. // Model B.PP.3

.

. eststo clear

. eststo: logit dv\_indicator `pp\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

Iteration 0: log pseudolikelihood = -11232.754

Iteration 1: log pseudolikelihood = -10676.236

Iteration 2: log pseudolikelihood = -10638.679

Iteration 3: log pseudolikelihood = -10638.363

Iteration 4: log pseudolikelihood = -10638.363

Logistic regression Number of obs = 22,446

Wald chi2(79) = .

Log pseudolikelihood = -10638.363 Prob > chi2 = .

(Std. Err. adjusted for 1,293 clusters in mineid)

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

| Robust

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

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

p48\_pp\_c\_4lag | 1.000816 .0005288 1.54 0.123 .9997799 1.001853

p75\_pp\_c\_4lag | 1.000047 .00001 4.67 0.000 1.000027 1.000066

mine\_time | 1.000283 .0026621 0.11 0.915 .9950784 1.005514

onsite\_insp\_hours | 1.003131 .0004821 6.50 0.000 1.002186 1.004076

|

state |

AL | 1.205619 .4612725 0.49 0.625 .5695587 2.552006

AR | 2.131589 .1622999 9.94 0.000 1.836085 2.474652

CO | 1.700569 .3430616 2.63 0.008 1.145193 2.525283

IL | 3.802475 1.099983 4.62 0.000 2.1569 6.703515

IN | 1.436304 .2650773 1.96 0.050 1.000352 2.062244

MD | 1.823643 .4936881 2.22 0.026 1.07277 3.100082

MT | .5991126 .0409592 -7.49 0.000 .5239802 .6850182

NM | 3.718187 .2372142 20.58 0.000 3.281149 4.213436

OH | 1.405658 .3237143 1.48 0.139 .8950627 2.207528

OK | 3.549498 1.484287 3.03 0.002 1.563945 8.055868

PA | 1.815762 .213574 5.07 0.000 1.441911 2.286541

TN | 2.032415 .5377976 2.68 0.007 1.209973 3.413885

UT | .4972833 .1591868 -2.18 0.029 .265536 .9312889

VA | 1.035003 .0815979 0.44 0.663 .886818 1.20795

WV | 1.696511 .1301684 6.89 0.000 1.459643 1.971819

WY | 4.782762 .29358 25.50 0.000 4.240622 5.394212

|

time |

2000.75 | 2.072121 .3562906 4.24 0.000 1.479297 2.902518

2001 | 2.510333 .4452964 5.19 0.000 1.77313 3.554038

2001.25 | 2.591365 .4345679 5.68 0.000 1.865449 3.599762

2001.5 | 3.026778 .5126233 6.54 0.000 2.171795 4.218348

2001.75 | 2.459857 .4158359 5.32 0.000 1.7661 3.426135

2002 | 2.625284 .4453018 5.69 0.000 1.882761 3.660644

2002.25 | 2.260761 .3824027 4.82 0.000 1.62284 3.149441

2002.5 | 3.123817 .5297081 6.72 0.000 2.240509 4.355365

2002.75 | 2.143479 .3624071 4.51 0.000 1.538873 2.985626

2003 | 2.298327 .4078764 4.69 0.000 1.623125 3.254406

2003.25 | 2.4627 .4445616 4.99 0.000 1.728838 3.508074

2003.5 | 3.770632 .6967793 7.18 0.000 2.624942 5.416374

2003.75 | 1.983417 .3456336 3.93 0.000 1.409556 2.79091

2004 | 2.070541 .3582095 4.21 0.000 1.475107 2.906325

2004.25 | 1.861436 .3187747 3.63 0.000 1.330694 2.603863

2004.5 | 2.150782 .362166 4.55 0.000 1.546195 2.991773

2004.75 | 1.687782 .2743501 3.22 0.001 1.227306 2.321024

2005 | 1.783316 .3066328 3.36 0.001 1.273117 2.497977

2005.25 | 1.820693 .3060424 3.56 0.000 1.309656 2.53114

2005.5 | 1.999768 .336193 4.12 0.000 1.438398 2.780227

2005.75 | 1.446773 .2376176 2.25 0.025 1.048575 1.996188

2006 | 1.801584 .2959581 3.58 0.000 1.305635 2.485919

2006.25 | 1.642917 .2709233 3.01 0.003 1.189185 2.269771

2006.5 | 1.97772 .3187518 4.23 0.000 1.442034 2.712402

2006.75 | 1.61224 .2708993 2.84 0.004 1.159859 2.241064

2007 | 1.349073 .2097947 1.93 0.054 .9946377 1.82981

2007.25 | 1.322455 .206466 1.79 0.073 .9738416 1.795863

2007.5 | 1.596457 .2508667 2.98 0.003 1.173275 2.172275

2007.75 | 1.254991 .1978841 1.44 0.150 .9213507 1.709448

2008 | 1.13718 .1912891 0.76 0.445 .8177972 1.581295

2008.25 | 1.117792 .1804392 0.69 0.490 .8146224 1.533791

2008.5 | 1.073885 .1646077 0.47 0.642 .7952133 1.450214

2009 | 1.012837 .1741789 0.07 0.941 .7230319 1.418802

2009.25 | .9737426 .1680869 -0.15 0.877 .694241 1.365772

2009.5 | 1.054202 .1789116 0.31 0.756 .7558994 1.470224

2009.75 | .8138198 .1399714 -1.20 0.231 .5809349 1.140064

2010 | 1.009513 .1854683 0.05 0.959 .7042531 1.447089

2010.25 | .9089515 .1556349 -0.56 0.577 .6498215 1.271415

2010.5 | 1.261235 .2255408 1.30 0.194 .8883411 1.790658

2010.75 | .7601422 .1408043 -1.48 0.139 .528717 1.092865

2011 | .8337072 .1389242 -1.09 0.275 .6014148 1.155721

2011.25 | .9889109 .1746175 -0.06 0.950 .6996096 1.397844

2011.5 | 1.309834 .2351675 1.50 0.133 .92128 1.862263

2011.75 | .8043971 .1432405 -1.22 0.222 .567408 1.140369

2012 | .8946329 .1540305 -0.65 0.518 .6383988 1.253712

2012.25 | .9898684 .1741507 -0.06 0.954 .7011693 1.397436

2012.5 | .9492064 .175679 -0.28 0.778 .6604203 1.364272

2012.75 | .4753417 .0869648 -4.07 0.000 .3321061 .6803542

2013 | .7789825 .1437872 -1.35 0.176 .542513 1.118524

2013.25 | .7802609 .1513407 -1.28 0.201 .533506 1.141144

2013.5 | .8156485 .1589695 -1.05 0.296 .5566783 1.195093

2013.75 | .5163233 .10125 -3.37 0.001 .3515626 .7582994

2014 | .6146475 .128626 -2.33 0.020 .4078468 .9263077

2014.25 | .6187388 .1220015 -2.43 0.015 .4204065 .9106371

2014.5 | .6850802 .1462985 -1.77 0.077 .4507832 1.041154

2014.75 | .7952878 .1674525 -1.09 0.277 .5263793 1.201572

2015 | .6184695 .1268327 -2.34 0.019 .4137691 .9244394

2015.25 | .4814941 .1016537 -3.46 0.001 .3183348 .7282792

2015.5 | .9011132 .1908837 -0.49 0.623 .5949336 1.364867

2015.75 | .5561314 .1205265 -2.71 0.007 .3636658 .8504569

2016 | .3600181 .0882189 -4.17 0.000 .2227131 .581973

|

\_cons | .0000306 4.33e-06 -73.35 0.000 .0000232 .0000404

lnhours | 1 (offset)

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.PP.3.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.PP.3.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.PP.3.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 22446

number of covariate patterns = 22446

Pearson chi2(22364) = 58480.61

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -14870.61

Iteration 1: log likelihood = -10895.741

Iteration 2: log likelihood = -10526.027

Iteration 3: log likelihood = -10479.173

Iteration 4: log likelihood = -10478.773

Iteration 5: log likelihood = -10478.773

Logistic regression Number of obs = 22,446

LR chi2(2) = 8783.67

Prob > chi2 = 0.0000

Log likelihood = -10478.773 Pseudo R2 = 0.2953

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

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

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

\_hat | .9790599 .015216 64.34 0.000 .9492371 1.008883

\_hatsq | .1189698 .0055555 21.41 0.000 .1080812 .1298584

\_cons | -.1484128 .0188938 -7.86 0.000 -.185444 -.1113817

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

Note: 0 failures and 22 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 12027 3081 | 15108

- | 1960 5378 | 7338

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

Total | 13987 8459 | 22446

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 85.99%

Specificity Pr( -|~D) 63.58%

Positive predictive value Pr( D| +) 79.61%

Negative predictive value Pr(~D| -) 73.29%

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

False + rate for true ~D Pr( +|~D) 36.42%

False - rate for true D Pr( -| D) 14.01%

False + rate for classified + Pr(~D| +) 20.39%

False - rate for classified - Pr( D| -) 26.71%

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

Correctly classified 77.54%

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

.

. pause "next"

.

. predict bpp3\_yhat

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

(7843 missing values generated)

. gen bpp3\_res = dv\_indicator - bpp3\_yhat

(7,843 missing values generated)

.

. summ dv\_indicator bpp3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bpp3\_yhat | 22,446 .62314 .2782769 .0001636 .9999989

. /\*

> pause "next"

>

> scatter dv\_indicator bpp3\_yhat

>

> pause "next"

>

> scatter bpp3\_res dv\_indicator

>

> pause "next"

>

> scatter bpp3\_res bpp3\_yhat

> \*/

. pause "complete: B.PP.3"