. // Model B.V.3

.

. eststo clear

. eststo: logit dv\_indicator `count\_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 = -10640.456

Iteration 2: log pseudolikelihood = -10596.364

Iteration 3: log pseudolikelihood = -10596.009

Iteration 4: log pseudolikelihood = -10596.009

Logistic regression Number of obs = 22,446

Wald chi2(77) = .

Log pseudolikelihood = -10596.009 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\_c\_4lag | 1.050186 .0277845 1.85 0.064 .9971177 1.10608

p75\_c\_4lag | 1.005028 .0007025 7.17 0.000 1.003652 1.006406

mine\_time | 1.000306 .0026157 0.12 0.907 .9951928 1.005446

onsite\_insp\_hours | 1.002197 .0004929 4.46 0.000 1.001232 1.003164

|

state |

AL | 1.132475 .4411879 0.32 0.749 .5277384 2.43018

AR | 2.076092 .1586427 9.56 0.000 1.787322 2.411517

CO | 1.519043 .2954208 2.15 0.032 1.0376 2.223874

IL | 3.759675 1.124833 4.43 0.000 2.09163 6.757962

IN | 1.486771 .2688932 2.19 0.028 1.043033 2.119288

MD | 1.779364 .503464 2.04 0.042 1.021929 3.098196

MT | .6776296 .0479756 -5.50 0.000 .5898316 .7784966

NM | 3.809131 .2464292 20.67 0.000 3.355506 4.324081

OH | 1.459874 .3322561 1.66 0.096 .9345197 2.280564

OK | 3.409326 1.415507 2.95 0.003 1.510987 7.692655

PA | 1.988262 .2337998 5.84 0.000 1.578995 2.503609

TN | 2.102147 .5419454 2.88 0.004 1.268289 3.484236

UT | .4939024 .1541223 -2.26 0.024 .2679314 .9104554

VA | 1.040575 .082014 0.50 0.614 .891631 1.2144

WV | 1.725203 .1320542 7.12 0.000 1.484861 2.004448

WY | 5.00821 .3049856 26.46 0.000 4.444744 5.643106

|

time |

2000.75 | 1.862184 .321708 3.60 0.000 1.327304 2.612612

2001 | 2.263584 .4024975 4.59 0.000 1.5975 3.207395

2001.25 | 2.344493 .3963918 5.04 0.000 1.683191 3.265613

2001.5 | 2.718924 .4627993 5.88 0.000 1.947649 3.795628

2001.75 | 2.192798 .3727533 4.62 0.000 1.571459 3.059808

2002 | 2.356641 .4013566 5.03 0.000 1.687821 3.29049

2002.25 | 2.053678 .3473421 4.25 0.000 1.474237 2.860866

2002.5 | 2.857865 .4837855 6.20 0.000 2.050919 3.982309

2002.75 | 1.978392 .3362196 4.01 0.000 1.417928 2.760391

2003 | 2.125546 .3791706 4.23 0.000 1.498397 3.015186

2003.25 | 2.276503 .4111908 4.55 0.000 1.597795 3.243513

2003.5 | 3.505764 .647217 6.79 0.000 2.441395 5.034164

2003.75 | 1.811897 .3170473 3.40 0.001 1.285847 2.553156

2004 | 1.904493 .3289665 3.73 0.000 1.357531 2.671831

2004.25 | 1.701458 .2932581 3.08 0.002 1.213698 2.385238

2004.5 | 1.963819 .3303892 4.01 0.000 1.412203 2.730902

2004.75 | 1.521946 .2481279 2.58 0.010 1.105669 2.094949

2005 | 1.614523 .2754696 2.81 0.005 1.155613 2.255673

2005.25 | 1.67413 .2804897 3.08 0.002 1.205524 2.32489

2005.5 | 1.833925 .3080253 3.61 0.000 1.319514 2.548878

2005.75 | 1.306446 .2150488 1.62 0.104 .9461905 1.803866

2006 | 1.631624 .2668317 2.99 0.003 1.184177 2.248141

2006.25 | 1.469946 .2434471 2.33 0.020 1.062499 2.033641

2006.5 | 1.756113 .2834165 3.49 0.000 1.279907 2.409499

2006.75 | 1.403674 .2392128 1.99 0.047 1.005091 1.960322

2007 | 1.157967 .1824174 0.93 0.352 .8503625 1.576841

2007.25 | 1.178509 .1851124 1.05 0.296 .8662273 1.603371

2007.5 | 1.462365 .2319582 2.40 0.017 1.071617 1.995594

2007.75 | 1.219312 .1927414 1.25 0.210 .8944627 1.66214

2008 | 1.142017 .1919126 0.79 0.429 .8215433 1.587503

2008.25 | 1.137566 .1834068 0.80 0.424 .8293529 1.56032

2008.5 | 1.080682 .1656216 0.51 0.613 .8002869 1.459319

2009 | 1.011301 .1738344 0.07 0.948 .7220472 1.416429

2009.25 | .9700884 .1672617 -0.18 0.860 .6919074 1.360112

2009.5 | 1.046725 .1778385 0.27 0.788 .7502632 1.460333

2009.75 | .8130901 .1396206 -1.20 0.228 .5807293 1.138423

2010 | 1.007924 .1843161 0.04 0.966 .7043221 1.442396

2010.25 | .9054884 .1545022 -0.58 0.561 .6481022 1.265092

2010.5 | 1.252605 .2239485 1.26 0.208 .8823302 1.778268

2010.75 | .7546621 .1397973 -1.52 0.129 .5248943 1.085009

2011 | .8312364 .1383503 -1.11 0.267 .599862 1.151855

2011.25 | .9889539 .1743805 -0.06 0.950 .6999793 1.397227

2011.5 | 1.312714 .2354021 1.52 0.129 .9236947 1.86557

2011.75 | .8102028 .1437076 -1.19 0.235 .5722874 1.147026

2012 | .9027487 .1548918 -0.60 0.551 .6449402 1.263614

2012.25 | 1.001397 .1754437 0.01 0.994 .7103568 1.411679

2012.5 | .9598747 .1766693 -0.22 0.824 .6691863 1.376835

2012.75 | .4884032 .0886227 -3.95 0.000 .3422351 .6969993

2013 | .8043586 .1473608 -1.19 0.235 .5617035 1.15184

2013.25 | .8116077 .1566299 -1.08 0.279 .5560005 1.184724

2013.5 | .8513799 .1643601 -0.83 0.405 .5831734 1.242937

2013.75 | .5182811 .1013954 -3.36 0.001 .3532142 .7604886

2014 | .6453948 .1339393 -2.11 0.035 .4297094 .9693398

2014.25 | .6491342 .1270962 -2.21 0.027 .4422571 .9527833

2014.5 | .7084435 .1501796 -1.63 0.104 .4675876 1.073365

2014.75 | .8217166 .1726016 -0.93 0.350 .5444113 1.240272

2015 | .6370167 .1294618 -2.22 0.026 .4277204 .9487278

2015.25 | .5002864 .1048349 -3.31 0.001 .3317796 .7543758

2015.5 | .9294135 .1958473 -0.35 0.728 .6149539 1.404673

2015.75 | .5831254 .1251215 -2.51 0.012 .3829299 .8879829

2016 | .3900214 .0939567 -3.91 0.000 .2432387 .6253803

|

\_cons | .0000294 4.13e-06 -74.19 0.000 .0000223 .0000387

lnhours | 1 (offset)

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

(est1 stored)

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

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 22446

number of covariate patterns = 22444

Pearson chi2(22362) = 56046.30

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -14870.61

Iteration 1: log likelihood = -10865.603

Iteration 2: log likelihood = -10519.963

Iteration 3: log likelihood = -10454.404

Iteration 4: log likelihood = -10449.14

Iteration 5: log likelihood = -10449.125

Iteration 6: log likelihood = -10449.125

Logistic regression Number of obs = 22,446

LR chi2(2) = 8842.97

Prob > chi2 = 0.0000

Log likelihood = -10449.125 Pseudo R2 = 0.2973

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

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

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

\_hat | .9728794 .0152371 63.85 0.000 .9430152 1.002743

\_hatsq | .1159455 .0056864 20.39 0.000 .1048004 .1270906

\_cons | -.1422014 .0189012 -7.52 0.000 -.1792471 -.1051556

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

Note: 0 failures and 27 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 12002 3058 | 15060

- | 1985 5401 | 7386

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

Total | 13987 8459 | 22446

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 85.81%

Specificity Pr( -|~D) 63.85%

Positive predictive value Pr( D| +) 79.69%

Negative predictive value Pr(~D| -) 73.12%

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

False + rate for true ~D Pr( +|~D) 36.15%

False - rate for true D Pr( -| D) 14.19%

False + rate for classified + Pr(~D| +) 20.31%

False - rate for classified - Pr( D| -) 26.88%

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

Correctly classified 77.53%

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

.

. pause "next"

.

. predict bv3\_yhat

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

(7843 missing values generated)

. gen bv3\_res = dv\_indicator - bv3\_yhat

(7,843 missing values generated)

.

. summ dv\_indicator bv3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bv3\_yhat | 22,446 .62314 .2797059 .0001848 .9999991

. /\*

> pause "next"

>

> scatter dv\_indicator bv3\_yhat

>

> pause "next"

>

> scatter bv3\_res dv\_indicator

>

> pause "next"

>

> scatter bv3\_res bv3\_yhat

> \*/

. pause "complete: B.V.3"