag | 1.216058 .3026566 0.79 0.432 .7466283 1.980634

sp75\_805\_ss\_1lag | .3676428 .3234239 -1.14 0.255 .0655548 2.061806

sp75\_806\_ss\_1lag | 1 (omitted)

sp75\_807\_ss\_1lag | 1.032939 .0781004 0.43 0.668 .8906676 1.197937

sp75\_808\_ss\_1lag | 1.246477 .5081478 0.54 0.589 .5606315 2.771349

sp75\_809\_ss\_1lag | 1.31631 .2084695 1.74 0.083 .9650498 1.795421

sp75\_810\_ss\_1lag | 1.112553 .4617643 0.26 0.797 .4932083 2.509639

sp75\_811\_ss\_1lag | 1.245549 .4311652 0.63 0.526 .6319819 2.454804

sp75\_812\_ss\_1lag | .5608224 .2381346 -1.36 0.173 .2440006 1.289021

sp75\_814\_ss\_1lag | 1 (omitted)

sp75\_815\_ss\_1lag | .5402907 .8348071 -0.40 0.690 .0261475 11.16414

sp75\_816\_ss\_1lag | 1.207825 .3266656 0.70 0.485 .7108696 2.052192

sp75\_818\_ss\_1lag | 2.049754 1.360362 1.08 0.280 .5581925 7.526958

sp75\_819\_ss\_1lag | 1 (omitted)

sp75\_820\_ss\_1lag | .5125202 .2436256 -1.41 0.160 .2018802 1.301153

sp75\_821\_ss\_1lag | 1.765609 1.120813 0.90 0.370 .5088029 6.12688

sp75\_825\_ss\_1lag | 3.720253 5.7769 0.85 0.398 .1773396 78.04394

sp75\_827\_ss\_1lag | 1 (omitted)

sp75\_831\_ss\_1lag | 1 (omitted)

sp75\_900\_2\_ss\_1lag | .3229834 .273211 -1.34 0.182 .0615391 1.695156

sp75\_900\_3\_ss\_1lag | 1.191494 .4360685 0.48 0.632 .5815206 2.441285

sp75\_900\_4\_ss\_1lag | 3.518241 1.69728 2.61 0.009 1.366742 9.056589

sp75\_900\_ss\_1lag | 1.030165 .0695901 0.44 0.660 .9024142 1.176

sp75\_901\_ss\_1lag | 1.060651 .3327915 0.19 0.851 .5734536 1.961764

sp75\_902\_1\_ss\_1lag | .631652 .3937817 -0.74 0.461 .186134 2.143533

sp75\_902\_2\_ss\_1lag | 2.194043 .6818944 2.53 0.011 1.193156 4.034531

sp75\_902\_4\_ss\_1lag | .8548753 .1719083 -0.78 0.436 .5764124 1.267863

sp75\_902\_ss\_1lag | .9685033 .0954024 -0.32 0.745 .7984606 1.174759

sp75\_903\_ss\_1lag | 1.001558 .1536005 0.01 0.992 .7415395 1.35275

sp75\_904\_ss\_1lag | 1.063654 .0533018 1.23 0.218 .9641504 1.173426

sp75\_905\_ss\_1lag | 1.612497 1.337515 0.58 0.565 .3172882 8.1949

sp75\_907\_ss\_1lag | .7830698 .3512344 -0.55 0.586 .3250923 1.886229

sp77\_103\_ss\_1lag | 1 (omitted)

sp77\_1103\_ss\_1lag | .8386541 .1691052 -0.87 0.383 .5648688 1.24514

sp77\_1104\_ss\_1lag | 1.006988 .0480517 0.15 0.884 .9170785 1.105712

sp77\_1106\_ss\_1lag | 1 (omitted)

sp77\_1111\_ss\_1lag | 6.447926 4.97323 2.42 0.016 1.421987 29.23779

sp77\_1112\_ss\_1lag | .7412962 .3039254 -0.73 0.465 .3318991 1.655684

sp77\_1403\_ss\_1lag | .2920784 .2443308 -1.47 0.141 .0566824 1.505049

sp77\_1433\_ss\_1lag | 1 (omitted)

sp77\_1434\_ss\_1lag | .3289744 .2215617 -1.65 0.099 .0878789 1.231515

sp77\_1437\_ss\_1lag | 1.652108 1.266285 0.66 0.512 .3678081 7.420886

sp77\_1438\_ss\_1lag | .1994073 .2819025 -1.14 0.254 .0124852 3.184831

sp77\_1605\_ss\_1lag | .9877355 .0543659 -0.22 0.823 .8867265 1.100251

sp77\_1606\_ss\_1lag | 1.049299 .0746344 0.68 0.499 .9127566 1.206267

sp77\_1710\_ss\_1lag | .9816322 .0810698 -0.22 0.822 .8349314 1.154109

sp77\_1802\_ss\_1lag | 1 (omitted)

sp77\_1906\_ss\_1lag | 1 (omitted)

sp77\_1915\_ss\_1lag | 3.294362 3.134004 1.25 0.210 .5105088 21.25883

sp77\_1916\_ss\_1lag | 4.210787 5.009592 1.21 0.227 .4089638 43.35524

sp77\_200\_ss\_1lag | .9627551 .0659638 -0.55 0.580 .8417735 1.101124

sp77\_202\_ss\_1lag | .8188188 .0719973 -2.27 0.023 .6891966 .97282

sp77\_203\_ss\_1lag | .8954805 .5909887 -0.17 0.867 .245635 3.264541

sp77\_204\_ss\_1lag | 1.006373 .1129184 0.06 0.955 .8077024 1.253911

sp77\_205\_ss\_1lag | 1.089288 .062612 1.49 0.137 .9732313 1.219185

sp77\_206\_ss\_1lag | 1.257287 .3164543 0.91 0.363 .7676973 2.059105

sp77\_207\_ss\_1lag | 1.032145 .1979924 0.16 0.869 .7086925 1.503223

sp77\_208\_ss\_1lag | 1.078075 .1134482 0.71 0.475 .8771526 1.325021

sp77\_210\_ss\_1lag | 1.159644 .4331031 0.40 0.692 .5577229 2.411187

sp77\_216\_ss\_1lag | 1 (omitted)

sp77\_315\_ss\_1lag | 1 (omitted)

sp77\_400\_ss\_1lag | 1.012715 .0460705 0.28 0.781 .9263266 1.107159

sp77\_401\_ss\_1lag | .8662289 .2371563 -0.52 0.600 .5065129 1.481408

sp77\_402\_ss\_1lag | 1.132427 .2632257 0.54 0.593 .7180485 1.78594

sp77\_403\_1\_ss\_1lag | .9286823 .431443 -0.16 0.873 .3736111 2.308418

sp77\_403\_ss\_1lag | 1.992177 1.640175 0.84 0.403 .3967588 10.00297

sp77\_404\_ss\_1lag | 1.008713 .0293509 0.30 0.766 .9527956 1.067911

sp77\_405\_ss\_1lag | .76428 .2896797 -0.71 0.478 .3636031 1.606488

sp77\_408\_ss\_1lag | .4764221 .1472855 -2.40 0.016 .2599223 .8732531

sp77\_409\_ss\_1lag | .3565652 .3244844 -1.13 0.257 .0599131 2.122054

sp77\_410\_ss\_1lag | .9959955 .0594868 -0.07 0.946 .885969 1.119686

sp77\_411\_ss\_1lag | 1 (omitted)

sp77\_412\_ss\_1lag | 1.454817 .7320164 0.75 0.456 .5426398 3.900364

sp77\_413\_ss\_1lag | 1 (omitted)

sp77\_500\_ss\_1lag | 2.203757 2.437899 0.71 0.475 .2520719 19.2665

sp77\_501\_ss\_1lag | 1.909294 .6741619 1.83 0.067 .9556922 3.814413

sp77\_502\_1\_ss\_1lag | 1 (omitted)

sp77\_502\_2\_ss\_1lag | 1.077899 .4190683 0.19 0.847 .5030903 2.30946

sp77\_502\_ss\_1lag | .9733341 .048425 -0.54 0.587 .8829036 1.073027

sp77\_503\_1\_ss\_1lag | 15.65431 20.46122 2.10 0.035 1.207972 202.8667

sp77\_503\_ss\_1lag | .6609571 .4007853 -0.68 0.495 .201386 2.169288

sp77\_504\_ss\_1lag | .9639702 .1689734 -0.21 0.834 .683687 1.359158

sp77\_505\_ss\_1lag | .8400711 .1223801 -1.20 0.232 .6314144 1.11768

sp77\_506\_1\_ss\_1lag | .8334609 .2837112 -0.54 0.593 .4276959 1.624184

sp77\_506\_ss\_1lag | .9371491 .2369657 -0.26 0.797 .5709203 1.538303

sp77\_507\_ss\_1lag | 1.01293 .3710063 0.04 0.972 .4940937 2.076583

sp77\_508\_1\_ss\_1lag | 1 (omitted)

sp77\_508\_ss\_1lag | 1.811041 1.725593 0.62 0.533 .2798259 11.72111

sp77\_509\_ss\_1lag | .6015228 .1334338 -2.29 0.022 .3894331 .929119

sp77\_510\_ss\_1lag | .1059104 .0255258 -9.32 0.000 .0660371 .1698592

sp77\_511\_ss\_1lag | .1903639 .201054 -1.57 0.116 .0240205 1.508643

sp77\_512\_ss\_1lag | .9070467 .112433 -0.79 0.431 .7114084 1.156486

sp77\_513\_ss\_1lag | .8156668 .1517785 -1.09 0.274 .5663984 1.174637

sp77\_514\_ss\_1lag | 1 (omitted)

sp77\_515\_ss\_1lag | 4.418299 4.850901 1.35 0.176 .5137021 38.00134

sp77\_516\_ss\_1lag | 1.025144 .1200496 0.21 0.832 .8149007 1.289629

sp77\_600\_ss\_1lag | 1.465299 .7315029 0.77 0.444 .5507969 3.898171

sp77\_601\_ss\_1lag | 1.03291 .6971393 0.05 0.962 .2751462 3.877589

sp77\_602\_ss\_1lag | 1.265659 .7016594 0.42 0.671 .4269975 3.751527

sp77\_603\_ss\_1lag | 8.414601 7.04121 2.55 0.011 1.632154 43.38165

sp77\_604\_ss\_1lag | 1.89594 .6556967 1.85 0.064 .962593 3.734275

sp77\_605\_ss\_1lag | 1 (omitted)

sp77\_606\_ss\_1lag | 1 (omitted)

sp77\_700\_1\_ss\_1lag | 2.539928 3.044055 0.78 0.437 .2424784 26.60541

sp77\_700\_ss\_1lag | 1.69178 1.144583 0.78 0.437 .4492197 6.371311

sp77\_701\_1\_ss\_1lag | .2000955 .1734756 -1.86 0.063 .0365828 1.094456

sp77\_701\_2\_ss\_1lag | .9962759 .3815134 -0.01 0.992 .4703497 2.110272

sp77\_701\_3\_ss\_1lag | 1 (omitted)

sp77\_701\_4\_ss\_1lag | 1.055011 .4322631 0.13 0.896 .4726063 2.355128

sp77\_701\_ss\_1lag | .9276481 .1214367 -0.57 0.566 .7177184 1.198982

sp77\_704\_1\_ss\_1lag | .5481859 .5689152 -0.58 0.562 .0717032 4.190993

sp77\_704\_8\_ss\_1lag | 1 (omitted)

sp77\_704\_9\_ss\_1lag | 1 (omitted)

sp77\_704\_ss\_1lag | 1.802337 1.488249 0.71 0.476 .3572488 9.092874

sp77\_705\_ss\_1lag | 1.300938 .5439124 0.63 0.529 .5732919 2.952144

sp77\_800\_1\_ss\_1lag | .291436 .5515721 -0.65 0.515 .0071377 11.89949

sp77\_800\_2\_ss\_1lag | .6909392 1.072683 -0.24 0.812 .0329571 14.48539

sp77\_800\_ss\_1lag | 3.563502 2.134911 2.12 0.034 1.101332 11.53017

sp77\_801\_1\_ss\_1lag | 1 (omitted)

sp77\_802\_ss\_1lag | 2.36303 1.574751 1.29 0.197 .640057 8.724084

sp77\_803\_ss\_1lag | .8828108 .8591275 -0.13 0.898 .1310694 5.946123

sp77\_804\_ss\_1lag | 1 (omitted)

sp77\_805\_ss\_1lag | 1 (omitted)

sp77\_807\_1\_ss\_1lag | .5675201 .4418533 -0.73 0.467 .123385 2.610358

sp77\_807\_2\_ss\_1lag | .8514421 .5275608 -0.26 0.795 .2527804 2.867919

sp77\_807\_3\_ss\_1lag | 9.167956 13.44215 1.51 0.131 .5178835 162.2979

sp77\_807\_ss\_1lag | 1.186819 .6002174 0.34 0.735 .4404542 3.197923

sp77\_808\_ss\_1lag | 1.070119 .8886672 0.08 0.935 .2101659 5.448814

sp77\_809\_ss\_1lag | 1.203973 .3188031 0.70 0.483 .7165148 2.02306

sp77\_810\_ss\_1lag | 1 (omitted)

sp77\_900\_1\_ss\_1lag | 14.25356 12.44423 3.04 0.002 2.57497 78.89957

sp77\_900\_2\_ss\_1lag | 1 (omitted)

sp77\_900\_ss\_1lag | .3007761 .2283076 -1.58 0.113 .0679405 1.331551

sp77\_901\_1\_ss\_1lag | 1 (omitted)

sp77\_901\_ss\_1lag | 1.09901 .6771427 0.15 0.878 .3285062 3.676715

sp77\_902\_3\_ss\_1lag | 3.69234 5.990095 0.81 0.421 .1536012 88.75825

sp77\_902\_ss\_1lag | .6603191 .3474541 -0.79 0.430 .2354285 1.852032

sp77\_903\_ss\_1lag | .6471006 .584321 -0.48 0.630 .110243 3.798329

sp77\_904\_ss\_1lag | 1.048845 .1728918 0.29 0.772 .7592754 1.448851

mine\_time | .9979829 .002219 -0.91 0.364 .9936432 1.002341

onsite\_insp\_hours | 1.001066 .0002487 4.29 0.000 1.000578 1.001553

|

state |

AL | 2.229328 .4929978 3.63 0.000 1.445232 3.438827

AR | 2.395035 .2278288 9.18 0.000 1.987655 2.88591

CO | .9061254 .1735845 -0.51 0.607 .6224802 1.319019

IL | 1.700037 .2154861 4.19 0.000 1.326066 2.179472

IN | 1.116974 .2382561 0.52 0.604 .735322 1.696714

MD | 1.22853 .3162831 0.80 0.424 .7417293 2.034822

MT | .7437079 .0591318 -3.72 0.000 .6363907 .8691224

NM | 1.533443 .1098143 5.97 0.000 1.332633 1.764512

OH | .9664774 .2471825 -0.13 0.894 .5854526 1.595481

OK | 1.13841 .3204626 0.46 0.645 .6556698 1.976569

PA | 1.314662 .1376729 2.61 0.009 1.070719 1.614184

TN | 1.530694 .235076 2.77 0.006 1.132831 2.06829

UT | .686621 .1430946 -1.80 0.071 .4563765 1.033025

VA | .7437367 .0615411 -3.58 0.000 .6323912 .8746867

WV | 1.276529 .077837 4.00 0.000 1.132735 1.438577

WY | 2.602305 .1803589 13.80 0.000 2.271767 2.980937

|

time |

2000.25 | .9020413 .1454189 -0.64 0.522 .6576631 1.237227

2000.5 | 1.276785 .2024228 1.54 0.123 .9357661 1.74208

2000.75 | .7705584 .1241465 -1.62 0.106 .5619096 1.056683

2001 | .8422947 .1338826 -1.08 0.280 .6168304 1.150171

2001.25 | .7826674 .1300377 -1.47 0.140 .5651357 1.083931

2001.75 | .9510184 .1513545 -0.32 0.752 .6961779 1.299145

2002 | .8328796 .1269335 -1.20 0.230 .6178121 1.122815

2002.25 | .6640171 .1108859 -2.45 0.014 .4786686 .9211357

2002.5 | .9156889 .1511771 -0.53 0.594 .6625482 1.265547

2002.75 | .9183208 .1525153 -0.51 0.608 .6631722 1.271635

2003 | .7576451 .1314303 -1.60 0.110 .5392698 1.064451

2003.25 | .7709229 .1309375 -1.53 0.126 .5526351 1.075433

2003.5 | .9761156 .162163 -0.15 0.884 .7048396 1.351799

2003.75 | .6388443 .1109843 -2.58 0.010 .454484 .89799

2004 | .7312805 .1241733 -1.84 0.065 .5242613 1.020047

2004.25 | .7634725 .1238714 -1.66 0.096 .5555053 1.049297

2004.5 | .6640792 .114431 -2.38 0.018 .4737452 .9308825

2004.75 | .5772956 .1060523 -2.99 0.003 .4027429 .8275011

2005 | .5450199 .0942198 -3.51 0.000 .3883843 .7648268

2005.25 | .6950699 .1105977 -2.29 0.022 .5088473 .9494442

2005.5 | .6127227 .1041723 -2.88 0.004 .439083 .8550299

2005.75 | .4875381 .081903 -4.28 0.000 .3507622 .6776485

2006 | .732795 .1238814 -1.84 0.066 .5261191 1.02066

2006.25 | .5938218 .1021488 -3.03 0.002 .4238704 .8319154

2006.5 | .6314854 .1080179 -2.69 0.007 .4516085 .8830077

2006.75 | .5889668 .1059877 -2.94 0.003 .4139164 .8380482

2007 | .5377256 .0904372 -3.69 0.000 .3867244 .747687

2007.25 | .5205274 .0930031 -3.65 0.000 .3667404 .7388028

2007.5 | .6094072 .1033824 -2.92 0.004 .4370249 .8497848

2007.75 | .6026872 .1033251 -2.95 0.003 .4306867 .8433784

2008 | .4366889 .0760988 -4.75 0.000 .3103409 .6144766

2008.25 | .4908041 .0865681 -4.04 0.000 .3473546 .6934948

2008.5 | .503701 .0868277 -3.98 0.000 .3592883 .706159

2008.75 | .3792531 .0650637 -5.65 0.000 .2709562 .5308345

2009 | .3903734 .0701262 -5.24 0.000 .2745183 .5551229

2009.25 | .3506693 .0628715 -5.84 0.000 .2467664 .4983215

2009.5 | .4351039 .0779666 -4.64 0.000 .3062426 .6181878

2009.75 | .3267452 .0606773 -6.02 0.000 .2270593 .4701962

2010 | .3489768 .0650164 -5.65 0.000 .2422216 .5027827

2010.25 | .3643352 .0674627 -5.45 0.000 .253447 .5237392

2010.5 | .4453654 .0809602 -4.45 0.000 .311876 .6359911

2010.75 | .3366403 .0627847 -5.84 0.000 .2335683 .4851973

2011 | .4441581 .081566 -4.42 0.000 .3098998 .6365812

2011.25 | .4476566 .0797835 -4.51 0.000 .3156747 .6348192

2011.5 | .5097758 .0872875 -3.94 0.000 .3644436 .7130634

2011.75 | .3404581 .0633024 -5.79 0.000 .2364815 .4901513

2012 | .4494248 .0807968 -4.45 0.000 .3159581 .6392703

2012.25 | .4404926 .0817122 -4.42 0.000 .3062239 .6336334

2012.5 | .523476 .094279 -3.59 0.000 .3677847 .7450747

2012.75 | .3238636 .0627611 -5.82 0.000 .221518 .4734949

2013 | .3161103 .0580822 -6.27 0.000 .2205153 .4531466

2013.25 | .2742055 .0539959 -6.57 0.000 .1864058 .40336

2013.5 | .3374353 .0670926 -5.46 0.000 .228531 .4982368

2013.75 | .358144 .0726735 -5.06 0.000 .2406215 .533066

2014 | .2403399 .0497432 -6.89 0.000 .1601962 .3605781

2014.25 | .3016167 .0624323 -5.79 0.000 .2010311 .45253

2014.5 | .3425657 .0690022 -5.32 0.000 .2308279 .5083928

2014.75 | .3583484 .0720067 -5.11 0.000 .2416933 .531308

2015 | .3366055 .0734238 -4.99 0.000 .219507 .5161714

2015.25 | .3254431 .0725922 -5.03 0.000 .2101886 .5038963

2015.5 | .4699415 .1009611 -3.51 0.000 .3084421 .7160015

2015.75 | .2173497 .049957 -6.64 0.000 .1385204 .3410392

2016 | .3569062 .0819165 -4.49 0.000 .2276081 .5596551

|

\_cons | .0000181 2.26e-06 -87.80 0.000 .0000142 .0000231

lnhours | 1 (offset)

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

**. lfit**

Logistic model for MR\_indicator, goodness-of-fit test

number of observations = 25990

number of covariate patterns = 25967

Pearson chi2(25644) = 173758.54

Prob > chi2 = 0.0000

**. linktest**

Iteration 0: log likelihood = -15107.616

Iteration 1: log likelihood = -11499.681

Iteration 2: log likelihood = -11388.442

Iteration 3: log likelihood = -11384.463

Iteration 4: log likelihood = -11384.434

Iteration 5: log likelihood = -11384.434

Logistic regression Number of obs = 25,990

LR chi2(2) = 7446.36

Prob > chi2 = 0.0000

Log likelihood = -11384.434 Pseudo R2 = 0.2464

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

MR\_indicator | Coef. Std. Err. z P>|z| [95% Conf. Interval]

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

\_hat | 1.11394 .0201354 55.32 0.000 1.074475 1.153405

\_hatsq | .0738076 .0068716 10.74 0.000 .0603395 .0872756

\_cons | -.0518448 .020998 -2.47 0.014 -.0930002 -.0106894

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

.

**. estat classification**

Logistic model for MR\_indicator

-------- True --------

Classified | D ~D | Total

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

+ | 3084 1210 | 4294

- | 3882 17814 | 21696

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

Total | 6966 19024 | 25990

Classified + if predicted Pr(D) >= .5

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

Sensitivity Pr( +| D) 44.27%

Specificity Pr( -|~D) 93.64%

Positive predictive value Pr( D| +) 71.82%

Negative predictive value Pr(~D| -) 82.11%

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

False + rate for true ~D Pr( +|~D) 6.36%

False - rate for true D Pr( -| D) 55.73%

False + rate for classified + Pr(~D| +) 28.18%

False - rate for classified - Pr( D| -) 17.89%

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

Correctly classified 80.41%

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

**. summ MR\_indicator spbssv2\_yhat**

Variable | Obs Mean Std. Dev. Min Max

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

MR\_indicator | 30,289 .24187 .428223 0 1

spbssv2\_yhat | 25,990 .2680262 .2346566 .0000263 .9995785