. // Model SP.B.SSV.1

**. eststo: logit MR\_indicator `subpart\_sig\_sub\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or**

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

sp47\_44\_ss dropped and 1 obs not used

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

sp71\_701\_ss dropped and 1 obs not used

note: sp72\_610\_ss != 0 predicts success perfectly

sp72\_610\_ss dropped and 1 obs not used

note: sp72\_620\_ss != 0 predicts success perfectly

sp72\_620\_ss dropped and 5 obs not used

note: sp75\_1001\_1\_ss != 0 predicts success perfectly

sp75\_1001\_1\_ss dropped and 2 obs not used

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

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

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

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

note: sp75\_1106\_6\_ss != 0 predicts success perfectly

sp75\_1106\_6\_ss dropped and 1 obs not used

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

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

note: sp75\_1400\_1\_ss != 0 predicts success perfectly

sp75\_1400\_1\_ss dropped and 5 obs not used

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

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

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

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

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

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

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

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

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

sp75\_1403\_4\_ss dropped and 2 obs not used

note: sp75\_1403\_9\_ss != 0 predicts success perfectly

sp75\_1403\_9\_ss dropped and 10 obs not used

note: sp75\_1404\_ss != 0 predicts success perfectly

sp75\_1404\_ss dropped and 3 obs not used

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

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

note: sp75\_1431\_ss != 0 predicts success perfectly

sp75\_1431\_ss dropped and 1 obs not used

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

sp75\_1432\_ss dropped and 2 obs not used

note: sp75\_1435\_ss != 0 predicts failure perfectly

sp75\_1435\_ss dropped and 2 obs not used

note: sp75\_1437\_ss != 0 predicts success perfectly

sp75\_1437\_ss dropped and 5 obs not used

note: sp75\_150\_ss != 0 predicts success perfectly

sp75\_150\_ss dropped and 2 obs not used

note: sp75\_151\_ss != 0 predicts success perfectly

sp75\_151\_ss dropped and 2 obs not used

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

sp75\_153\_ss dropped and 1 obs not used

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

sp75\_155\_ss dropped and 1 obs not used

note: sp75\_156\_ss != 0 predicts success perfectly

sp75\_156\_ss dropped and 1 obs not used

note: sp75\_1712\_10\_ss != 0 predicts success perfectly

sp75\_1712\_10\_ss dropped and 8 obs not used

note: sp75\_1712\_6\_ss != 0 predicts success perfectly

sp75\_1712\_6\_ss dropped and 3 obs not used

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

sp75\_1721\_ss dropped and 1 obs not used

note: sp75\_1728\_ss != 0 predicts success perfectly

sp75\_1728\_ss dropped and 5 obs not used

note: sp75\_1729\_ss != 0 predicts success perfectly

sp75\_1729\_ss dropped and 15 obs not used

note: sp75\_1903\_ss != 0 predicts success perfectly

sp75\_1903\_ss dropped and 7 obs not used

note: sp75\_1913\_ss != 0 predicts success perfectly

sp75\_1913\_ss dropped and 7 obs not used

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

sp75\_1915\_ss dropped and 5 obs not used

note: sp75\_506\_1\_ss != 0 predicts success perfectly

sp75\_506\_1\_ss dropped and 9 obs not used

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

sp75\_511\_1\_ss dropped and 1 obs not used

note: sp75\_513\_1\_ss != 0 predicts success perfectly

sp75\_513\_1\_ss dropped and 3 obs not used

note: sp75\_519\_ss != 0 predicts success perfectly

sp75\_519\_ss dropped and 1 obs not used

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

sp75\_600\_ss dropped and 1 obs not used

note: sp75\_701\_3\_ss != 0 predicts success perfectly

sp75\_701\_3\_ss dropped and 18 obs not used

note: sp75\_701\_4\_ss != 0 predicts success perfectly

sp75\_701\_4\_ss dropped and 4 obs not used

note: sp75\_701\_5\_ss != 0 predicts success perfectly

sp75\_701\_5\_ss dropped and 13 obs not used

note: sp75\_703\_2\_ss != 0 predicts success perfectly

sp75\_703\_2\_ss dropped and 5 obs not used

note: sp75\_705\_1\_ss != 0 predicts success perfectly

sp75\_705\_1\_ss dropped and 8 obs not used

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

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

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

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

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

sp75\_800\_4\_ss dropped and 2 obs not used

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

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

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

sp75\_814\_ss dropped and 2 obs not used

note: sp75\_818\_ss != 0 predicts success perfectly

sp75\_818\_ss dropped and 3 obs not used

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

sp75\_827\_ss dropped and 2 obs not used

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

sp75\_831\_ss dropped and 1 obs not used

note: sp75\_902\_1\_ss != 0 predicts success perfectly

sp75\_902\_1\_ss dropped and 5 obs not used

note: sp77\_103\_ss != 0 predicts success perfectly

sp77\_103\_ss dropped and 1 obs not used

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

sp77\_1106\_ss dropped and 1 obs not used

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

sp77\_1433\_ss dropped and 1 obs not used

note: sp77\_1434\_ss != 0 predicts success perfectly

sp77\_1434\_ss dropped and 11 obs not used

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

sp77\_1906\_ss dropped and 1 obs not used

note: sp77\_1915\_ss != 0 predicts success perfectly

sp77\_1915\_ss dropped and 3 obs not used

note: sp77\_1916\_ss != 0 predicts success perfectly

sp77\_1916\_ss dropped and 6 obs not used

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

sp77\_216\_ss dropped and 3 obs not used

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

sp77\_315\_ss dropped and 1 obs not used

note: sp77\_409\_ss != 0 predicts success perfectly

sp77\_409\_ss dropped and 2 obs not used

note: sp77\_411\_ss != 0 predicts success perfectly

sp77\_411\_ss dropped and 1 obs not used

note: sp77\_412\_ss != 0 predicts success perfectly

sp77\_412\_ss dropped and 11 obs not used

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

sp77\_514\_ss dropped and 1 obs not used

note: sp77\_515\_ss != 0 predicts success perfectly

sp77\_515\_ss dropped and 1 obs not used

note: sp77\_603\_ss != 0 predicts success perfectly

sp77\_603\_ss dropped and 4 obs not used

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

sp77\_605\_ss dropped and 4 obs not used

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

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

note: sp77\_800\_1\_ss != 0 predicts success perfectly

sp77\_800\_1\_ss dropped and 4 obs not used

note: sp77\_801\_1\_ss != 0 predicts failure perfectly

sp77\_801\_1\_ss dropped and 1 obs not used

note: sp77\_804\_ss != 0 predicts success perfectly

sp77\_804\_ss dropped and 1 obs not used

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

sp77\_805\_ss dropped and 2 obs not used

note: sp77\_807\_3\_ss != 0 predicts success perfectly

sp77\_807\_3\_ss dropped and 4 obs not used

note: sp77\_810\_ss != 0 predicts success perfectly

sp77\_810\_ss dropped and 3 obs not used

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

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

note: sp77\_902\_3\_ss != 0 predicts failure perfectly

sp77\_902\_3\_ss dropped and 2 obs not used

note: sp77\_903\_ss != 0 predicts success perfectly

sp77\_903\_ss dropped and 7 obs not used

note: 17.state != 0 predicts success perfectly

17.state dropped and 7 obs not used

note: sp75\_1727\_ss omitted because of collinearity

note: sp75\_819\_ss omitted because of collinearity

note: sp77\_1438\_ss omitted because of collinearity

note: sp77\_1802\_ss omitted because of collinearity

note: sp77\_413\_ss omitted because of collinearity

note: sp77\_502\_1\_ss omitted because of collinearity

note: sp77\_606\_ss omitted because of collinearity

note: sp77\_701\_3\_ss omitted because of collinearity

note: sp77\_704\_8\_ss omitted because of collinearity

note: sp77\_901\_1\_ss omitted because of collinearity

Iteration 0: log pseudolikelihood = -3007.5768

Iteration 1: log pseudolikelihood = -2746.8816

Iteration 2: log pseudolikelihood = -2723.301

Iteration 3: log pseudolikelihood = -2722.3229

Iteration 4: log pseudolikelihood = -2722.3091

Iteration 5: log pseudolikelihood = -2722.309

Logistic regression Number of obs = 5,970

Wald chi2(238) = .

Log pseudolikelihood = -2722.309 Prob > chi2 = .

(Std. Err. adjusted for 1,232 clusters in mineid)

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

| Robust

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

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

sp47\_41\_ss | .1707054 .1155959 -2.61 0.009 .0452733 .6436532

sp47\_44\_ss | 1 (omitted)

sp48\_11\_ss | .7510396 .2498508 -0.86 0.389 .3912828 1.441567

sp48\_25\_ss | 2.646571 1.336625 1.93 0.054 .983541 7.12155

sp48\_26\_ss | 1.252871 .2392663 1.18 0.238 .8616857 1.821647

sp48\_27\_ss | 1.372736 .5336359 0.81 0.415 .6407547 2.940913

sp48\_28\_ss | .7252015 .2225941 -1.05 0.295 .3973653 1.32351

sp48\_4\_ss | 1.688752 1.923486 0.46 0.645 .1811543 15.74284

sp48\_5\_ss | 1.254037 .4209897 0.67 0.500 .6494649 2.421392

sp48\_6\_ss | .4707787 .1350301 -2.63 0.009 .2683322 .8259636

sp48\_7\_ss | 1.499216 .4249879 1.43 0.153 .8601443 2.613107

sp48\_8\_ss | 1.765733 .7794571 1.29 0.198 .7433177 4.194455

sp71\_701\_ss | 1 (omitted)

sp72\_503\_ss | .3554265 .1837287 -2.00 0.045 .1290455 .9789417

sp72\_610\_ss | 1 (omitted)

sp72\_620\_ss | 1 (omitted)

sp72\_630\_ss | 1.012047 .0407536 0.30 0.766 .9352419 1.095159

sp75\_100\_ss | 1.05068 .7802826 0.07 0.947 .2450921 4.504135

sp75\_1001\_1\_ss | 1 (omitted)

sp75\_1001\_ss | .1317534 .1287671 -2.07 0.038 .0194023 .8946848

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

sp75\_1100\_2\_ss | .9165557 .0551769 -1.45 0.148 .8145472 1.031339

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

sp75\_1102\_ss | 1.105656 .2115783 0.52 0.600 .7598613 1.608815

sp75\_1103\_4\_ss | .9282626 .0968029 -0.71 0.475 .7566659 1.138774

sp75\_1104\_ss | .5707694 .2605048 -1.23 0.219 .2333264 1.396231

sp75\_1106\_2\_ss | .7176105 .1716493 -1.39 0.165 .44904 1.146813

sp75\_1106\_3\_ss | 1.264051 .1520255 1.95 0.051 .9986003 1.600063

sp75\_1106\_4\_ss | .4681624 .3118069 -1.14 0.254 .1269044 1.727095

sp75\_1106\_5\_ss | .7327051 .1860958 -1.22 0.221 .4453866 1.205373

sp75\_1106\_6\_ss | 1 (omitted)

sp75\_1106\_ss | 2.195201 2.406678 0.72 0.473 .2560185 18.8225

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

sp75\_1400\_1\_ss | 1 (omitted)

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

sp75\_1400\_3\_ss | .873786 .7691084 -0.15 0.878 .1556595 4.90495

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

sp75\_1400\_ss | 3.292583 1.837143 2.14 0.033 1.103055 9.828256

sp75\_1401\_ss | .959739 .7489834 -0.05 0.958 .2079087 4.430304

sp75\_1403\_10\_ss | 1.395262 .2344427 1.98 0.047 1.003761 1.939462

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

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

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

sp75\_1403\_5\_ss | .9659528 .1548749 -0.22 0.829 .7054716 1.322611

sp75\_1403\_6\_ss | 1.065378 .1322279 0.51 0.610 .8353299 1.358781

sp75\_1403\_7\_ss | 1.476175 .5478966 1.05 0.294 .7131917 3.05541

sp75\_1403\_8\_ss | 1.072591 .1585684 0.47 0.635 .8027777 1.433089

sp75\_1403\_9\_ss | 1 (omitted)

sp75\_1404\_1\_ss | 2.597196 2.107718 1.18 0.240 .5293271 12.7434

sp75\_1404\_ss | 1 (omitted)

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

sp75\_1405\_ss | .8595062 .1038611 -1.25 0.210 .6782526 1.089197

sp75\_1431\_ss | 1 (omitted)

sp75\_1432\_ss | 1 (omitted)

sp75\_1433\_ss | .6633545 .4446683 -0.61 0.540 .1783024 2.467937

sp75\_1434\_ss | .5046289 .3061423 -1.13 0.260 .1536651 1.657177

sp75\_1435\_ss | 1 (omitted)

sp75\_1437\_ss | 1 (omitted)

sp75\_150\_ss | 1 (omitted)

sp75\_151\_ss | 1 (omitted)

sp75\_153\_ss | 1 (omitted)

sp75\_155\_ss | 1 (omitted)

sp75\_156\_ss | 1 (omitted)

sp75\_1600\_2\_ss | 1.039247 .4933376 0.08 0.935 .4098712 2.635056

sp75\_1712\_10\_ss | 1 (omitted)

sp75\_1712\_6\_ss | 1 (omitted)

sp75\_1720\_ss | 1.012014 .1226588 0.10 0.922 .7980292 1.283378

sp75\_1721\_ss | 1 (omitted)

sp75\_1725\_ss | 1.037511 .0236068 1.62 0.106 .9922594 1.084827

sp75\_1726\_ss | 1.333 .7117249 0.54 0.590 .4681131 3.795856

sp75\_1727\_ss | 1 (omitted)

sp75\_1728\_ss | 1 (omitted)

sp75\_1729\_ss | 1 (omitted)

sp75\_1730\_ss | 1.2282 .9540429 0.26 0.791 .2679611 5.629458

sp75\_1731\_ss | .9470324 .0211238 -2.44 0.015 .9065224 .9893527

sp75\_1903\_ss | 1 (omitted)

sp75\_1909\_ss | 1.128531 .1085233 1.26 0.209 .9346713 1.362598

sp75\_1910\_ss | 1.306194 .2443564 1.43 0.153 .9052511 1.884718

sp75\_1911\_ss | 1.064431 .1719111 0.39 0.699 .7756113 1.460801

sp75\_1912\_ss | .2764835 .2113569 -1.68 0.093 .0617975 1.236994

sp75\_1913\_ss | 1 (omitted)

sp75\_1914\_ss | .9601957 .0993372 -0.39 0.695 .7839683 1.176037

sp75\_1915\_ss | 1 (omitted)

sp75\_202\_ss | 1.02868 .0112197 2.59 0.010 1.006923 1.050907

sp75\_208\_ss | .9595332 .05673 -0.70 0.485 .8545448 1.07742

sp75\_211\_ss | .8844182 .065018 -1.67 0.095 .7657405 1.021489

sp75\_212\_ss | 1.389733 .3859108 1.19 0.236 .8064242 2.394964

sp75\_214\_ss | 1.585516 .5699113 1.28 0.200 .7838039 3.207256

sp75\_312\_ss | 1.147585 .3511062 0.45 0.653 .6300248 2.090316

sp75\_320\_ss | 1.108696 .2590236 0.44 0.659 .7013694 1.75258

sp75\_324\_ss | 1.302506 .6573265 0.52 0.600 .4844063 3.50227

sp75\_337\_ss | .664708 .1229149 -2.21 0.027 .4626264 .9550617

sp75\_340\_ss | 1.013175 .0870004 0.15 0.879 .8562338 1.198881

sp75\_342\_ss | .9822463 .0572469 -0.31 0.759 .8762156 1.101108

sp75\_344\_ss | .6550883 .3179319 -0.87 0.383 .2530399 1.695941

sp75\_352\_ss | .6610168 .2977541 -0.92 0.358 .2733946 1.598214

sp75\_382\_ss | 2.608424 3.046467 0.82 0.412 .2643815 25.73507

sp75\_503\_ss | 1.080283 .0311878 2.67 0.007 1.020854 1.143173

sp75\_504\_ss | .853302 .888865 -0.15 0.879 .1107709 6.573245

sp75\_505\_ss | 1.310309 1.612666 0.22 0.826 .1174237 14.62149

sp75\_506\_1\_ss | 1 (omitted)

sp75\_506\_ss | .8438973 1.008182 -0.14 0.887 .0811674 8.773996

sp75\_507\_ss | 1.372521 .4494505 0.97 0.334 .7224061 2.607692

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

sp75\_511\_ss | .988924 .1760224 -0.06 0.950 .6976767 1.401753

sp75\_512\_1\_ss | 1.145867 1.024763 0.15 0.879 .1985608 6.612633

sp75\_512\_2\_ss | .9513318 .1867944 -0.25 0.799 .647438 1.397867

sp75\_512\_ss | 1.018581 .0314143 0.60 0.551 .9588342 1.082051

sp75\_513\_1\_ss | 1 (omitted)

sp75\_513\_ss | .2960095 .1819892 -1.98 0.048 .0887114 .9877154

sp75\_514\_ss | .9596694 .0986394 -0.40 0.689 .7845689 1.173849

sp75\_515\_ss | .9286414 .0805939 -0.85 0.394 .7833843 1.100832

sp75\_516\_1\_ss | 1.763014 1.482012 0.67 0.500 .3394099 9.157709

sp75\_516\_2\_ss | 9.344678 8.761426 2.38 0.017 1.487616 58.69995

sp75\_516\_ss | 1.187882 .1764127 1.16 0.246 .887894 1.589225

sp75\_517\_1\_ss | 2.88806 2.655616 1.15 0.249 .4763356 17.51053

sp75\_517\_ss | .9778443 .0181151 -1.21 0.227 .9429762 1.014002

sp75\_518\_1\_ss | 1.08589 .2877148 0.31 0.756 .646031 1.825232

sp75\_518\_ss | 1.162923 .1335917 1.31 0.189 .9284716 1.456577

sp75\_519\_ss | 1 (omitted)

sp75\_520\_ss | .9262599 .115137 -0.62 0.538 .7259819 1.181789

sp75\_523\_1\_ss | 1.1256 .1015976 1.31 0.190 .9430917 1.343428

sp75\_523\_2\_ss | 1.176868 .0983449 1.95 0.051 .9990726 1.386303

sp75\_523\_ss | .8518141 .0669056 -2.04 0.041 .7302765 .9935788

sp75\_600\_1\_ss | 1.888362 1.017799 1.18 0.238 .6565993 5.430881

sp75\_600\_ss | 1 (omitted)

sp75\_601\_1\_ss | .8701016 .0657845 -1.84 0.066 .7502646 1.00908

sp75\_601\_2\_ss | 1.278362 .8616478 0.36 0.716 .3411324 4.790545

sp75\_601\_3\_ss | .4741011 .3400529 -1.04 0.298 .1162357 1.933759

sp75\_601\_ss | .9505824 .0876722 -0.55 0.583 .7933841 1.138927

sp75\_602\_ss | .8617093 .163898 -0.78 0.434 .5935556 1.251008

sp75\_603\_ss | 2.003901 .6864223 2.03 0.042 1.024007 3.921475

sp75\_604\_ss | 1.06589 .0328641 2.07 0.038 1.003385 1.132288

sp75\_605\_ss | .9092311 .0830925 -1.04 0.298 .7601249 1.087586

sp75\_606\_ss | .9750589 .0606129 -0.41 0.685 .8632118 1.101398

sp75\_607\_ss | 1.038379 .1897981 0.21 0.837 .7257225 1.485734

sp75\_700\_1\_ss | .2436065 .1815589 -1.89 0.058 .0565317 1.049749

sp75\_700\_ss | 1.335092 .5043132 0.77 0.444 .636768 2.799247

sp75\_701\_1\_ss | .8418611 .1606215 -0.90 0.367 .5792111 1.223613

sp75\_701\_2\_ss | 1.395491 .6298944 0.74 0.460 .5761203 3.380189

sp75\_701\_3\_ss | 1 (omitted)

sp75\_701\_4\_ss | 1 (omitted)

sp75\_701\_5\_ss | 1 (omitted)

sp75\_701\_ss | 1.171705 .0863022 2.15 0.031 1.014199 1.353673

sp75\_703\_2\_ss | 1 (omitted)

sp75\_703\_3\_ss | 1.027559 .6428109 0.04 0.965 .3015228 3.501818

sp75\_703\_ss | 1.013015 .1831182 0.07 0.943 .7108011 1.443723

sp75\_704\_ss | 1.124308 1.403211 0.09 0.925 .0973933 12.97901

sp75\_705\_1\_ss | 1 (omitted)

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

sp75\_705\_ss | 3.613913 4.445052 1.04 0.296 .3243501 40.26626

sp75\_706\_ss | .7516131 .2533844 -0.85 0.397 .3881831 1.455298

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

sp75\_800\_3\_ss | .170129 .1779302 -1.69 0.090 .0219051 1.32133

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

sp75\_800\_ss | .8513197 .277427 -0.49 0.621 .4494736 1.612431

sp75\_801\_ss | .4057797 .3878772 -0.94 0.345 .0623222 2.642031

sp75\_802\_ss | .4665465 .3004323 -1.18 0.236 .1320578 1.64826

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

sp75\_803\_ss | 1.18916 .3987637 0.52 0.605 .6163178 2.294434

sp75\_804\_ss | .768458 .2166015 -0.93 0.350 .4422787 1.335193

sp75\_805\_ss | .6140843 .4204678 -0.71 0.476 .1604739 2.349912

sp75\_806\_ss | .5844353 .5446959 -0.58 0.564 .0940618 3.631278

sp75\_807\_ss | .9943468 .0924641 -0.06 0.951 .8286761 1.193139

sp75\_808\_ss | 1.575192 .612486 1.17 0.243 .7351205 3.375269

sp75\_809\_ss | 1.11676 .2439449 0.51 0.613 .7278188 1.713547

sp75\_810\_ss | 1.344963 .4296141 0.93 0.354 .7191436 2.515388

sp75\_811\_ss | 1.049828 .662808 0.08 0.939 .3045877 3.618458

sp75\_812\_ss | .0993311 .0555047 -4.13 0.000 .0332236 .2969775

sp75\_814\_ss | 1 (omitted)

sp75\_815\_ss | 3.314626 3.829762 1.04 0.300 .3443063 31.90979

sp75\_816\_ss | .8088569 .2566113 -0.67 0.504 .4343366 1.506319

sp75\_818\_ss | 1 (omitted)

sp75\_819\_ss | 1 (omitted)

sp75\_820\_ss | 2.239429 2.200965 0.82 0.412 .326254 15.37159

sp75\_821\_ss | .0119049 .0144707 -3.65 0.000 .0010992 .128938

sp75\_825\_ss | .0604171 .0545731 -3.11 0.002 .0102871 .3548347

sp75\_827\_ss | 1 (omitted)

sp75\_831\_ss | 1 (omitted)

sp75\_900\_2\_ss | .5379609 .4350992 -0.77 0.443 .1102312 2.625409

sp75\_900\_3\_ss | .4108797 .2227258 -1.64 0.101 .1420049 1.188847

sp75\_900\_4\_ss | 2.049656 1.447139 1.02 0.309 .5136872 8.178302

sp75\_900\_ss | .9681156 .0740977 -0.42 0.672 .8332549 1.124803

sp75\_901\_ss | .7247309 .3019389 -0.77 0.440 .320293 1.639858

sp75\_902\_1\_ss | 1 (omitted)

sp75\_902\_2\_ss | 1.325604 .4487302 0.83 0.405 .6827686 2.573677

sp75\_902\_4\_ss | 1.284471 .5224926 0.62 0.538 .578729 2.850842

sp75\_902\_ss | 1.125587 .1109641 1.20 0.230 .9278219 1.365505

sp75\_903\_ss | 1.554901 .2799237 2.45 0.014 1.092607 2.212798

sp75\_904\_ss | 1.122955 .0663875 1.96 0.050 1.000093 1.26091

sp75\_905\_ss | .1729108 .2252499 -1.35 0.178 .0134576 2.221658

sp75\_907\_ss | 1.564545 .6894565 1.02 0.310 .6596059 3.711006

sp77\_103\_ss | 1 (omitted)

sp77\_1103\_ss | .8609969 .2477854 -0.52 0.603 .4898185 1.51345

sp77\_1104\_ss | 1.070236 .061291 1.19 0.236 .9566041 1.197365

sp77\_1106\_ss | 1 (omitted)

sp77\_1111\_ss | .685936 .6101893 -0.42 0.672 .1199717 3.921827

sp77\_1112\_ss | 1.414636 1.159374 0.42 0.672 .2838161 7.05103

sp77\_1403\_ss | .2450171 .4362312 -0.79 0.430 .0074767 8.029435

sp77\_1433\_ss | 1 (omitted)

sp77\_1434\_ss | 1 (omitted)

sp77\_1437\_ss | .0507332 .0455824 -3.32 0.001 .0087199 .2951709

sp77\_1438\_ss | 1 (omitted)

sp77\_1605\_ss | .9803933 .0586252 -0.33 0.741 .871968 1.102301

sp77\_1606\_ss | 1.12647 .0732713 1.83 0.067 .9916377 1.279634

sp77\_1710\_ss | .870883 .080813 -1.49 0.136 .7260611 1.044591

sp77\_1802\_ss | 1 (omitted)

sp77\_1906\_ss | 1 (omitted)

sp77\_1915\_ss | 1 (omitted)

sp77\_1916\_ss | 1 (omitted)

sp77\_200\_ss | .811596 .0846892 -2.00 0.045 .6614818 .9957767

sp77\_202\_ss | .6281067 .0806499 -3.62 0.000 .4883573 .807847

sp77\_203\_ss | .1235636 .1091988 -2.37 0.018 .0218598 .6984508

sp77\_204\_ss | 1.056643 .2188714 0.27 0.790 .7040637 1.585787

sp77\_205\_ss | 1.077343 .065535 1.22 0.221 .9562581 1.21376

sp77\_206\_ss | 1.316875 .5574036 0.65 0.515 .5744469 3.018833

sp77\_207\_ss | 1.22204 .2995808 0.82 0.413 .755814 1.975859

sp77\_208\_ss | 1.211971 .1636661 1.42 0.155 .9301328 1.579209

sp77\_210\_ss | 2.120639 .9893584 1.61 0.107 .8498629 5.291569

sp77\_216\_ss | 1 (omitted)

sp77\_315\_ss | 1 (omitted)

sp77\_400\_ss | 1.104857 .058998 1.87 0.062 .9950681 1.226758

sp77\_401\_ss | 1.004405 .2916786 0.02 0.988 .5684871 1.774587

sp77\_402\_ss | 1.027427 .2990567 0.09 0.926 .5807495 1.817662

sp77\_403\_1\_ss | 2.061814 1.653023 0.90 0.367 .4283649 9.923965

sp77\_403\_ss | 2.126714 1.799985 0.89 0.373 .4048355 11.17223

sp77\_404\_ss | 1.028015 .0343449 0.83 0.408 .9628572 1.097583

sp77\_405\_ss | 1.713381 .7114016 1.30 0.195 .7593327 3.866123

sp77\_408\_ss | .7997953 .4709872 -0.38 0.704 .252185 2.53652

sp77\_409\_ss | 1 (omitted)

sp77\_410\_ss | .9181297 .0593416 -1.32 0.186 .8088876 1.042125

sp77\_411\_ss | 1 (omitted)

sp77\_412\_ss | 1 (omitted)

sp77\_413\_ss | 1 (omitted)

sp77\_500\_ss | 6.78181 4.82912 2.69 0.007 1.679697 27.38169

sp77\_501\_ss | 1.094088 .514145 0.19 0.848 .4355592 2.748259

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

sp77\_502\_2\_ss | .8259928 .378909 -0.42 0.677 .3361268 2.029782

sp77\_502\_ss | .981753 .075703 -0.24 0.811 .8440459 1.141927

sp77\_503\_1\_ss | .0283153 .0484328 -2.08 0.037 .000991 .8090713

sp77\_503\_ss | .4516903 .3289155 -1.09 0.275 .1083941 1.882243

sp77\_504\_ss | .7976295 .1442867 -1.25 0.211 .5595303 1.137048

sp77\_505\_ss | .9818345 .1507435 -0.12 0.905 .7266934 1.326555

sp77\_506\_1\_ss | .7435192 .3892389 -0.57 0.571 .2664898 2.074454

sp77\_506\_ss | .9103963 .2208075 -0.39 0.699 .5659526 1.464472

sp77\_507\_ss | .7076799 .4130393 -0.59 0.554 .2254399 2.221482

sp77\_508\_1\_ss | 1.402177 1.019994 0.46 0.642 .3369828 5.834421

sp77\_508\_ss | .5272431 .4670307 -0.72 0.470 .0929006 2.992287

sp77\_509\_ss | .6681112 .1588769 -1.70 0.090 .4192114 1.064791

sp77\_510\_ss | .5669151 .5990459 -0.54 0.591 .0714617 4.497412

sp77\_511\_ss | .4584653 .4782877 -0.75 0.455 .0593338 3.542508

sp77\_512\_ss | .9819452 .1460282 -0.12 0.902 .7336728 1.314232

sp77\_513\_ss | .8863885 .1995836 -0.54 0.592 .5701163 1.378113

sp77\_514\_ss | 1 (omitted)

sp77\_515\_ss | 1 (omitted)

sp77\_516\_ss | .8180795 .0921429 -1.78 0.075 .6560273 1.020162

sp77\_600\_ss | .808873 .4782611 -0.36 0.720 .2538585 2.577324

sp77\_601\_ss | .323789 .2903266 -1.26 0.209 .0558508 1.877133

sp77\_602\_ss | 1.761702 2.238996 0.45 0.656 .1459207 21.26905

sp77\_603\_ss | 1 (omitted)

sp77\_604\_ss | 1.514383 .640424 0.98 0.326 .6611002 3.468998

sp77\_605\_ss | 1 (omitted)

sp77\_606\_ss | 1 (omitted)

sp77\_700\_1\_ss | 3.223635 3.522488 1.07 0.284 .3786446 27.44478

sp77\_700\_ss | .7577566 .3751319 -0.56 0.575 .2871689 1.999503

sp77\_701\_1\_ss | 1.107422 .6472518 0.17 0.861 .3522197 3.48187

sp77\_701\_2\_ss | .6283396 .3299936 -0.88 0.376 .2244696 1.75886

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

sp77\_701\_4\_ss | 1.525932 .9711576 0.66 0.507 .4383286 5.312149

sp77\_701\_ss | .8763301 .104796 -1.10 0.270 .693229 1.107793

sp77\_704\_1\_ss | 2.753436 1.863066 1.50 0.134 .7310108 10.37113

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

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

sp77\_704\_ss | 2.745748 2.707666 1.02 0.306 .3974335 18.96954

sp77\_705\_ss | 1.614488 .8744654 0.88 0.376 .5584613 4.667416

sp77\_800\_1\_ss | 1 (omitted)

sp77\_800\_2\_ss | 1.024827 .8253646 0.03 0.976 .2114066 4.96801

sp77\_800\_ss | .4981447 .4099446 -0.85 0.397 .0992808 2.499457

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

sp77\_802\_ss | .1008264 .0702103 -3.29 0.001 .0257538 .3947359

sp77\_803\_ss | 3.979491 4.792491 1.15 0.251 .3756017 42.16261

sp77\_804\_ss | 1 (omitted)

sp77\_805\_ss | 1 (omitted)

sp77\_807\_1\_ss | .0283156 .0318987 -3.16 0.002 .0031125 .2575973

sp77\_807\_2\_ss | .8946871 .9700771 -0.10 0.918 .1068425 7.492011

sp77\_807\_3\_ss | 1 (omitted)

sp77\_807\_ss | .8799891 .5598239 -0.20 0.841 .2529107 3.061874

sp77\_808\_ss | .1656911 .1779292 -1.67 0.094 .0201942 1.359475

sp77\_809\_ss | .6884068 .1972809 -1.30 0.193 .3925646 1.2072

sp77\_810\_ss | 1 (omitted)

sp77\_900\_1\_ss | 3.274617 4.48023 0.87 0.386 .2241677 47.83526

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

sp77\_900\_ss | .7996276 .4371971 -0.41 0.683 .2738373 2.334979

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

sp77\_901\_ss | 2.7064 2.301203 1.17 0.242 .5112466 14.32694

sp77\_902\_3\_ss | 1 (omitted)

sp77\_902\_ss | 1.733785 1.046758 0.91 0.362 .5309937 5.661105

sp77\_903\_ss | 1 (omitted)

sp77\_904\_ss | 1.110122 .2033588 0.57 0.568 .7752515 1.589641

mine\_time | 1.000983 .0147504 0.07 0.947 .972486 1.030315

onsite\_insp\_hours | 1.00101 .0001893 5.34 0.000 1.000639 1.001381

|

state |

1 | 1.234439 .4643627 0.56 0.576 .5905692 2.580292

2 | 2.48331 .4078737 5.54 0.000 1.799801 3.426395

3 | .7714413 .2511509 -0.80 0.425 .4075541 1.460228

4 | 2.317261 .7838017 2.48 0.013 1.194154 4.496655

5 | .848711 .2483761 -0.56 0.575 .4782498 1.506138

6 | .6441389 .0644136 -4.40 0.000 .5294925 .7836087

7 | .9653226 .3001327 -0.11 0.910 .5248336 1.775511

8 | 1.386183 .2250014 2.01 0.044 1.008454 1.905396

9 | 2.899282 .7032173 4.39 0.000 1.802323 4.663891

10 | .5914391 .232718 -1.33 0.182 .2735151 1.278906

11 | .3781928 .1686395 -2.18 0.029 .1578174 .9062991

12 | .9518364 .1670015 -0.28 0.778 .6748658 1.342478

13 | 1.902009 .734369 1.67 0.096 .8924056 4.053806

14 | .8073008 .2541396 -0.68 0.497 .4355878 1.496219

15 | .5150892 .0598322 -5.71 0.000 .4102116 .6467807

17 | 1 (empty)

|

time |

2000 | .9623824 .1419994 -0.26 0.795 .7206975 1.285116

2002 | .7123004 .1122838 -2.15 0.031 .5229782 .9701586

2003 | .7330783 .1283577 -1.77 0.076 .5201278 1.033215

2004 | .46649 .080536 -4.42 0.000 .3325743 .6543286

2005 | .4831888 .0775189 -4.53 0.000 .352823 .6617239

2006 | .5118255 .085225 -4.02 0.000 .3693064 .7093442

2007 | .4960417 .0893548 -3.89 0.000 .3484868 .7060736

2008 | .3774947 .0663386 -5.54 0.000 .2675014 .532716

2009 | .194316 .0370646 -8.59 0.000 .1337049 .2824035

2010 | .2893432 .0574831 -6.24 0.000 .196023 .42709

2011 | .3542079 .0664199 -5.53 0.000 .2452695 .511532

2012 | .3192476 .0648615 -5.62 0.000 .2143823 .4754078

2013 | .2276037 .0497031 -6.78 0.000 .1483534 .3491895

2014 | .174721 .0403399 -7.56 0.000 .1111266 .2747085

2015 | .2321347 .0535687 -6.33 0.000 .1476768 .3648952

|

\_cons | .0000231 3.15e-06 -78.18 0.000 .0000177 .0000302

lnhours | 1 (offset)

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

(est1 stored)

**. lfit**

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

number of observations = 5970

number of covariate patterns = 5955

Pearson chi2(5713) = 5470.14

Prob > chi2 = 0.9892

**. linktest**

Iteration 0: log likelihood = -4123.9989

Iteration 1: log likelihood = -2722.0081

Iteration 2: log likelihood = -2716.8653

Iteration 3: log likelihood = -2716.3097

Iteration 4: log likelihood = -2716.3085

Iteration 5: log likelihood = -2716.3085

Logistic regression Number of obs = 5,970

LR chi2(2) = 2815.38

Prob > chi2 = 0.0000

Log likelihood = -2716.3085 Pseudo R2 = 0.3413

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

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

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

\_hat | 1.101737 .0310161 35.52 0.000 1.040946 1.162527

\_hatsq | -.0209303 .0153044 -1.37 0.171 -.0509264 .0090659

\_cons | .0237306 .0381045 0.62 0.533 -.0509529 .0984141

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

**. estat classification**

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 2522 682 | 3204

- | 668 2098 | 2766

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

Total | 3190 2780 | 5970

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

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

Sensitivity Pr( +| D) 79.06%

Specificity Pr( -|~D) 75.47%

Positive predictive value Pr( D| +) 78.71%

Negative predictive value Pr(~D| -) 75.85%

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

False + rate for true ~D Pr( +|~D) 24.53%

False - rate for true D Pr( -| D) 20.94%

False + rate for classified + Pr(~D| +) 21.29%

False - rate for classified - Pr( D| -) 24.15%

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

Correctly classified 77.39%

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

**. summ MR\_indicator spbssv1\_yhat**

Variable | Obs Mean Std. Dev. Min Max

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

MR\_indicator | 6,253 .5525348 .4972722 0 1

spbssv1\_yhat | 5,970 .5343384 .3015371 .0003812 .9999985