.

. // Model B.SSV.4

.

. eststo clear

. eststo: logit dv\_indicator `ss\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

note: 8.state != 0 predicts failure perfectly

8.state dropped and 1 obs not used

Iteration 0: log pseudolikelihood = -9648.0546

Iteration 1: log pseudolikelihood = -9153.9751

Iteration 2: log pseudolikelihood = -9116.8326

Iteration 3: log pseudolikelihood = -9116.6003

Iteration 4: log pseudolikelihood = -9116.6002

Logistic regression Number of obs = 19,290

Wald chi2(81) = .

Log pseudolikelihood = -9116.6002 Prob > chi2 = .

(Std. Err. adjusted for 1,287 clusters in mineid)

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

| Robust

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

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

p48\_ss\_c\_lag\_all | 1.0459 .0430423 1.09 0.275 .9648515 1.133757

p75\_ss\_c\_lag\_all | 1.001078 .0003707 2.91 0.004 1.000352 1.001805

mine\_time | .9978231 .0038299 -0.57 0.570 .9903449 1.005358

onsite\_insp\_hours | 1.003783 .0004674 8.11 0.000 1.002868 1.0047

|

state |

AL | 1.128455 .4070826 0.34 0.738 .5564405 2.288492

CO | 1.582986 .2647636 2.75 0.006 1.140535 2.197078

IL | 4.880328 1.434624 5.39 0.000 2.743022 8.682977

IN | 1.894817 .6625797 1.83 0.068 .9548147 3.760239

MD | 2.11097 .6293016 2.51 0.012 1.176875 3.786464

MT | 1 (empty)

NM | 2.222179 .1589596 11.16 0.000 1.931479 2.556632

OH | 1.294495 .2834378 1.18 0.238 .8427994 1.988274

OK | 3.599925 1.321123 3.49 0.000 1.753534 7.390481

PA | 1.819074 .2228996 4.88 0.000 1.430701 2.312875

TN | 1.746714 .3676611 2.65 0.008 1.156258 2.638694

UT | .4465365 .1345844 -2.67 0.007 .2473478 .8061316

VA | 1.132472 .0984965 1.43 0.153 .9549798 1.342952

WV | 1.716259 .1398589 6.63 0.000 1.462911 2.013482

WY | 2.678135 .6499242 4.06 0.000 1.664426 4.309236

|

time |

2000.25 | 1.478406 .1965362 2.94 0.003 1.139296 1.918451

2000.5 | 1.569374 .2229283 3.17 0.002 1.187993 2.073189

2000.75 | .7767393 .1037255 -1.89 0.058 .5978691 1.009124

2001 | .9654611 .1344152 -0.25 0.801 .7348983 1.268359

2001.25 | .965871 .1344225 -0.25 0.803 .7352845 1.26877

2001.5 | 1.216092 .1852416 1.28 0.199 .9022084 1.639177

2001.75 | .967218 .1454258 -0.22 0.825 .7203477 1.298693

2002 | 1.069043 .1590576 0.45 0.654 .7986363 1.431005

2002.25 | .8875139 .1369606 -0.77 0.439 .6558707 1.20097

2002.5 | 1.278181 .208447 1.51 0.132 .9284905 1.759572

2002.75 | .804171 .1265114 -1.39 0.166 .5907968 1.094608

2003 | .9302697 .164344 -0.41 0.682 .6580112 1.315178

2003.25 | .9518572 .1652282 -0.28 0.776 .6773544 1.337604

2003.5 | 1.425078 .2416172 2.09 0.037 1.022163 1.986813

2003.75 | .7437316 .1286015 -1.71 0.087 .529946 1.04376

2004 | .769515 .1271596 -1.59 0.113 .5566204 1.063837

2004.25 | .7082939 .1164234 -2.10 0.036 .513216 .9775226

2004.5 | .7388146 .1247378 -1.79 0.073 .5306679 1.028604

2004.75 | .584787 .0962368 -3.26 0.001 .4235627 .8073795

2005 | .7131208 .1219225 -1.98 0.048 .5100736 .9969959

2005.25 | .620991 .1035535 -2.86 0.004 .4478608 .8610485

2005.5 | .7248096 .1270931 -1.84 0.066 .5140062 1.022067

2005.75 | .5385963 .0931148 -3.58 0.000 .3837992 .7558276

2006 | .6737585 .124339 -2.14 0.032 .4692659 .9673631

2006.25 | .5556365 .0938284 -3.48 0.001 .3990721 .7736244

2006.5 | .6750885 .1167381 -2.27 0.023 .4810262 .9474422

2006.75 | .5664064 .1011112 -3.18 0.001 .3991878 .8036725

2007 | .5282832 .0924965 -3.64 0.000 .3748269 .7445652

2007.25 | .4552047 .0805812 -4.45 0.000 .321755 .6440033

2007.5 | .577971 .103861 -3.05 0.002 .4063925 .8219898

2007.75 | .4647866 .0806644 -4.41 0.000 .3307701 .6531019

2008 | .4557601 .0824168 -4.35 0.000 .3197499 .6496244

2008.25 | .4651193 .0865509 -4.11 0.000 .3229758 .669821

2008.5 | .4398557 .0779449 -4.63 0.000 .310794 .6225123

2008.75 | .4491822 .0791188 -4.54 0.000 .3180476 .634385

2009 | .5130896 .0931701 -3.67 0.000 .3594402 .7324193

2009.25 | .5228461 .1020698 -3.32 0.001 .3566176 .7665581

2009.5 | .4095235 .0805243 -4.54 0.000 .2785529 .6020743

2009.75 | .4512676 .0851535 -4.22 0.000 .3117552 .6532126

2010 | .4336362 .0894826 -4.05 0.000 .2893854 .6497923

2010.25 | .4511092 .0880576 -4.08 0.000 .3076983 .6613606

2010.5 | .6331122 .1307119 -2.21 0.027 .4224178 .9488973

2010.75 | .3825116 .0788625 -4.66 0.000 .2553595 .5729769

2011 | .4388391 .0897779 -4.03 0.000 .2938773 .6553065

2011.25 | .4139946 .0840983 -4.34 0.000 .2780244 .6164623

2011.5 | .5482384 .1072194 -3.07 0.002 .3736795 .8043398

2011.75 | .4433348 .0903938 -3.99 0.000 .297287 .6611311

2012 | .3482565 .0693851 -5.29 0.000 .2356728 .5146227

2012.25 | .475631 .0986652 -3.58 0.000 .3167352 .7142396

2012.5 | .4301126 .0935331 -3.88 0.000 .2808526 .6586975

2012.75 | .1772535 .039537 -7.76 0.000 .1144806 .2744468

2013 | .3763181 .0874206 -4.21 0.000 .2386804 .593326

2013.25 | .3655464 .0867199 -4.24 0.000 .2296195 .5819373

2013.5 | .2914603 .0706515 -5.09 0.000 .1812357 .4687219

2013.75 | .234828 .0565862 -6.01 0.000 .1464323 .376585

2014 | .3026444 .0782449 -4.62 0.000 .182333 .5023426

2014.25 | .2548114 .0646308 -5.39 0.000 .1549952 .4189085

2014.5 | .2830245 .0704729 -5.07 0.000 .1737302 .4610762

2014.75 | .415999 .1117175 -3.27 0.001 .2457538 .7041811

2015 | .2974172 .0735812 -4.90 0.000 .183138 .4830075

2015.25 | .1792321 .0456632 -6.75 0.000 .1087813 .2953096

2015.5 | .3385736 .089946 -4.08 0.000 .2011507 .5698817

2015.75 | .2030072 .0545337 -5.94 0.000 .1199095 .3436919

2016 | .1246478 .0401077 -6.47 0.000 .066343 .2341933

|

\_cons | .0000758 8.36e-06 -85.96 0.000 .000061 .0000941

lnhours | 1 (offset)

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.SSV.4.csv"', replace plain wide p eform

(note: file C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.P.B.SSV.4.csv not found)

(output written to C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.P.B.SSV.4.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 19290

number of covariate patterns = 19274

Pearson chi2(19191) = 72741.71

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -12685.832

Iteration 1: log likelihood = -9394.5511

Iteration 2: log likelihood = -8968.0091

Iteration 3: log likelihood = -8875.1171

Iteration 4: log likelihood = -8874.6974

Iteration 5: log likelihood = -8874.6974

Logistic regression Number of obs = 19,290

LR chi2(2) = 7622.27

Prob > chi2 = 0.0000

Log likelihood = -8874.6974 Pseudo R2 = 0.3004

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

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

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

\_hat | .9674302 .0167616 57.72 0.000 .934578 1.000282

\_hatsq | .134783 .0052875 25.49 0.000 .1244198 .1451463

\_cons | -.1657564 .0201668 -8.22 0.000 -.2052826 -.1262301

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

Note: 0 failures and 65 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 10485 2602 | 13087

- | 1715 4488 | 6203

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

Total | 12200 7090 | 19290

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 85.94%

Specificity Pr( -|~D) 63.30%

Positive predictive value Pr( D| +) 80.12%

Negative predictive value Pr(~D| -) 72.35%

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

False + rate for true ~D Pr( +|~D) 36.70%

False - rate for true D Pr( -| D) 14.06%

False + rate for classified + Pr(~D| +) 19.88%

False - rate for classified - Pr( D| -) 27.65%

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

Correctly classified 77.62%

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

.

. pause "next"

.

. predict bssv4\_yhat

(option pr assumed; Pr(dv\_indicator))

(10999 missing values generated)

. gen bssv4\_res = dv\_indicator - bssv4\_yhat

(10,999 missing values generated)

.

. summ dv\_indicator bssv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv\_indicator | 30,289 .5522797 .4972675 0 1

bssv4\_yhat | 19,290 .632452 .2780465 .0001636 .9999903

. /\*

> pause "next"

>

> scatter dv\_indicator bssv4\_yhat

>

> pause "next"

>

> scatter bssv4\_res dv\_indicator

>

> pause "next"

>

> scatter bssv4\_res bssv4\_yhat

> \*/

. pause "complete: B.SSV.4"