. logit MR\_indicator `part\_count\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

note: 17.state != 0 predicts success perfectly

17.state dropped and 11 obs not used

Iteration 0: log pseudolikelihood = -3080.1072

Iteration 1: log pseudolikelihood = -2917.9876

Iteration 2: log pseudolikelihood = -2906.659

Iteration 3: log pseudolikelihood = -2906.5584

Iteration 4: log pseudolikelihood = -2906.5584

Logistic regression Number of obs = 6,242

Wald chi2(35) = .

Log pseudolikelihood = -2906.5584 Prob > chi2 = .

(Std. Err. adjusted for 1,237 clusters in mineid)

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| Robust

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

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

p47\_c\_4lag | 1.010498 .0474743 0.22 0.824 .9216055 1.107964

p48\_c\_4lag | 1.016792 .0129322 1.31 0.190 .9917588 1.042457

p71\_c\_4lag | 1.063747 .0702644 0.94 0.349 .9345735 1.210775

p72\_c\_4lag | 1.007083 .0392435 0.18 0.856 .9330309 1.087012

p75\_c\_4lag | 1.001027 .0003712 2.77 0.006 1.000299 1.001754

p77\_c\_4lag | 1.01032 .0059574 1.74 0.082 .998711 1.022064

mine\_time | .9917555 .0140122 -0.59 0.558 .9646688 1.019603

onsite\_insp\_hours | 1.000857 .0001991 4.31 0.000 1.000467 1.001247

|

state |

1 | 1.55401 .6267531 1.09 0.274 .7049411 3.425743

2 | 2.571209 .2489532 9.75 0.000 2.126773 3.10852

3 | .6373759 .2255256 -1.27 0.203 .3185746 1.275205

4 | 1.91609 .5921553 2.10 0.035 1.045581 3.511351

5 | .8155162 .2272397 -0.73 0.464 .4723341 1.408043

6 | .7217636 .0652131 -3.61 0.000 .6046261 .8615948

7 | .8338563 .2631045 -0.58 0.565 .4492766 1.547635

8 | 1.361847 .1181089 3.56 0.000 1.148964 1.614175

9 | 2.359743 .2441844 8.30 0.000 1.926563 2.890323

10 | .6040822 .2270548 -1.34 0.180 .2891726 1.261929

11 | .6296103 .1604625 -1.82 0.069 .3820625 1.03755

12 | 1.025245 .1779605 0.14 0.886 .729587 1.440714

13 | 2.005412 .7373376 1.89 0.058 .9755266 4.122571

14 | .6735533 .2146093 -1.24 0.215 .3607115 1.25772

15 | .5664584 .0611251 -5.27 0.000 .4584764 .6998728

17 | 1 (empty)

|

time |

2000 | 1.066519 .1508707 0.46 0.649 .8082709 1.40728

2002 | .7378022 .1093543 -2.05 0.040 .5517954 .9865108

2003 | .8027173 .1347391 -1.31 0.190 .5776773 1.115424

2004 | .5332996 .0858169 -3.91 0.000 .3890439 .7310446

2005 | .5472369 .0822669 -4.01 0.000 .4075803 .7347468

2006 | .595267 .0913098 -3.38 0.001 .4407003 .8040448

2007 | .5792472 .0941236 -3.36 0.001 .4212595 .7964861

2008 | .4565885 .0745104 -4.80 0.000 .3316025 .6286835

2009 | .2258479 .0396826 -8.47 0.000 .1600501 .3186957

2010 | .3091971 .0569034 -6.38 0.000 .2155676 .4434934

2011 | .3801922 .068268 -5.39 0.000 .2673991 .5405631

2012 | .3308549 .063594 -5.75 0.000 .2270006 .4822231

2013 | .2292065 .0478903 -7.05 0.000 .1521869 .3452047

2014 | .1904161 .0420717 -7.51 0.000 .1234906 .2936117

2015 | .2476031 .0550304 -6.28 0.000 .1601675 .3827698

|

\_cons | .000023 2.94e-06 -83.79 0.000 .0000179 .0000296

lnhours | 1 (offset)

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

. lfit

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

number of observations = 6242

number of covariate patterns = 6226

Pearson chi2(6187) = 6063.44

Prob > chi2 = 0.8670

. linktest

Iteration 0: log likelihood = -4293.1367

Iteration 1: log likelihood = -2905.1305

Iteration 2: log likelihood = -2898.3634

Iteration 3: log likelihood = -2898.2301

Iteration 4: log likelihood = -2898.2299

Logistic regression Number of obs = 6,242

LR chi2(2) = 2789.81

Prob > chi2 = 0.0000

Log likelihood = -2898.2299 Pseudo R2 = 0.3249

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

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

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

\_hat | 1.121169 .0319757 35.06 0.000 1.058498 1.183841

\_hatsq | -.0321808 .0151091 -2.13 0.033 -.061794 -.0025675

\_cons | .0273431 .036237 0.75 0.451 -.04368 .0983663

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 2770 748 | 3518

- | 674 2050 | 2724

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

Total | 3444 2798 | 6242

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 80.43%

Specificity Pr( -|~D) 73.27%

Positive predictive value Pr( D| +) 78.74%

Negative predictive value Pr(~D| -) 75.26%

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

False + rate for true ~D Pr( +|~D) 26.73%

False - rate for true D Pr( -| D) 19.57%

False + rate for classified + Pr(~D| +) 21.26%

False - rate for classified - Pr( D| -) 24.74%

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

Correctly classified 77.22%

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

. summ MR\_indicator pbv3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

pbv3\_yhat | 6,242 .5517462 .2917048 .0003793 .9999846