EVALUATION GUIDELINES - Take-home examination

DRE 70061
Panel Data/Microeconometrics

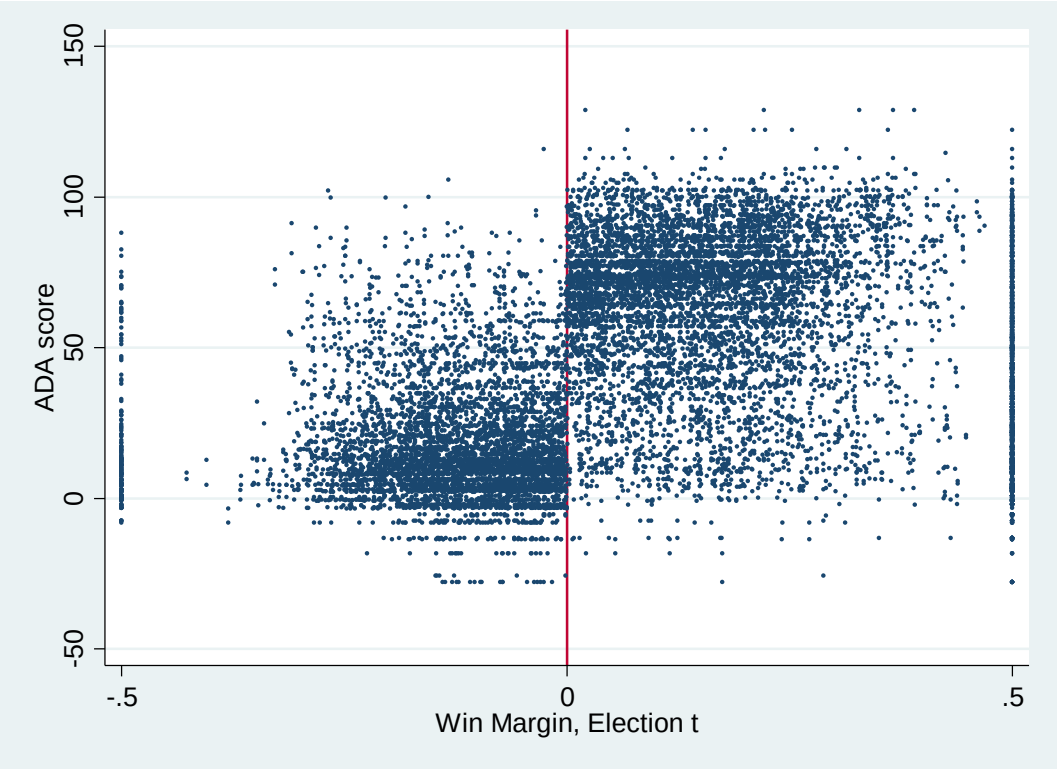
Department of Economics

Start date:	11.05.2015	Time 09:00
Finish date:	12.05.2015	Time 15:00

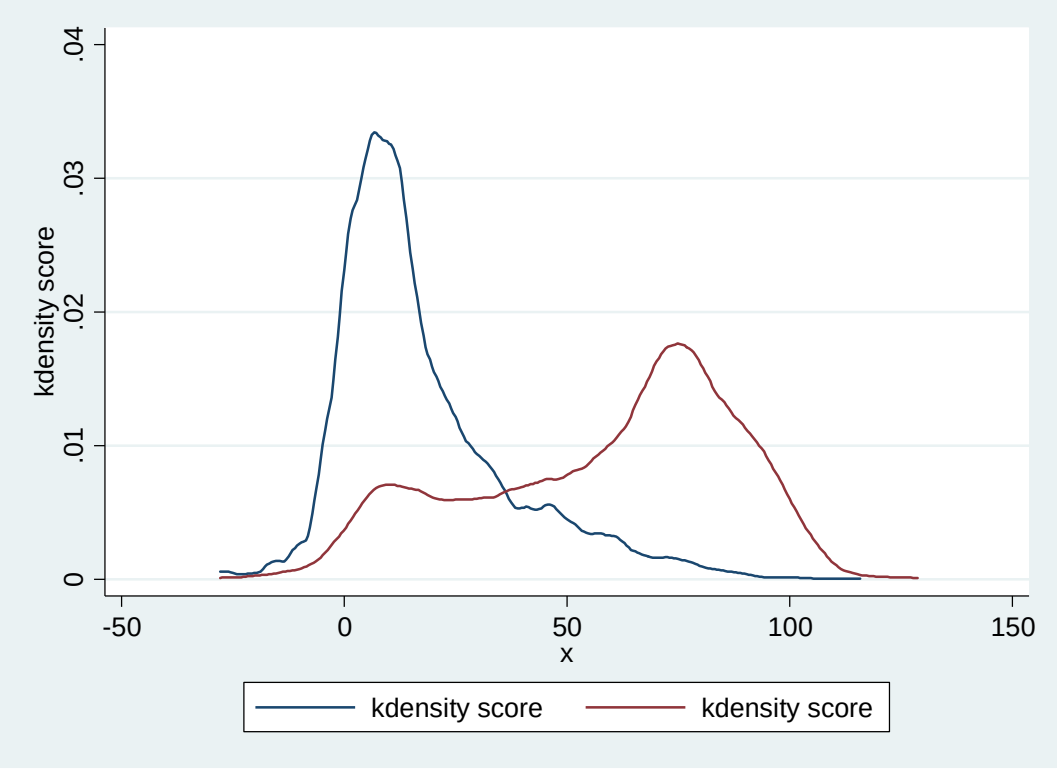
For more information about formalities, see examination paper.

/* a */

scatter score margin, msize(tiny) xline(0) xtitle("Win Margin, Election t") ytitle("ADA score")



twoway (kdensity score if democrat==0) (kdensity score if democrat==1)



/* b */

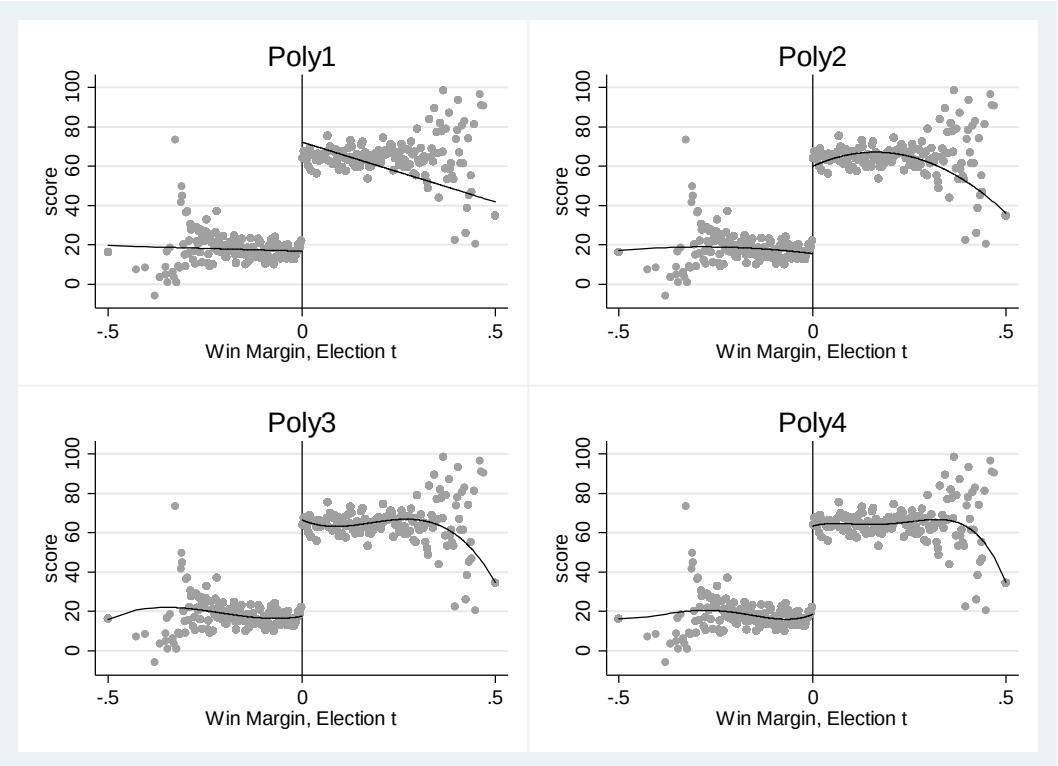
teffects ra (score) (demwin)

```
Treatment-effects estimation                   Number of obs      =     13577
Estimator      : regression adjustment
Outcome model  : linear
Treatment model: none
------------------------------------------------------------------------------
             |               Robust
       score |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ATE          |
      demwin |
   (1 vs 0)  |   40.81002   .4181457    97.60   0.000     39.99047    41.62957
-------------+----------------------------------------------------------------
POmean       |
      demwin |
          0  |    17.5756   .2625266    66.95   0.000     17.06106    18.09014
------------------------------------------------------------------------------
```

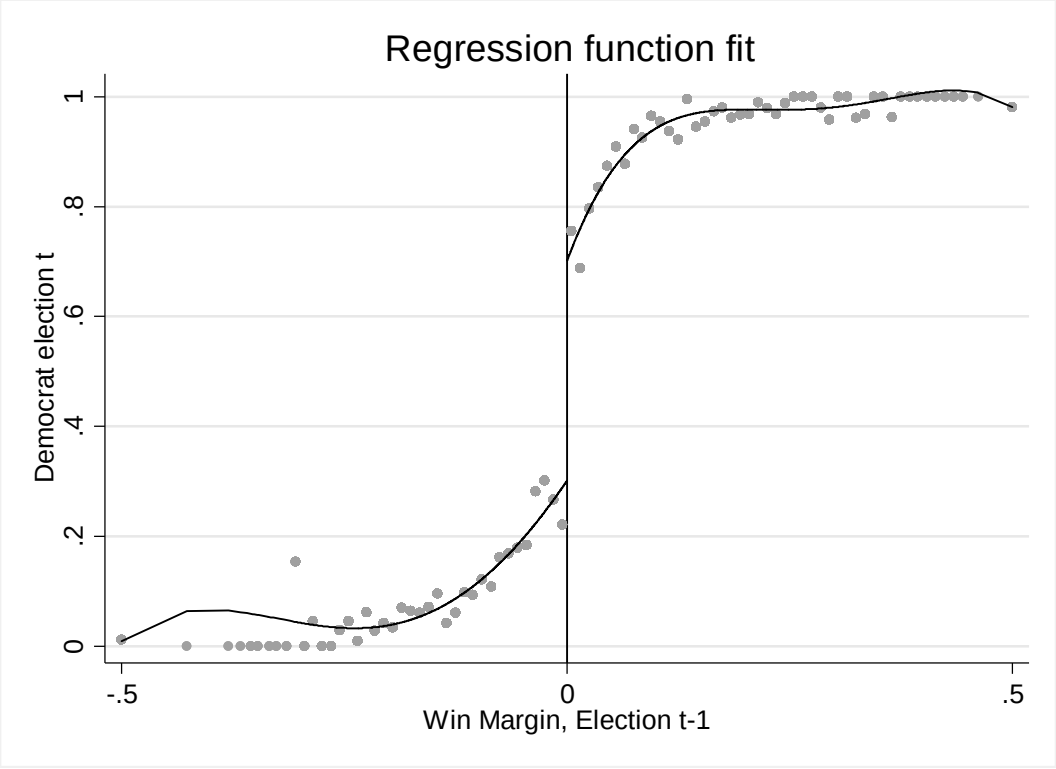
* with controls

```
. teffects ra (score black high_school votingpop income south north west eligible) (demwin)

Treatment-effects estimation                   Number of obs      =      9248
Estimator      : regression adjustment
Outcome model  : linear
Treatment model: none
------------------------------------------------------------------------------
             |               Robust
       score |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ATE          |
      demwin |
   (1 vs 0)  |   46.50986   .4351253   106.89   0.000     45.65703    47.36269
-------------+----------------------------------------------------------------
POmean       |
      demwin |
          0  |   17.99943   .3131808    57.47   0.000     17.38561    18.61326
------------------------------------------------------------------------------
```

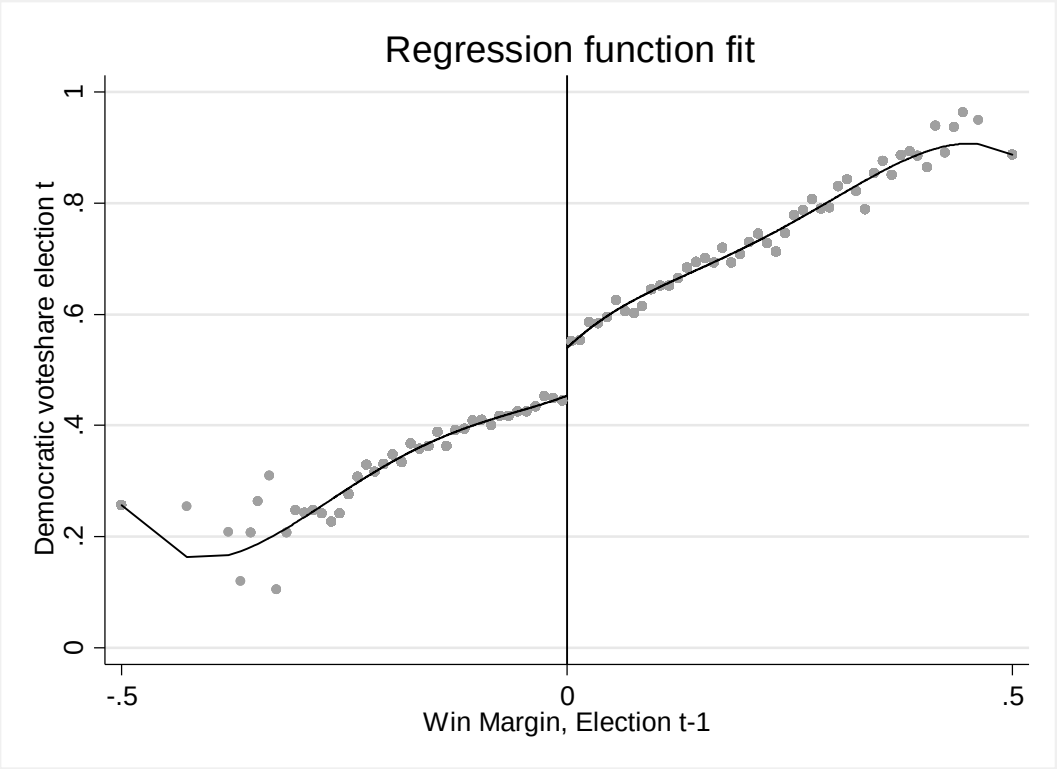
```
/* c */

reg score demwin margin , cluster(id2)


Linear regression                                     Number of obs =   13577
                                                      F(  2,   504) =  837.66
                                                      Prob > F      =  0.0000
                                                      R-squared     =  0.4242
                                                      Root MSE      =  24.764

                                  (Std. Err. adjusted for 505 clusters in id2)
------------------------------------------------------------------------------
             |               Robust
       score |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      demwin |   58.50236   1.555847    37.60   0.000      55.44561     61.5591
      margin |  -48.93761   4.441693   -11.02   0.000    -57.66412   -40.21109
       _cons |   11.03413   .9602657    11.49   0.000     9.147518    12.92075
------------------------------------------------------------------------------


/* d */

***this is figure IIa in LMB ***

rdplot score margin, p(1) graph_options(xtitle("Win Margin, Election t") ytitle("score")
title(Poly1) graphregion(fcolor(white)) scheme(s2mono) legend(off))
```



```
/* e */

**** choose the second order polynomial (could also do the local linear)

gen margin2=margin^2

gen demwinXmargin2=demwin*margin2


forvalues i=0.01(0.01)0.50{

reg score demwin margin margin2 demwinXmargin demwinXmargin2 if abs(margin)<`i', cluster (id2)

}

**** student should present these results in a figure



/* f */

***this is figure IIb in LMB ***

rdplot democrat lagmargin, numbinl(50) numbinr(50) graph_options(xtitle("Win Margin, Election
t-1") ytitle("Democrat election t") graphregion(fcolor(white)) scheme(s2mono) legend(off))
```

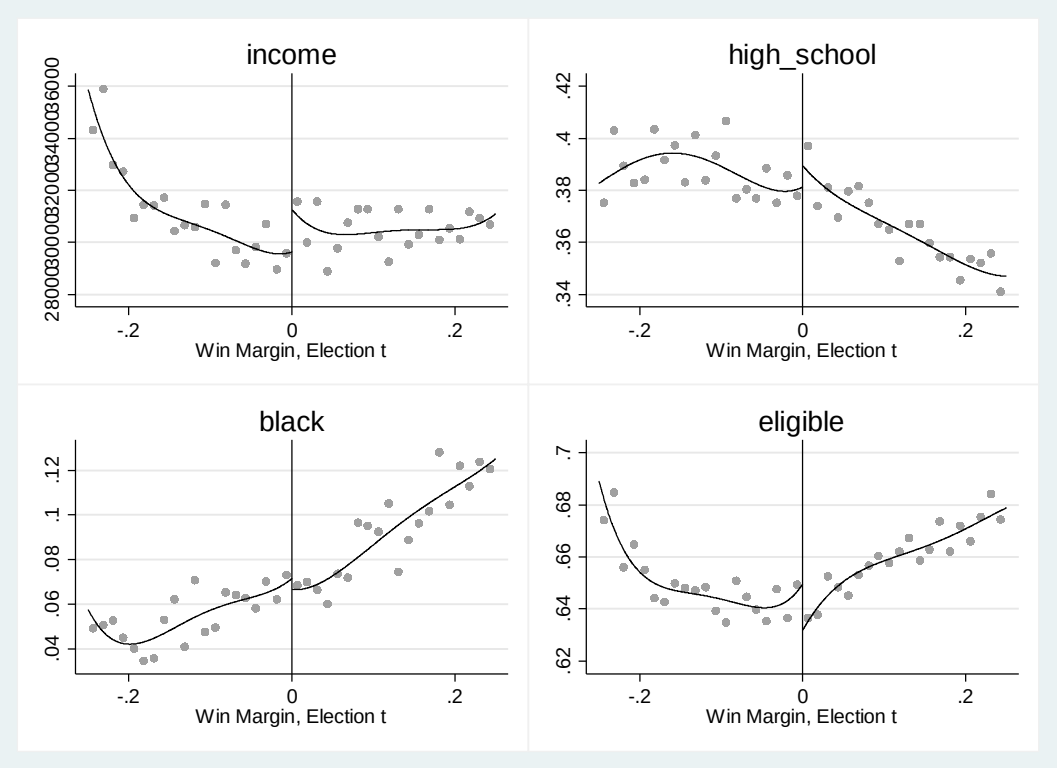


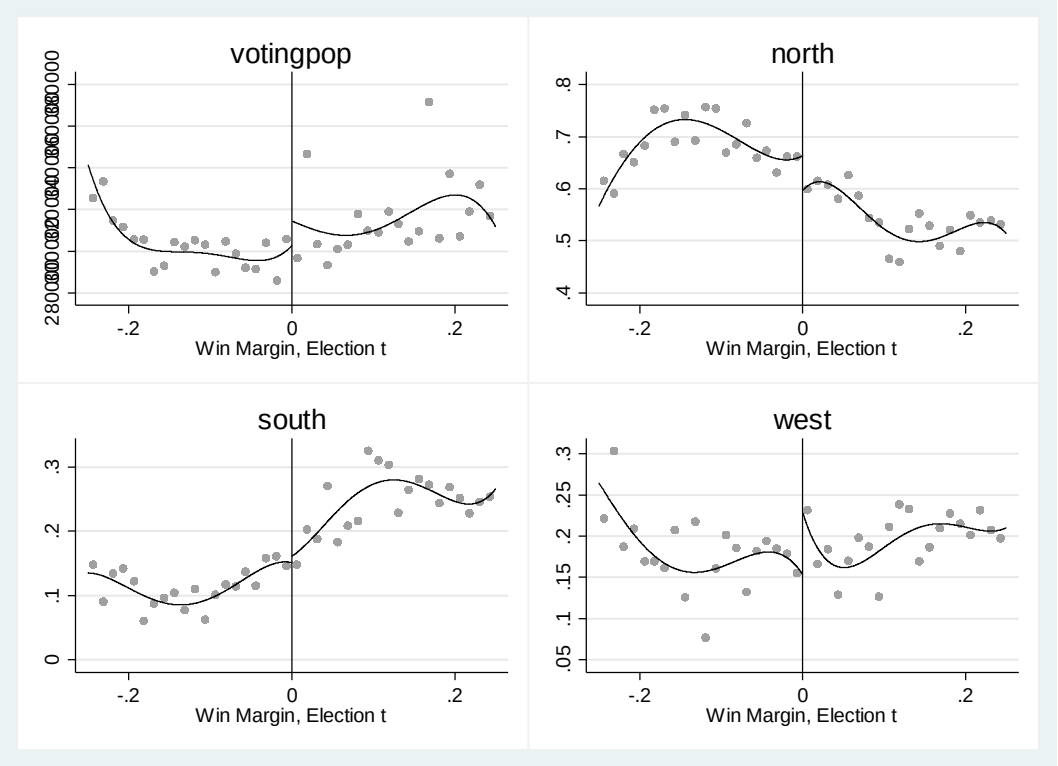

```
rdplot demvoteshare lagmargin, numbinl(50) numbinr(50) graph_options(xtitle("Win Margin,
Election t-1") ytitle("Democrat election t") graphregion(fcolor(white)) scheme(s2mono) legend
(off))
```



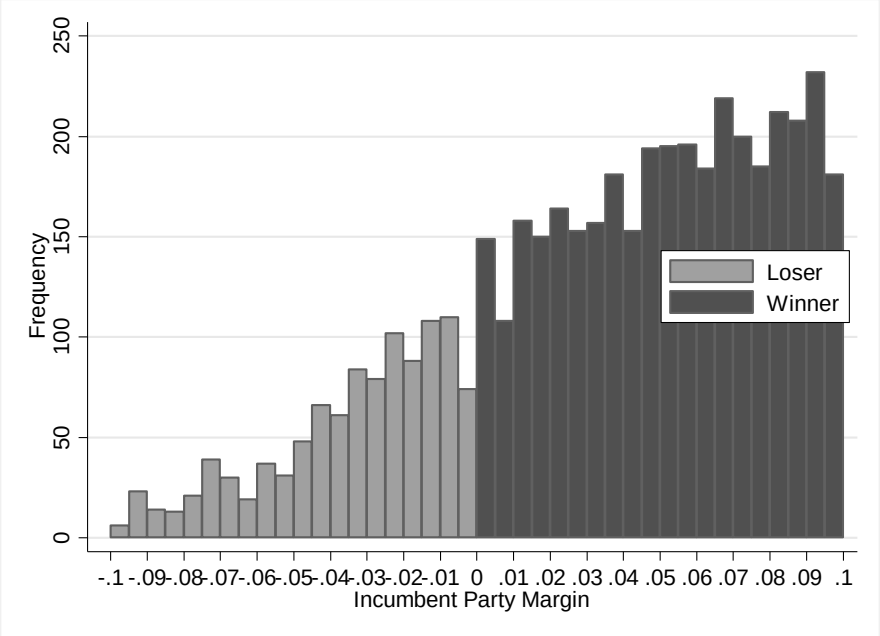
ee-Lemieux: “It is more natural to interpret the RD gap as estimating a weighted average treatment effect of incumbency across all districts, where more weight is given to those districts in which a close election race was expected” (p.299)

```
/* g */

** fig III and IV in LMB *** (other solutions also possible)
```





```
/*  h  */

gen repvoteshare = 1-demvoteshare

gen incmargin = .

replace incmargin = demvoteshare-0.5 if lagdemocrat==1

replace incmargin = repvoteshare-0.5 if lagdemocrat==0

twoway (hist incmargin if incmargin<0 & incmargin>-0.1, width(0.005) start(-0.1) freq
bfcolor(gs10) blcolor(gs6)) (hist incmargin if incmargin>0 & incmargin<0.1, width(0.005)
start(0) freq bfcolor(gs5) blcolor(gs6)) , graphregion(fcolor(white)) scheme(s2mono) xlabel(-
0.1(0.01)0.1) legend(label(1 "Loser") label(2 "Winner") pos(3) ring(0) col(1))
xtitle(Incumbent Party Margin)
```




```
// Mcrary test //

keep if abs(incmargin)<0.10

DCdensity incmargin, breakpoint(0) generate(Xj Yj r0 fhat se_fhat)
```