. // Model B.SSV.2

.

. eststo clear

. eststo: logit dv\_indicator `ss\_lag\_1\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

Iteration 0: log pseudolikelihood = -13384.324

Iteration 1: log pseudolikelihood = -12718.386

Iteration 2: log pseudolikelihood = -12679.257

Iteration 3: log pseudolikelihood = -12679.105

Iteration 4: log pseudolikelihood = -12679.105

Logistic regression Number of obs = 26,110

Wald chi2(80) = .

Log pseudolikelihood = -12679.105 Prob > chi2 = .

(Std. Err. adjusted for 1,475 clusters in mineid)

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

| Robust

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

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

p48\_ss\_1lag | 1.133843 .1230092 1.16 0.247 .9166579 1.402487

p75\_ss\_1lag | 1.027463 .0040968 6.79 0.000 1.019465 1.035524

mine\_time | 1.001759 .0023977 0.73 0.463 .9970711 1.00647

onsite\_insp\_hours | 1.003694 .00044 8.41 0.000 1.002832 1.004556

|

state |

AL | 1.208725 .4189611 0.55 0.584 .6127581 2.384328

AR | 2.249855 .1550587 11.77 0.000 1.965578 2.575247

CO | 1.78351 .2934328 3.52 0.000 1.291907 2.46218

IL | 3.733317 1.205344 4.08 0.000 1.982781 7.029345

IN | 1.596138 .3271167 2.28 0.023 1.068127 2.385162

MD | 1.642924 .3579948 2.28 0.023 1.071864 2.518228

MT | .5000746 .0330781 -10.48 0.000 .4392694 .5692967

NM | 2.563006 .1474965 16.35 0.000 2.289625 2.869028

OH | 1.373909 .2763303 1.58 0.114 .9263138 2.037781

OK | 3.809119 1.620529 3.14 0.002 1.654605 8.769093

PA | 1.744507 .1913015 5.07 0.000 1.407118 2.162793

TN | 2.197895 .4477775 3.87 0.000 1.47432 3.276593

UT | .4774227 .1371192 -2.57 0.010 .2719142 .8382513

VA | 1.062322 .078314 0.82 0.412 .9194029 1.227457

WV | 1.717799 .1186329 7.83 0.000 1.500333 1.966787

WY | 2.388496 .4091481 5.08 0.000 1.707317 3.341449

|

time |

2000.25 | 1.376491 .204974 2.15 0.032 1.028065 1.843004

2000.5 | 1.348725 .2058898 1.96 0.050 .9999607 1.819129

2000.75 | .7126732 .0978187 -2.47 0.014 .5445752 .9326592

2001 | .7915622 .1136761 -1.63 0.104 .597371 1.04888

2001.25 | .947946 .1309028 -0.39 0.699 .7231698 1.242587

2001.75 | .8565897 .1170948 -1.13 0.257 .6552613 1.119776

2002 | .8487158 .1219503 -1.14 0.254 .6404052 1.124785

2002.25 | .6928989 .099218 -2.56 0.010 .5233402 .9173934

2002.5 | 1.065113 .1612744 0.42 0.677 .7916087 1.433113

2002.75 | .6992645 .103281 -2.42 0.015 .5235033 .9340359

2003 | .7395975 .1139288 -1.96 0.050 .5468585 1.000267

2003.25 | .7879165 .1248164 -1.50 0.132 .5776151 1.074785

2003.5 | 1.262354 .2084035 1.41 0.158 .9133881 1.744645

2003.75 | .643374 .0999468 -2.84 0.005 .4744944 .8723603

2004 | .6709703 .1013091 -2.64 0.008 .4990927 .902039

2004.25 | .5782437 .0879824 -3.60 0.000 .4291378 .7791572

2004.5 | .7058179 .1074109 -2.29 0.022 .5237901 .951104

2004.75 | .5212638 .077646 -4.37 0.000 .3892825 .6979916

2005 | .5700259 .0869413 -3.69 0.000 .4227347 .7686369

2005.25 | .5796352 .0864985 -3.65 0.000 .4326439 .7765668

2005.5 | .6444446 .0960564 -2.95 0.003 .4811843 .8630974

2005.75 | .4404429 .0660783 -5.47 0.000 .3282362 .5910074

2006 | .6040919 .0930769 -3.27 0.001 .4466343 .81706

2006.25 | .5354819 .0822234 -4.07 0.000 .3963169 .7235143

2006.5 | .5889669 .088883 -3.51 0.000 .4381604 .791678

2006.75 | .5091956 .0809154 -4.25 0.000 .3729251 .6952606

2007 | .428074 .0656834 -5.53 0.000 .3168918 .5782648

2007.25 | .4925514 .0763068 -4.57 0.000 .3635651 .6672997

2007.5 | .5567567 .0878031 -3.71 0.000 .4087211 .7584097

2007.75 | .4061642 .0634195 -5.77 0.000 .2990838 .5515822

2008 | .4120597 .0659643 -5.54 0.000 .3010899 .5639285

2008.25 | .4155209 .0665433 -5.48 0.000 .3035832 .5687324

2008.5 | .3885642 .0606608 -6.06 0.000 .2861391 .5276529

2008.75 | .3592764 .0559843 -6.57 0.000 .2647219 .4876041

2009 | .4253124 .0689468 -5.27 0.000 .309543 .5843798

2009.25 | .3847146 .0635763 -5.78 0.000 .2782741 .5318689

2009.5 | .3882701 .0649515 -5.66 0.000 .2797314 .5389229

2009.75 | .3279296 .0549617 -6.65 0.000 .2361117 .4554533

2010 | .3789453 .0647971 -5.67 0.000 .2710359 .5298175

2010.25 | .3366925 .0569725 -6.43 0.000 .2416572 .4691018

2010.5 | .4920894 .0841498 -4.15 0.000 .3519526 .6880243

2010.75 | .2952933 .0500677 -7.19 0.000 .2118021 .4116962

2011 | .3457117 .0590998 -6.21 0.000 .2472864 .4833123

2011.25 | .4025903 .0700208 -5.23 0.000 .2862975 .5661207

2011.5 | .4813603 .0795049 -4.43 0.000 .3482409 .6653662

2011.75 | .3252995 .054663 -6.68 0.000 .2340175 .4521874

2012 | .3429604 .0574577 -6.39 0.000 .2469667 .4762659

2012.25 | .3838374 .0653711 -5.62 0.000 .2749032 .5359382

2012.5 | .3378247 .0608166 -6.03 0.000 .2373858 .4807599

2012.75 | .1771634 .0324967 -9.44 0.000 .1236631 .2538096

2013 | .2976796 .0550499 -6.55 0.000 .2071745 .4277221

2013.25 | .3050174 .0558205 -6.49 0.000 .2130828 .4366173

2013.5 | .3104483 .0591228 -6.14 0.000 .2137389 .4509153

2013.75 | .2104273 .041431 -7.92 0.000 .143057 .3095245

2014 | .2368254 .0495657 -6.88 0.000 .157137 .3569259

2014.25 | .2304815 .0452173 -7.48 0.000 .1569069 .3385558

2014.5 | .2659502 .054535 -6.46 0.000 .1779326 .3975075

2014.75 | .2946235 .059773 -6.02 0.000 .1979594 .4384889

2015 | .238828 .0481801 -7.10 0.000 .1608302 .3546525

2015.25 | .1995424 .0418214 -7.69 0.000 .1323228 .3009094

2015.5 | .3383282 .0699338 -5.24 0.000 .2256271 .5073236

2015.75 | .2131212 .0459492 -7.17 0.000 .1396711 .3251971

2016 | .1407429 .0337774 -8.17 0.000 .0879314 .225273

|

\_cons | .0000797 8.96e-06 -83.90 0.000 .0000639 .0000994

lnhours | 1 (offset)

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.SSV.2.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.2.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.2.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 26110

number of covariate patterns = 26078

Pearson chi2(25994) = 76674.22

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -17544.81

Iteration 1: log likelihood = -12958.339

Iteration 2: log likelihood = -12480.474

Iteration 3: log likelihood = -12427.997

Iteration 4: log likelihood = -12427.891

Iteration 5: log likelihood = -12427.891

Logistic regression Number of obs = 26,110

LR chi2(2) = 10233.84

Prob > chi2 = 0.0000

Log likelihood = -12427.891 Pseudo R2 = 0.2916

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

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

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

\_hat | .988654 .0142064 69.59 0.000 .96081 1.016498

\_hatsq | .1279586 .0048064 26.62 0.000 .1185382 .137379

\_cons | -.160912 .0170858 -9.42 0.000 -.1943995 -.1274244

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

Note: 0 failures and 25 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 13252 3583 | 16835

- | 2481 6794 | 9275

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

Total | 15733 10377 | 26110

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 84.23%

Specificity Pr( -|~D) 65.47%

Positive predictive value Pr( D| +) 78.72%

Negative predictive value Pr(~D| -) 73.25%

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

False + rate for true ~D Pr( +|~D) 34.53%

False - rate for true D Pr( -| D) 15.77%

False + rate for classified + Pr(~D| +) 21.28%

False - rate for classified - Pr( D| -) 26.75%

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

Correctly classified 76.78%

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

.

. pause "next"

.

. predict bssv2\_yhat

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

(4179 missing values generated)

. gen bssv2\_res = dv\_indicator - bssv2\_yhat

(4,179 missing values generated)

.

. summ dv\_indicator bssv2\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bssv2\_yhat | 26,110 .6025661 .2812794 .0001885 .9999943

. /\*

> pause "next"

>

> scatter dv\_indicator bssv2\_yhat

>

> pause "next"

>

> scatter bssv2\_res dv\_indicator

>

> pause "next"

>

> scatter bssv2\_res bssv2\_yhat

> \*/

. pause "complete: B.SSV.2"