Statistics/Data analysis

```
      name:  <unnamed>
       log:  C:\Users\elisa\Dropbox\PhD\Research\Cooling off periods and selection of
> public officials\HLOGA and strategic behavior of staffers\Data\_replication_final\lo
> gfile.smcl
  log type:  smcl
 opened on:   3 Apr 2024, 15:44:30

1 .
2 . * figures
3 . do FIGURE1.do

4 .
5 . /*******************************************************************************\
  > |    Title:              FIGURE1: Number of covered staff over time
  >                  |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*******************************************************************************/
6 .
7 .
8 . clear all

9 . set more off, permanently
  (set more preference recorded)

10. numlabel, add
  (dataset has no value labels)

11. set maxvar 32000


12.
13. use congress_yearly.dta, clear

14.
15. * Share of covered staff (overall) by year
16. bysort year: egen treat_mean = mean(treatment)

17.
18. * Share of covered staff by position and year
19. foreach var in senate_everyear house_everyear personalstaff_everyear committeestaff_
  > everyear {
    2.     bysort year: egen treat_`var' = mean(treatment) if `var'==1
    3. }
  (177,516 missing values generated)
  (119,004 missing values generated)
  (87,861 missing values generated)
  (255,047 missing values generated)

20.
21. * Retain only one observation by year
22. collapse treat_*, by(year)

23.
24. * Plot shares over time
25. twoway (line treat_mean year, lcolor(black) lwidth(medthick)) ///
  >  (line treat_committeestaff year, lcolor(gs6)) ///
  >  (line treat_personalstaff year, lcolor(gs6) lpattern(dash)) ///
  >  (line treat_senate year, lcolor(gs6) lpattern(shortdash_dot)) ///
  >  (line treat_house year, lcolor(gs6) lpattern(dot)), ///
  >  graphregion(color(white)) xtitle("Year") ytitle("Share of staff covered") ///
  >  xline(2008, lcolor(black)) ttext(.4 2012 "Post HLOGA", size(small)) ttext(.4 2004 "
  > Pre HLOGA", size(small)) ///
  >  legend(size(small) holes(2) label(1 "All") label(2 "Committee staff") label(3 "Pers
  > onal staff") label(4 "Senate staff") label(5 "House staff"))
```

```
26.
27.
  end of do-file

28. do FIGURE2.do

29.
30. /*****************************************************************************\
  > |    Title:              FIGURE2: McCrary density estimates, before and after HLOGA|
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
31.
32.
33. clear all

34. set more off, permanently
  (set more preference recorded)

35. numlabel, add
  (dataset has no value labels)

36. set maxvar 32000


37.
38.
39. *-----------------------------------------------------------------------------*
40. *                                                                McCrary Test - Progr
  > am                                                *
41. *-----------------------------------------------------------------------------*
42.
43. * The program to estimate McCrary density tests is adapted from Justin McCrary's sou
  > rce code: https://eml.berkeley.edu/~jmccrary/DCdensity/
44.
45. capture program drop DCdensity

46. program DCdensity, rclass
    1. {
    2.   version 13.0
    3.   set more off
    4.   pause on
    5.   syntax varname(numeric) [if/] [in/], breakpoint(real) GENerate(string) ///
  >     [ b(real 0) h(real 0) at(string) graphname(string) noGRaph graphtitle(string)]
    6.
47.   marksample touse
    7.
48.   //Advanced user switch
49.   //0 - supress auxiliary output  1 - display aux output
50.   local verbose 1
    8.
51.   //Bookkeeping before calling MATA function
52.   //"running variable" in terminology of McCrary (2008)
53.   local R "`varlist'"
    9.
54.   tokenize `generate'
   10.   local wc : word count `generate'
   11.   if (`wc'!=5) {
   12.     //generate(Xj Yj r0 fhat se_fhat) is suggested
```

```
55.     di "Specify names for five variables in generate option"
   13.     di "1. Name of variable in which to store cell midpoints of histogram"
   14.     di "2. Name of variable in which to store cell heights of histogram"
   15.     di "3. Name of variable in which to store evaluation sequence for local linea
  > r regression loop"
   16.     di "4. Name of variable in which to store local linear density estimate"
   17.     di "5. Name of variable in which to store standard error of local linear dens
  > ity estimate"
   18.     error 198
   19.   }
   20.   else {
   21.     local cellmpname = "`1'"
   22.     local cellvalname = "`2'"
   23.     local evalname = "`3'"
   24.     local cellsmname = "`4'"
   25.     local cellsmsename = "`5'"
   26.     confirm new var `1'
   27.     confirm new var `2'
   28.     capture confirm new var `3'
   29.     if (_rc!=0 & "`at'"!="`3'") error 198
   30.     confirm new var `4'
   31.     confirm new var `5'
   32.   }
   33.
56.   //If the user does not specify the evaluation sequence, this it is taken to be the
  >  histogram midpoints
57.   if ("`at'" == "") {
   34.     local at  = "`1'"
   35.   }
   36.
58.   //Call MATA function
59.   mata: DCdensitysub("`R'", "`touse'", `breakpoint', `b', `h', `verbose', "`cellmpna
  > me'", "`cellvalname'", ///
  >                     "`evalname'", "`cellsmname'", "`cellsmsename'", "`at'")
   37.
60.   //Dump MATA return codes into STATA return codes
61.   return scalar theta = r(theta)
   38.   return scalar se = r(se)
   39.   return scalar binsize = r(binsize)
   40.   return scalar bandwidth = r(bandwidth)
   41.
62.   //if user wants the graph...
63.   if ("`graph'"!="nograph") {
   42.         *local breakpoint 0.75
64.         *local cellmpname Xj
65.         *local cellvalname Yj
66.         *local evalname r0
67.         *local cellsmname fhat
68.         *local cellsmsename se_fhat
69.         *drop if `cellmpname' < 0 | `cellmpname' > 1
70.         *drop if `evalname' < 0 | `evalname' > 1
71.     tempvar hi
   43.     quietly gen `hi' = `cellsmname' + 1.96*`cellsmsename'
   44.     tempvar lo
   45.     quietly gen `lo' = `cellsmname' - 1.96*`cellsmsename'
   46.     gr twoway (scatter `cellvalname' `cellmpname', msymbol(circle_hollow) mcolor(
  > gray))              ///
  >       (line `cellsmname' `evalname' if `evalname' < `breakpoint', lcolor(black) lwid
  > th(medthick))   ///
  >         (line `cellsmname' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(medthick))   ///
  >           (line `hi' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth(v
  > thin))              ///
  >             (line `lo' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth
  > (vthin))              ///
  >               (line `hi' `evalname' if `evalname' > `breakpoint', lcolor(black) lwid
  > th(vthin))            ///
  >                 (line `lo' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(vthin)),             ///
  >                   xline(`breakpoint', lcolor(black)) legend(off) graphregion(color(w
  > hite)) ///
  >                                 xtitle("Share of member salary") ytitle("Density E
```

```
> stimate") title("`graphtitle'", color(black) size(medsmall)) ttext(4.5 0.92 "75% thr
> eshold", size(small))
 47.     if ("`graphname'"!="") {
 48.       di "Exporting graph as `graphname'"
 49.       graph save `graphname', replace
 50.           graph export `graphname'.png, replace
 51.     }
 52.   }
 53. }
 54. end


72.
73.
74. mata:
```

mata (type **end** to exit)

```
: mata set matastrict on

:
: void DCdensitysub(string scalar runvar, string scalar tousevar, real scalar c, real
> scalar b, ///
>                   real scalar h, real scalar verbose, string scalar cellmpname, stri
> ng scalar cellvalname, ///
>                   string scalar evalname, string scalar cellsmname, string scalar ce
> llsmsename, ///
>                   string scalar atname) {
>   //   inputs: runvar - name of stata running variable ("R" in McCrary (2008))
>   //             tousevar - name of variable indicating which obs to use
>   //             c - point of potential discontinuity
>   //             b - bin size entered by user (zero if default is to be used)
>   //             h - bandwidth entered by user (zero if default is to be used)
>   //             verbose - flag for extra messages printing to screen
>   //             cellmpname - name of new variable that will hold the histogram cell
>  midpoints
>   //             cellvalname - name of new variable that will hold the histogram val
> ues
>   //             evalname - name of new variable that will hold locations where the
> histogram smoothing was
>   //                           evaluated
>   //             cellsmname - name of new variable that will hold the smoothed histo
> gram cell values
>   //             cellsmsename - name of new variable that will hold standard errors
> for smoothed histogram cells
>   //             atname - name of existing stata variable holding points at which to
>  eval smoothed histogram
>
>   //declarations for general use and histogram generation
>   real colvector run                                              // stata running var
> iable
>   string scalar statacom                                          // string to hold st
> ata commands
>   real scalar errcode                                             // scalar to hold re
> turn code for stata commands
>   real scalar rn, rsd, rmin, rmax, rp75, rp25, riqr               // scalars for summa
> ry stats of running var
>   real scalar l, r                                                // midpoint of lowes
> t bin and highest bin in histogram
>   real scalar lc, rc                                              // midpoint of bin j
> ust left of and just right of breakpoint
>   real scalar j                                                   // number of bins sp
> anned by running var
>   real colvector binnum                                           // each obs bin numb
> er
>   real colvector cellval                                          // histogram cell va
> lues
>   real scalar i                                                   // counter
>   real scalar cellnum                                             // cell value holder
>  for histogram generation
>   real colvector cellmp                                           // histogram cell mi
> dpoints
>   real scalar loopover                                            //DL: Declaring loop
> over?
>
```

```
>   //Set up histogram grid
>
>   st_view(run, ., runvar, tousevar)     //view of running variable--only observation
> s for which `touse'=1
>
>   //Get summary stats on running variable
>   statacom = "quietly summarize " + runvar + " if " + tousevar + ", det"
>   errcode=_stata(statacom,1)
>   if (errcode!=0) {
>     "Unable to successfully execute the command "+statacom
>     "Check whether you have given Stata enough memory"
>   }
>   rn = st_numscalar("r(N)")
>   rsd = st_numscalar("r(sd)")
>   rmin = st_numscalar("r(min)")
>   rmax = st_numscalar("r(max)")
>   rp75 = st_numscalar("r(p75)")
>   rp25 = st_numscalar("r(p25)")
>   riqr = rp75 - rp25
>
>   if ( (c<=rmin) | (c>=rmax) ) {
>     printf("Breakpoint must lie strictly within range of running variable\n")
>     _error(3498)
>   }
>
>   //set bin size to default in paper sec. III.B unless provided by the user
>   if (b == 0) {
>     b = 2*rsd*rn^(-1/2)
>     if (verbose) printf("Using default bin size calculation, bin size = %f\n", b)
>   }
>
>   //bookkeeping
>   l = floor((rmin-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   r = floor((rmax-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   lc = c-(b/2) // midpoint of bin just left of breakpoint
>   rc = c+(b/2) // midpoint of bin just right of breakpoint
>   j = floor((rmax-rmin)/b)+2
>
>   //create bin numbers corresponding to run... See McCrary (2008, eq 2)
>   binnum = round((((floor((run :- c):/b):*b:+b:/2:+c) :- l):/b) :+ 1)  // bin number
>  for each obs
>
>   //generate histogram
>   cellval = J(j,1,0)  // initialize cellval as j-vector of zeros
>   for (i = 1; i <= rn; i++) {
>     cellnum = binnum[i]
>     cellval[cellnum] = cellval[cellnum] + 1
>   }
>
>   cellval = cellval :/ rn  // convert counts into fractions
>   cellval = cellval :/ b  // normalize histogram to integrate to 1
>   cellmp = range(1,j,1)  // initialize cellmp as vector of integers from 1 to j
>   cellmp = floor(((l :+ (cellmp:-1):*b):-c):/b):*b:+b:/2:+c  // convert bin numbers
> into cell midpoints
>
>   //place histogram info into stata data set
>   real colvector stcellval                                    // stata view for ce
> ll value variable
>   real colvector stcellmp                                     // stata view for ce
> ll midpoint variable
>
>   (void) st_addvar("float", cellvalname)
>   st_view(stcellval, ., cellvalname)
>   (void) st_addvar("float", cellmpname)
>   st_view(stcellmp, ., cellmpname)
>   stcellval[|1\j|] = cellval
>   stcellmp[|1\j|] = cellmp
>
>   //Run 4th order global polynomial on histogram to get optimal bandwidth (if necess
> ary)
>   real matrix P                                               // projection matrix
>  returned from orthpoly command
```

```
>   real matrix betaorth4                                           // coeffs from regre
> ssion of orthogonal powers of cellmp
>   real matrix beta4                                               // coeffs from norma
> l regression of powers of cellmp
>   real scalar mse4                                                // mean squared erro
> r from polynomial regression
>   real scalar hleft, hright                                       // bandwidth est fro
> m polynomial left of and right of breakpoint
>   real scalar leftofc, rightofc                                   // bin number just l
> eft of and just right of breakpoint
>   real colvector cellmpleft, cellmpright                          // cell midpoints le
> ft of and right of breakpoint
>   real colvector fppleft, fppright                                // fit second deriv
> of hist left of and right of breakpoint
>
>   //only calculate optimal bandwidth if user hasn't provided one
>   if (h == 0) {
>     //separate cells left of and right of the cutoff
>     leftofc =  round((((floor((lc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just l
> eft of breakpoint
>     rightofc = round((((floor((rc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just r
> ight of breakpoint
>     if (rightofc-leftofc != 1) {
>       printf("Error occurred in optimal bandwidth calculation\n")
>       _error(3498)
>     }
>     cellmpleft = cellmp[|1\leftofc|]
>     cellmpright = cellmp[|rightofc\j|]
>
>     //estimate 4th order polynomial left of the cutoff
>     statacom = "orthpoly " + cellmpname + ", generate(" + cellmpname + "*) deg(4) po
> ly(P)"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " < " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppleft = 2*beta4[2] :+ 6*beta4[3]:*cellmpleft + 12*beta4[4]:*cellmpleft:^2
>     hleft = 3.348 * ( mse4*(c-l) / sum( fppleft:^2) )^(1/5)
>
>     //estimate 4th order polynomial right of the cutoff
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " > " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppright = 2*beta4[2] :+ 6*beta4[3]:*cellmpright + 12*beta4[4]:*cellmpright:^2
>     hright = 3.348 * ( mse4*(r-c) / sum( fppright:^2) )^(1/5)
>     statacom = "drop " + cellmpname + "1-" + cellmpname + "4"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>
```

```
>     //set bandwidth to average of calculations from left and right
>     h = 0.5*(hleft + hright)
>     if (verbose) printf("Using default bandwidth calculation, bandwidth = %f\n", h)
>   }
>
>   //Add padding zeros to histogram (to assist smoothing)
>   real scalar padzeros                                          // number of zeros t
> o pad on each side of hist
>   real scalar jp                                                // number of histogr
> am bins including padded zeros
>
>   padzeros = ceil(h/b)  // number of zeros to pad on each side of hist
>   jp = j + 2*padzeros
>   if (padzeros >= 1) {
>     //add padding to histogram variables
>     cellval = ( J(padzeros,1,0) \ cellval \ J(padzeros,1,0) )
>     cellmp = ( range(1-padzeros*b,1-b,b) \ cellmp \ range(r+b,r+padzeros*b,b) )
>     //dump padded histogram variables out to stata
>     stcellval[|1\jp|] = cellval
>     stcellmp[|1\jp|] = cellmp
>   }
>
>   //Generate point estimate of discontinuity
>   real colvector dist                                           // distance from a g
> iven observation
>   real colvector w                                              // triangle kernel w
> eights
>   real matrix XX, Xy                                            // regression matrci
> es for weighted regression
>   real rowvector xmean, ymean                                   // means for demeani
> ng regression vars
>   real colvector beta                                           // regression estima
> tes from weighted reg.
>   real colvector ehat                                           // predicted errors
> from weighted reg.
>   real scalar fhatr, fhatl                                      // local linear reg.
>  estimates at discontinuity
>                                                                 //   estimated from
> right and left, respectively
>   real scalar thetahat                                          // discontinuity est
> imate
>   real scalar sethetahat                                        // standard error of
>  discontinuity estimate
>
>   //Estimate left of discontinuity
>   dist = cellmp :- c  // distance from potential discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:<c)  // triangle kernel weig
> hts for left
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)    //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatl = beta[2,1]
>
>   //Estimate right of discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:>=c)  // triangle kernel wei
> ghts for right
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)   //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatr = beta[2,1]
>
>   //Calculate and display discontinuity estimate
```

```
>   thetahat = ln(fhatr) - ln(fhatl)
>   sethetahat = sqrt( (1/(rn*h)) * (24/5) * ((1/fhatr) + (1/fhatl)) )
>   printf("\nDiscontinuity estimate (log difference in height): %f\n", thetahat)
>   printf("                                                   (%f)\n", sethetahat)
>
>   loopover=1 //This is an advanced user switch to get rid of LLR smoothing
>   //Can be used to speed up simulation runs--the switch avoids smoothing at
>   //eval points you aren't studying
>
>   //Perform local linear regression (LLR) smoothing
>   if (loopover==1) {
>     real scalar cellsm                                          // smoothed histogra
> m cell values
>     real colvector stcellsm                                     // stata view for sm
> oothed values
>     real colvector atstata                                      // stata view for at
>  variable (evaluation points)
>     real colvector at                                           // points at which t
> o evaluate LLR smoothing
>     real scalar evalpts                                         // number of evaluat
> ion points
>     real colvector steval                                               // stata vie
> w for LLR smothing eval points
>
>     // if evaluating at cell midpoints
>     if (atname == cellmpname) {
>       at = cellmp[|padzeros+1\padzeros+j|]
>       evalpts = j
>     }
>     else {
>       st_view(atstata, ., atname)
>       evalpts = nonmissing(atstata)
>       at = atstata[|1\evalpts|]
>     }
>
>     if (verbose) printf("Performing LLR smoothing.\n")
>     if (verbose) printf("%f iterations will be performed \n",j)
>
>     cellsm = J(evalpts,1,0)  // initialize smoothed histogram cell values to zero
>     // loop over all evaluation points
>     for (i = 1; i <= evalpts; i++) {
>       dist = cellmp :- at[i]
>       //set weights relative to current bin - note comma below is row join operator,
>  not two separate args
>       w = rowmax( (J(jp,1,0), ///
>         (1:-abs(dist:/h))):*((cellmp:>=c)*(at[i]>=c):+(cellmp:<c):*(at[i]<c)) )
>       //manually obtain weighted regression coefficients
>       w = (w:/sum(w)) :* jp  // normalize weights to sum to N (as does stata aweight
> s)
>       xmean = mean(dist, w)
>       ymean = mean(cellval, w)
>       XX = quadcrossdev(dist,xmean,w,dist,xmean)  //fixed error on 11.17.2009
>       Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>       beta = invsym(XX)*Xy
>       beta = beta \ ymean-xmean*beta
>       cellsm[i] = beta[2,1]
>       //Show dots
>       if (verbose) {
>         if (mod(i,10) == 0) {
>           printf(".")
>           displayflush()
>           if (mod(i,500) == 0) {
>             printf(" %f LLR iterations\n",i)
>             displayflush()
>           }
>         }
>       }
>     }
>     printf("\n")
>
>     //set up stata variable to hold evaluation points for smoothed values
>     (void) st_addvar("float", evalname)
```

```
>     st_view(steval, ., evalname)
>     steval[|1\evalpts|] = at
>
>     //set up stata variable to hold smoothed values
>     (void) st_addvar("float", cellsmname)
>     st_view(stcellsm, ., cellsmname)
>     stcellsm[|1\evalpts|] = cellsm
>
>     //Calculate standard errors for LLR smoothed values
>     real scalar m                                   // amount of kernel being tr
> uncated by breakpoint
>     real colvector cellsmse                         // standard errors of smooth
> ed histogram
>     real colvector stcellsmse                       // stata view for cell midpo
> int variable
>     cellsmse = J(evalpts,1,0)  // initialize standard errors to zero
>     for (i = 1; i <= evalpts; i++) {
>       if (at[i] > c) {
>         m = max((-1, (c-at[i])/h))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2-3*m^11-24*m^10-83*m^9-72*m^8+42*m^7+18*m^6-18*m^5+18*m^4-3*m^3+18*m^2-1
> 5*m)/ ///
>             (1+m^6+6*m^5-3*m^4-4*m^3+9*m^2-6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>       if (at[i] < c) {
>         m = min(((c-at[i])/h, 1))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2+3*m^11-24*m^10+83*m^9-72*m^8-42*m^7+18*m^6+18*m^5+18*m^4-3*m^3+18*m^2+1
> 5*m)/ ///
>             (1+m^6-6*m^5-3*m^4+4*m^3+9*m^2+6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>     }
>     //set up stata variable to hold standard errors for smoothed values
>     (void) st_addvar("float", cellsmsename)
>     st_view(stcellsmse, ., cellsmsename)
>     stcellsmse[|1\evalpts|] = cellsmse
>   }
>   //End of loop over evaluation points
>
>   //Fill in STATA return codes
>   st_rclear()
>   st_numscalar("r(theta)", thetahat)
>   st_numscalar("r(se)", sethetahat)
>   st_numscalar("r(binsize)", b)
>   st_numscalar("r(bandwidth)", h)
> }
note: variable run may be used before set
note: variable stcellval may be used before set
note: variable stcellmp may be used before set
note: variable stcellsm may be used before set
note: variable atstata may be used before set
note: variable steval may be used before set
note: variable stcellsmse may be used before set
note: variable riqr set but not used
note: variable ehat unused

: end
```

```
75.
76.
77. *------------------------------------------------------------------------------*
78. *                                                                              McCr
  > ary Test                                                 *
79. *------------------------------------------------------------------------------*
80.
81. use congress_yearly.dta, clear

82.
83. ****************************************
84. ** Overall sorting
85.
86. * After HLOGA
87. DCdensity percent_annualpay if year>2007 & percent_annualpay>=0 & percent_annualpay
  > <=1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat) graphname(DCdensity_posttreat_r
  > estr) graphtitle("Post HLOGA")
  Using default bin size calculation, bin size = .001103037
  Using default bandwidth calculation, bandwidth = .088173872

  Discontinuity estimate (log difference in height): -.181137105
                                                     (.035603789)
  Performing LLR smoothing.
  908 iterations will be performed
  ..................................................... 500 LLR iterations
  ........................................
  Exporting graph as DCdensity_posttreat_restr
  (file DCdensity_posttreat_restr.gph saved)
  (file DCdensity_posttreat_restr.png written in PNG format)

88. drop Xj Yj r0 fhat se_fhat

89.
90. * Before HLOGA
91. DCdensity percent_annualpay if year<=2007 & percent_annualpay>=0 & percent_annualpay
  >  <=1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat) graphname(DCdensity_pretreat_r
  > estr) graphtitle("Pre HLOGA")
  Using default bin size calculation, bin size = .001145323
  Using default bandwidth calculation, bandwidth = .083231906

  Discontinuity estimate (log difference in height): -.002296171
                                                     (.048207961)
  Performing LLR smoothing.
  875 iterations will be performed
  ..................................................... 500 LLR iterations
  ........................................
  Exporting graph as DCdensity_pretreat_restr
  (file DCdensity_pretreat_restr.gph saved)
  (file DCdensity_pretreat_restr.png written in PNG format)

92. drop Xj Yj r0 fhat se_fhat

93.
94. graph combine DCdensity_pretreat_restr.gph DCdensity_posttreat_restr.gph, ycommon gr
  > aphregion(color(white))

95.
  end of do-file

96. do FIGURE3.do
```

```
97.
98. /*************************************************************************\
  > |    Title:              FIGURE3: Number of switches across the threshold by salary|
  > |                                        quantiles, before and after HLOGA
  >                                      |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*************************************************************************/
99.
100
101 clear all

102 set more off, permanently
  (set more preference recorded)

103 numlabel, add
  (dataset has no value labels)

104 set maxvar 32000


105
106
107 use congress_yearly.dta, clear

108
109 *-------------------------------------------------------------------------------*
110 *                                                    Switching behavior by quanti
  > les                                 *
111 *-------------------------------------------------------------------------------*
112
113 * Note that I care about the LANDING quantile of staffers, i.e. I want
114 * changes between year t and t+1 (instead of t-1 and t as in the main analysis).
115
116 * We therefore need to redefine the treatment period (after HLOGA) and the switching
  >  indicator.
117 * Administrative staff is excluded since they have a cutoff different from the 75% (
  > see manuscript for details).
118
119 gen posttreat2 = 0

120 replace posttreat2 = 1 if year>=2007
  (189,075 real changes made)

121
122 xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit

123 gen switchtouncovered2 = F.switchtouncovered_treatment if nonadmin_everyear==1
  (99,515 missing values generated)

124 gen switchtocovered2 = F.switchtocovered_treatment if nonadmin_everyear==1
  (99,515 missing values generated)

125
126 ****************************************
```

```
127 * Quantiles for switchers into coverage
128
129 capture drop groups tocovered

130 xtile groups = percent_annualpay if percent_annualpay<=0.75 & switchtocovered2!=., n
  > (100)

131 * share of switchers by quantile
132 bysort groups posttreat2: egen tocovered = mean(switchtocovered2)

133
134 ****************************************
135 * Quantiles for switchers out of coverage
136
137 capture drop groups2 touncovered

138 xtile groups2 = percent_annualpay if percent_annualpay>0.75 & switchtouncovered2!=.,
  >  n(11)

139 * share of switchers by quantile
140 bysort groups2 posttreat2: egen touncovered = mean(switchtouncovered2)

141
142 lab def groups2 1 "75%" 2 "77%" 3 "80%" 4 "82%" 5 "84%" 6 "87%" 7 "90%" 8 "93%" 9 "9
  > 6%" 10 "97%" 11 "98%", modify

143 lab val groups2 groups2

144
145 lab def groups 82 "47%" 83 "48%" 84 "49%" 85 "50%" 86 "52%" 87 "53%" 88 "54%" 89 "55
  > %" 90 "56%" 91 "58%" 92 "59%" 93 "61%" 94 "62%" 95 "64%" 96 "65%" 97 "67%" 98 "69%"
  > 99 "71%" 100 "73%"

146 lab val groups groups

147
148 ****************************************
149 * Plot both
150
151 cibar switchtocovered2 if groups>=87, over1(posttreat2) over2(groups) barcol(gs6 gs1
  > 0) graphopts(legend(order(1 "Pre" 2 "Post")) graphregion(color(white)) fxsize(120) y
  > title("Share of switches to covered") xlabel(, labsize(vsmall)) name(share_tocovered
  > ))

152
153 cibar switchtouncovered2 if groups2<11, over1(posttreat2) over2(groups2) barcol(gs6
  > gs10) graphopts(legend(order(1 "Pre" 2 "Post")) graphregion(color(white)) fxsize(90)
  >  ytitle("Share of switches to uncovered") xlabel(, labsize(vsmall)) name(share_tounc
  > overed))

154
155 grc1leg share_tocovered share_touncovered, graphregion(color(white))

156
157
158
159
160
  end of do-file
```

```
161 do FIGURE4.do

162
163 /*******************************************************************************\
  > |    Title:              FIGURE4: McCrary density estimates by type of staffer,    |
  > |                                       before and after HLOGA
  >                                                |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                  |
  > \*******************************************************************************/
164
165
166 clear all

167 set more off, permanently
  (set more preference recorded)

168 numlabel, add
  (dataset has no value labels)

169 set maxvar 32000


170
171
172 *-------------------------------------------------------------------------------*
173 *                                                                 McCrary Test - Progr
  > am                                                *
174 *-------------------------------------------------------------------------------*
175
176 * The program to estimate McCrary density tests is adapted from Justin McCrary's sou
  > rce code: https://eml.berkeley.edu/~jmccrary/DCdensity/
177
178 capture program drop DCdensity

179 program DCdensity, rclass
    1. {
    2.   version 13.0
    3.   set more off
    4.   pause on
    5.   syntax varname(numeric) [if/] [in/], breakpoint(real) GENerate(string) ///
  >     [ b(real 0) h(real 0) at(string) graphname(string) noGRaph graphtitle(string)]
    6.
180   marksample touse
    7.
181   //Advanced user switch
182   //0 - supress auxiliary output  1 - display aux output
183   local verbose 1
    8.
184   //Bookkeeping before calling MATA function
185   //"running variable" in terminology of McCrary (2008)
186   local R "`varlist'"
    9.
187   tokenize `generate'
   10.   local wc : word count `generate'
   11.   if (`wc'!=5) {
   12.     //generate(Xj Yj r0 fhat se_fhat) is suggested
188     di "Specify names for five variables in generate option"
   13.     di "1. Name of variable in which to store cell midpoints of histogram"
   14.     di "2. Name of variable in which to store cell heights of histogram"
   15.     di "3. Name of variable in which to store evaluation sequence for local linea
  > r regression loop"
   16.     di "4. Name of variable in which to store local linear density estimate"
   17.     di "5. Name of variable in which to store standard error of local linear dens
  > ity estimate"
   18.     error 198
   19.   }
   20.   else {
   21.     local cellmpname = "`1'"
   22.     local cellvalname = "`2'"
```

```
   23.     local evalname = "`3'"
   24.     local cellsmname = "`4'"
   25.     local cellsmsename = "`5'"
   26.     confirm new var `1'
   27.     confirm new var `2'
   28.     capture confirm new var `3'
   29.     if (_rc!=0 & "`at'"!="`3'") error 198
   30.     confirm new var `4'
   31.     confirm new var `5'
   32.   }
   33.
189   //If the user does not specify the evaluation sequence, this it is taken to be the
  >  histogram midpoints
190   if ("`at'" == "") {
   34.     local at  = "`1'"
   35.   }
   36.
191   //Call MATA function
192   mata: DCdensitysub("`R'", "`touse'", `breakpoint', `b', `h', `verbose', "`cellmpna
  > me'", "`cellvalname'", ///
  >                     "`evalname'", "`cellsmname'", "`cellsmsename'", "`at'")
   37.
193   //Dump MATA return codes into STATA return codes
194   return scalar theta = r(theta)
   38.   return scalar se = r(se)
   39.   return scalar binsize = r(binsize)
   40.   return scalar bandwidth = r(bandwidth)
   41.
195   //if user wants the graph...
196   if ("`graph'"!="nograph") {
   42.         *local breakpoint 0.75
197         *local cellmpname Xj
198         *local cellvalname Yj
199         *local evalname r0
200         *local cellsmname fhat
201         *local cellsmsename se_fhat
202         *drop if `cellmpname' < 0 | `cellmpname' > 1
203         *drop if `evalname' < 0 | `evalname' > 1
204     tempvar hi
   43.     quietly gen `hi' = `cellsmname' + 1.96*`cellsmsename'
   44.     tempvar lo
   45.     quietly gen `lo' = `cellsmname' - 1.96*`cellsmsename'
   46.     gr twoway (scatter `cellvalname' `cellmpname', msymbol(circle_hollow) mcolor(
  > gray))           ///
  >       (line `cellsmname' `evalname' if `evalname' < `breakpoint', lcolor(black) lwid
  > th(medthick))   ///
  >         (line `cellsmname' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(medthick))   ///
  >           (line `hi' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth(v
  > thin))              ///
  >             (line `lo' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth
  > (vthin))              ///
  >               (line `hi' `evalname' if `evalname' > `breakpoint', lcolor(black) lwid
  > th(vthin))              ///
  >                 (line `lo' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(vthin)),             ///
  >                   xline(`breakpoint', lcolor(black)) legend(off) graphregion(color(w
  > hite)) ///
  >                                   xtitle("Share of member salary") ytitle("Density E
  > stimate") title("`graphtitle'", color(black) size(medsmall)) ttext(4.5 0.92 "75% thr
  > eshold", size(small))
   47.     if ("`graphname'"!="") {
   48.       di "Exporting graph as `graphname'"
   49.       graph save `graphname', replace
   50.           graph export `graphname'.png, replace
   51.     }
   52.   }
   53. }
   54. end
```

```
205
206
207 mata:
------------------------------------------------------- mata (type end to exit) -----------
: mata set matastrict on

:
: void DCdensitysub(string scalar runvar, string scalar tousevar, real scalar c, real
> scalar b, ///
>                   real scalar h, real scalar verbose, string scalar cellmpname, stri
> ng scalar cellvalname, ///
>                   string scalar evalname, string scalar cellsmname, string scalar ce
> llsmsename, ///
>                   string scalar atname) {
>   //   inputs: runvar - name of stata running variable ("R" in McCrary (2008))
>   //             tousevar - name of variable indicating which obs to use
>   //             c - point of potential discontinuity
>   //             b - bin size entered by user (zero if default is to be used)
>   //             h - bandwidth entered by user (zero if default is to be used)
>   //             verbose - flag for extra messages printing to screen
>   //             cellmpname - name of new variable that will hold the histogram cell
>  midpoints
>   //             cellvalname - name of new variable that will hold the histogram val
> ues
>   //             evalname - name of new variable that will hold locations where the
> histogram smoothing was
>   //                          evaluated
>   //             cellsmname - name of new variable that will hold the smoothed histo
> gram cell values
>   //             cellsmsename - name of new variable that will hold standard errors
> for smoothed histogram cells
>   //             atname - name of existing stata variable holding points at which to
>  eval smoothed histogram
>
>   //declarations for general use and histogram generation
>   real colvector run                                                  // stata running var
> iable
>   string scalar statacom                                              // string to hold st
> ata commands
>   real scalar errcode                                                 // scalar to hold re
> turn code for stata commands
>   real scalar rn, rsd, rmin, rmax, rp75, rp25, riqr                   // scalars for summa
> ry stats of running var
>   real scalar l, r                                                    // midpoint of lowes
> t bin and highest bin in histogram
>   real scalar lc, rc                                                  // midpoint of bin j
> ust left of and just right of breakpoint
>   real scalar j                                                       // number of bins sp
> anned by running var
>   real colvector binnum                                               // each obs bin numb
> er
>   real colvector cellval                                              // histogram cell va
> lues
>   real scalar i                                                       // counter
>   real scalar cellnum                                                 // cell value holder
>  for histogram generation
>   real colvector cellmp                                               // histogram cell mi
> dpoints
>   real scalar loopover                                                //DL: Declaring loop
> over?
>
>   //Set up histogram grid
>
>   st_view(run, ., runvar, tousevar)     //view of running variable--only observation
> s for which `touse'=1
>
>   //Get summary stats on running variable
>   statacom = "quietly summarize " + runvar + " if " + tousevar + ", det"
>   errcode=_stata(statacom,1)
>   if (errcode!=0) {
>     "Unable to successfully execute the command "+statacom
>     "Check whether you have given Stata enough memory"
```

```
>   }
>   rn = st_numscalar("r(N)")
>   rsd = st_numscalar("r(sd)")
>   rmin = st_numscalar("r(min)")
>   rmax = st_numscalar("r(max)")
>   rp75 = st_numscalar("r(p75)")
>   rp25 = st_numscalar("r(p25)")
>   riqr = rp75 - rp25
>
>   if ( (c<=rmin) | (c>=rmax) ) {
>     printf("Breakpoint must lie strictly within range of running variable\n")
>     _error(3498)
>   }
>
>   //set bin size to default in paper sec. III.B unless provided by the user
>   if (b == 0) {
>     b = 2*rsd*rn^(-1/2)
>     if (verbose) printf("Using default bin size calculation, bin size = %f\n", b)
>   }
>
>   //bookkeeping
>   l = floor((rmin-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   r = floor((rmax-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   lc = c-(b/2) // midpoint of bin just left of breakpoint
>   rc = c+(b/2) // midpoint of bin just right of breakpoint
>   j = floor((rmax-rmin)/b)+2
>
>   //create bin numbers corresponding to run... See McCrary (2008, eq 2)
>   binnum = round((((floor((run :- c):/b):*b:+b:/2:+c) :- l):/b) :+ 1)  // bin number
>  for each obs
>
>   //generate histogram
>   cellval = J(j,1,0)  // initialize cellval as j-vector of zeros
>   for (i = 1; i <= rn; i++) {
>     cellnum = binnum[i]
>     cellval[cellnum] = cellval[cellnum] + 1
>   }
>
>   cellval = cellval :/ rn  // convert counts into fractions
>   cellval = cellval :/ b  // normalize histogram to integrate to 1
>   cellmp = range(1,j,1)  // initialize cellmp as vector of integers from 1 to j
>   cellmp = floor(((l :+ (cellmp:-1):*b):-c):/b):*b:+b:/2:+c  // convert bin numbers
> into cell midpoints
>
>   //place histogram info into stata data set
>   real colvector stcellval                                          // stata view for ce
> ll value variable
>   real colvector stcellmp                                           // stata view for ce
> ll midpoint variable
>
>   (void) st_addvar("float", cellvalname)
>   st_view(stcellval, ., cellvalname)
>   (void) st_addvar("float", cellmpname)
>   st_view(stcellmp, ., cellmpname)
>   stcellval[|1\j|] = cellval
>   stcellmp[|1\j|] = cellmp
>
>   //Run 4th order global polynomial on histogram to get optimal bandwidth (if necess
> ary)
>   real matrix P                                                     // projection matrix
>  returned from orthpoly command
>   real matrix betaorth4                                             // coeffs from regre
> ssion of orthogonal powers of cellmp
>   real matrix beta4                                                 // coeffs from norma
> l regression of powers of cellmp
>   real scalar mse4                                                  // mean squared erro
> r from polynomial regression
>   real scalar hleft, hright                                         // bandwidth est fro
> m polynomial left of and right of breakpoint
>   real scalar leftofc, rightofc                                     // bin number just l
> eft of and just right of breakpoint
>   real colvector cellmpleft, cellmpright                            // cell midpoints le
```

```
> ft of and right of breakpoint
>   real colvector fppleft, fppright                                  // fit second deriv
> of hist left of and right of breakpoint
>
>   //only calculate optimal bandwidth if user hasn't provided one
>   if (h == 0) {
>     //separate cells left of and right of the cutoff
>     leftofc =  round((((floor((lc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just l
> eft of breakpoint
>     rightofc = round((((floor((rc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just r
> ight of breakpoint
>     if (rightofc-leftofc != 1) {
>       printf("Error occurred in optimal bandwidth calculation\n")
>       _error(3498)
>     }
>     cellmpleft = cellmp[|1\leftofc|]
>     cellmpright = cellmp[|rightofc\j|]
>
>     //estimate 4th order polynomial left of the cutoff
>     statacom = "orthpoly " + cellmpname + ", generate(" + cellmpname + "*) deg(4) po
> ly(P)"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " < " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppleft = 2*beta4[2] :+ 6*beta4[3]:*cellmpleft + 12*beta4[4]:*cellmpleft:^2
>     hleft = 3.348 * ( mse4*(c-l) / sum( fppleft:^2) )^(1/5)
>
>     //estimate 4th order polynomial right of the cutoff
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " > " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppright = 2*beta4[2] :+ 6*beta4[3]:*cellmpright + 12*beta4[4]:*cellmpright:^2
>     hright = 3.348 * ( mse4*(r-c) / sum( fppright:^2) )^(1/5)
>     statacom = "drop " + cellmpname + "1-" + cellmpname + "4"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>
>     //set bandwidth to average of calculations from left and right
>     h = 0.5*(hleft + hright)
>     if (verbose) printf("Using default bandwidth calculation, bandwidth = %f\n", h)
>   }
>
>   //Add padding zeros to histogram (to assist smoothing)
>   real scalar padzeros                                              // number of zeros t
> o pad on each side of hist
>   real scalar jp                                                    // number of histogr
> am bins including padded zeros
>
```

```
>   padzeros = ceil(h/b)  // number of zeros to pad on each side of hist
>   jp = j + 2*padzeros
>   if (padzeros >= 1) {
>     //add padding to histogram variables
>     cellval = ( J(padzeros,1,0) \ cellval \ J(padzeros,1,0) )
>     cellmp = ( range(l-padzeros*b,l-b,b) \ cellmp \ range(r+b,r+padzeros*b,b) )
>     //dump padded histogram variables out to stata
>     stcellval[|1\jp|] = cellval
>     stcellmp[|1\jp|] = cellmp
>   }
>
>   //Generate point estimate of discontinuity
>   real colvector dist                                          // distance from a g
> iven observation
>   real colvector w                                             // triangle kernel w
> eights
>   real matrix XX, Xy                                           // regression matrci
> es for weighted regression
>   real rowvector xmean, ymean                                  // means for demeani
> ng regression vars
>   real colvector beta                                          // regression estima
> tes from weighted reg.
>   real colvector ehat                                          // predicted errors
> from weighted reg.
>   real scalar fhatr, fhatl                                     // local linear reg.
>  estimates at discontinuity
>                                                                //   estimated from
> right and left, respectively
>   real scalar thetahat                                         // discontinuity est
> imate
>   real scalar sethetahat                                       // standard error of
>  discontinuity estimate
>
>   //Estimate left of discontinuity
>   dist = cellmp :- c  // distance from potential discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:<c)  // triangle kernel weig
> hts for left
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)    //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatl = beta[2,1]
>
>   //Estimate right of discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:>=c)  // triangle kernel wei
> ghts for right
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)   //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatr = beta[2,1]
>
>   //Calculate and display discontinuity estimate
>   thetahat = ln(fhatr) - ln(fhatl)
>   sethetahat = sqrt( (1/(rn*h)) * (24/5) * ((1/fhatr) + (1/fhatl)) )
>   printf("\nDiscontinuity estimate (log difference in height): %f\n", thetahat)
>   printf("                                                   (%f)\n", sethetahat)
>
>   loopover=1 //This is an advanced user switch to get rid of LLR smoothing
>   //Can be used to speed up simulation runs--the switch avoids smoothing at
>   //eval points you aren't studying
>
>   //Perform local linear regression (LLR) smoothing
>   if (loopover==1) {
```

```
>     real scalar cellsm                                          // smoothed histogra
> m cell values
>     real colvector stcellsm                                     // stata view for sm
> oothed values
>     real colvector atstata                                      // stata view for at
>  variable (evaluation points)
>     real colvector at                                           // points at which t
> o evaluate LLR smoothing
>     real scalar evalpts                                         // number of evaluat
> ion points
>     real colvector steval                                               // stata vie
> w for LLR smothing eval points
>
>     // if evaluating at cell midpoints
>     if (atname == cellmpname) {
>       at = cellmp[|padzeros+1\padzeros+j|]
>       evalpts = j
>     }
>     else {
>       st_view(atstata, ., atname)
>       evalpts = nonmissing(atstata)
>       at = atstata[|1\evalpts|]
>     }
>
>     if (verbose) printf("Performing LLR smoothing.\n")
>     if (verbose) printf("%f iterations will be performed \n",j)
>
>     cellsm = J(evalpts,1,0)  // initialize smoothed histogram cell values to zero
>     // loop over all evaluation points
>     for (i = 1; i <= evalpts; i++) {
>       dist = cellmp :- at[i]
>       //set weights relative to current bin - note comma below is row join operator,
>  not two separate args
>       w = rowmax( (J(jp,1,0), ///
>         (1:-abs(dist:/h))):*((cellmp:>=c)*(at[i]>=c):+(cellmp:<c):*(at[i]<c)) )
>       //manually obtain weighted regression coefficients
>       w = (w:/sum(w)) :* jp  // normalize weights to sum to N (as does stata aweight
> s)
>       xmean = mean(dist, w)
>       ymean = mean(cellval, w)
>       XX = quadcrossdev(dist,xmean,w,dist,xmean)  //fixed error on 11.17.2009
>       Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>       beta = invsym(XX)*Xy
>       beta = beta \ ymean-xmean*beta
>       cellsm[i] = beta[2,1]
>       //Show dots
>       if (verbose) {
>         if (mod(i,10) == 0) {
>           printf(".")
>           displayflush()
>           if (mod(i,500) == 0) {
>             printf(" %f LLR iterations\n",i)
>             displayflush()
>           }
>         }
>       }
>     }
>     printf("\n")
>
>     //set up stata variable to hold evaluation points for smoothed values
>     (void) st_addvar("float", evalname)
>     st_view(steval, ., evalname)
>     steval[|1\evalpts|] = at
>
>     //set up stata variable to hold smoothed values
>     (void) st_addvar("float", cellsmname)
>     st_view(stcellsm, ., cellsmname)
>     stcellsm[|1\evalpts|] = cellsm
>
>     //Calculate standard errors for LLR smoothed values
>     real scalar m                                       // amount of kernel being tr
> uncated by breakpoint
```

```
>     real colvector cellsmse                              // standard errors of smooth
> ed histogram
>     real colvector stcellsmse                            // stata view for cell midpo
> int variable
>     cellsmse = J(evalpts,1,0)  // initialize standard errors to zero
>     for (i = 1; i <= evalpts; i++) {
>       if (at[i] > c) {
>         m = max((-1, (c-at[i])/h))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2-3*m^11-24*m^10-83*m^9-72*m^8+42*m^7+18*m^6-18*m^5+18*m^4-3*m^3+18*m^2-1
> 5*m)/ ///
>             (1+m^6+6*m^5-3*m^4-4*m^3+9*m^2-6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>       if (at[i] < c) {
>         m = min(((c-at[i])/h, 1))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2+3*m^11-24*m^10+83*m^9-72*m^8-42*m^7+18*m^6+18*m^5+18*m^4-3*m^3+18*m^2+1
> 5*m)/ ///
>             (1+m^6-6*m^5-3*m^4+4*m^3+9*m^2+6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>     }
>     //set up stata variable to hold standard errors for smoothed values
>     (void) st_addvar("float", cellsmsename)
>     st_view(stcellsmse, ., cellsmsename)
>     stcellsmse[|1\evalpts|] = cellsmse
>   }
>   //End of loop over evaluation points
>
>   //Fill in STATA return codes
>   st_rclear()
>   st_numscalar("r(theta)", thetahat)
>   st_numscalar("r(se)", sethetahat)
>   st_numscalar("r(binsize)", b)
>   st_numscalar("r(bandwidth)", h)
> }
note: variable run may be used before set
note: variable stcellval may be used before set
note: variable stcellmp may be used before set
note: variable stcellsm may be used before set
note: variable atstata may be used before set
note: variable steval may be used before set
note: variable stcellsmse may be used before set
note: variable riqr set but not used
note: variable ehat unused

: end
```

```
*------------------------------------------------------------------------------*
*                                                McCrary test by group of staffers
>                                        *
*------------------------------------------------------------------------------*

use congress_yearly.dta, clear
```

```
216 **** for specific staffers: especially, committee staffers, senate staffers, majorit
  > y party staffers
217 drop posttreat

218 gen posttreat = "Pre"

219 replace posttreat = "Post" if year>2007
  variable posttreat was str3 now str4
  (168,677 real changes made)

220
221 gen treat_x=.
  (304,566 missing values generated)

222 gen treat_b=.
  (304,566 missing values generated)

223 gen treat_se=.
  (304,566 missing values generated)

224
225
226 ***************
227 ** Committee vs. personal staffer
228
229 preserve

230 foreach var in committeestaff_everyear personalstaff_everyear  {
    2.          DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.          replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.          replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.          drop Xj Yj r0 fhat se_fhat
    6.          DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.          replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.          replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.          drop Xj Yj r0 fhat se_fhat
   10. }
  Using default bin size calculation, bin size = .003050357
  Using default bandwidth calculation, bandwidth = .117423814

  Discontinuity estimate (log difference in height): -.145598039
                                                     (.049544058)
  Performing LLR smoothing.
  329 iterations will be performed
  ..............................
  (27,961 real changes made)
  (27,961 real changes made)
  Using default bin size calculation, bin size = .003375073
  Using default bandwidth calculation, bandwidth = .127330106

  Discontinuity estimate (log difference in height): -.043199882
                                                     (.05664481)
  Performing LLR smoothing.
  297 iterations will be performed
  ............................
  (21,558 real changes made)
  (21,558 real changes made)
  Using default bin size calculation, bin size = .001113663
  Using default bandwidth calculation, bandwidth = .086536508
```

```
  Discontinuity estimate (log difference in height): -.091150907
                                                     (.056678992)
  Performing LLR smoothing.
  899 iterations will be performed
  ..................................................  500 LLR iterations
  ....................................
  (120,844 real changes made)
  (120,844 real changes made)
  Using default bin size calculation, bin size = .001173075
  Using default bandwidth calculation, bandwidth = .082809562

  Discontinuity estimate (log difference in height): -.103577185
                                                     (.0743237)
  Performing LLR smoothing.
  854 iterations will be performed
  ..................................................  500 LLR iterations
  ................................
  (95,861 real changes made)
  (95,861 real changes made)

231         gen high = treat_b + 1.96 * treat_se
  (49,141 missing values generated)

232         gen low = treat_b - 1.96 * treat_se
  (49,141 missing values generated)

233
234         replace treat_x = -2 if committeestaff_everyear==1
  (49,519 real changes made)

235         replace treat_x = 2 if personalstaff_everyear==1
  (216,705 real changes made)

236         label define cat -2 "   Committee" 2 "   Personal"

237         label values treat_x cat

238
239         collapse treat_b high low, by(posttreat treat_x)

240         lab def posttreat_lab 1 "Pre" 2 "Post"

241         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

242
243 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white)  margin(
  > small)) note("") title("Committee" "vs. Personal", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(mccraryest_committeepersonal))

244 restore

245
246 ***************
247 ** Senate vs. House
248
```

```
249 preserve

250 foreach var in senate_everyear house_everyear  {
    2.         DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.         replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.         replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.         drop Xj Yj r0 fhat se_fhat
    6.         DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.         replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.         replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.         drop Xj Yj r0 fhat se_fhat
   10. }
Using default bin size calculation, bin size = .001725707
Using default bandwidth calculation, bandwidth = .099103024

Discontinuity estimate (log difference in height): -.237928925
                                                   (.05023471)
Performing LLR smoothing.
580 iterations will be performed
.................................................. 500 LLR iterations
........
(70,490 real changes made)
(70,490 real changes made)
Using default bin size calculation, bin size = .001793629
Using default bandwidth calculation, bandwidth = .087683906

Discontinuity estimate (log difference in height): .008218797
                                                   (.074139865)
Performing LLR smoothing.
559 iterations will be performed
.................................................. 500 LLR iterations
.....
(56,560 real changes made)
(56,560 real changes made)
Using default bin size calculation, bin size = .001413646
Using default bandwidth calculation, bandwidth = .096133688

Discontinuity estimate (log difference in height): -.105920429
                                                   (.044901847)
Performing LLR smoothing.
709 iterations will be performed
.................................................. 500 LLR iterations
.....................
(101,753 real changes made)
(101,753 real changes made)
Using default bin size calculation, bin size = .001451459
Using default bandwidth calculation, bandwidth = .095660909

Discontinuity estimate (log difference in height): .019763025
                                                   (.056684902)
Performing LLR smoothing.
690 iterations will be performed
.................................................. 500 LLR iterations
...................
(83,809 real changes made)
(83,809 real changes made)
```

```
251         gen high = treat_b + 1.96 * treat_se

252         gen low = treat_b - 1.96 * treat_se

253
254         replace treat_x = -2 if senate_everyear==1
  (127,050 real changes made)

255         replace treat_x = 2 if house_everyear==1
  (185,562 real changes made)

256         label define cat -2 "       Senate" 2 "       House"

257         label values treat_x cat

258
259         collapse treat_b high low, by(posttreat treat_x)

260         lab def posttreat_lab 1 "Pre" 2 "Post"

261         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

262
263 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white) margin(s
  > mall)) note("") title("Senate" "vs. House", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(mccraryest_senatehouse))

264 restore

265
266
267 ***************
268 ** DC office vs. district
269
270
271 preserve

272 foreach var in dcoffice_everyear district_everyear  {
    2.         DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.         replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.         replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.         drop Xj Yj r0 fhat se_fhat
    6.         DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.         replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.         replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.         drop Xj Yj r0 fhat se_fhat
   10. }
  Using default bin size calculation, bin size = .00138473
  Using default bandwidth calculation, bandwidth = .089556565

  Discontinuity estimate (log difference in height): -.131226013
                                                     (.059967799)
  Performing LLR smoothing.
  723 iterations will be performed
  ..................................................... 500 LLR iterations
  ......................
  (88,766 real changes made)
  (88,766 real changes made)
  Using default bin size calculation, bin size = .001386271
  Using default bandwidth calculation, bandwidth = .083941214
```

```
Discontinuity estimate (log difference in height): -.098637148
                                                   (.076634844)
Performing LLR smoothing.
723 iterations will be performed
.................................................. 500 LLR iterations
.....................
(75,870 real changes made)
(75,870 real changes made)
Using default bin size calculation, bin size = .001609415
Using default bandwidth calculation, bandwidth = .092201097

Discontinuity estimate (log difference in height): .104871331
                                                   (.143985096)
Performing LLR smoothing.
621 iterations will be performed
.................................................. 500 LLR iterations
............
(34,684 real changes made)
(34,684 real changes made)
Using default bin size calculation, bin size = .001795354
Using default bandwidth calculation, bandwidth = .094389601

Discontinuity estimate (log difference in height): -.20018566
                                                   (.23846507)
Performing LLR smoothing.
558 iterations will be performed
.................................................. 500 LLR iterations
.....
(23,756 real changes made)
(23,756 real changes made)

273         gen high = treat_b + 1.96 * treat_se
  (88,135 missing values generated)

274         gen low = treat_b - 1.96 * treat_se
  (88,135 missing values generated)

275
276         replace treat_x = -2 if dcoffice_everyear==1
  (164,636 real changes made)

277         replace treat_x = 2 if district_everyear==1
  (58,440 real changes made)

278         label define cat -2 "DC" 2 "District"

279         label values treat_x cat

280         collapse treat_b high low, by(posttreat treat_x)

281
282         lab def posttreat_lab 1 "Pre" 2 "Post"

283         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

284
285 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white)  margin(
  > small)) note("") title("DC vs." "District Office", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(mccraryest_district))
```

```
286 restore

287
288
289
290 graph combine mccraryest_committeepersonal mccraryest_district mccraryest_senatehous
  > e, ///
  >         rows(1) graphregion(color(white)) ycommon l1("McCrary estimate (jump in log
  > density at threshold)", size(small))

291
292
293
294
295
296
297
298
299
  end of do-file

300 do FIGURE5.do

301
302 /*******************************************************************************\
  > |    Title:              FIGURE5: Average marginal effects of being a switcher on  |
  > |                                        log lobbying revenue, by year since leaving
  >  Congress      |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                  |
  > \*******************************************************************************/
303
304
305 clear all

306 set more off, permanently
  (set more preference recorded)

307 numlabel, add
  (dataset has no value labels)

308 set maxvar 32000


309
310
311 use lobbyist_yearly.dta, clear

312
313 reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving experience_imp daysworked commi
  > tteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority
  > _everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  > if posttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(41, 404)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.1056
                                                  Root MSE          =     1.9734
```

(Std. Err. adjusted for **405** clusters in staf
> ferid)

| log_adjlobrev_wgt | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. Int
> erval] |
|---|---|---|---|---|---|
| 1.switcher | **.7743821** | **.310327** | **2.50** | **0.013** | **.1643247** | **1.
> 384439** |
| yearsinceleaving | | | | | | |
| 1 | **.7652152** | **.1393602** | **5.49** | **0.000** | **.4912536** | **1.
> 039177** |
| 2 | **1.132831** | **.1965511** | **5.76** | **0.000** | **.7464407** | **1.
> 519222** |
| 3 | **1.310675** | **.1950058** | **6.72** | **0.000** | **.9273225** | **1.
> 694028** |
| 4 | **1.400068** | **.203687** | **6.87** | **0.000** | **.9996493** | **1.
> 800487** |
| 5 | **1.298969** | **.2417884** | **5.37** | **0.000** | **.8236486** | **1
> .77429** |
| 6 | **1.268645** | **.2991897** | **4.24** | **0.000** | **.6804821** | **1.
> 856808** |
| 7 | **1.307849** | **.2963251** | **4.41** | **0.000** | **.725317** | **1.
> 890381** |
| 8 | **1.14263** | **.3954257** | **2.89** | **0.004** | **.3652807** | **1.
> 919979** |
| 9 | **.6826737** | **.645468** | **1.06** | **0.291** | **-.5862216** | **1.
> 951569** |
| 10 | **.6351896** | **.8001693** | **0.79** | **0.428** | **-.9378259** | **2.
> 208205** |
| 11 | **1.696582** | **.3649839** | **4.65** | **0.000** | **.9790775** | **2.
> 414087** |
| switcher#yearsinceleaving | | | | | | |
| 1 1 | **-.1244956** | **.308952** | **-0.40** | **0.687** | **-.7318498** | **.4
> 828586** |
| 1 2 | **-.6354567** | **.4523677** | **-1.40** | **0.161** | **-1.524745** | **.2
> 538318** |
| 1 3 | **-.7426255** | **.3773962** | **-1.97** | **0.050** | **-1.484531** | **-.0
> 007199** |
| 1 4 | **-.6386081** | **.4171402** | **-1.53** | **0.127** | **-1.458645** | **.1
> 814284** |
| 1 5 | **-.6719665** | **.581302** | **-1.16** | **0.248** | **-1.814721** | **.4
> 707878** |
| 1 6 | **-.7665104** | **.6583614** | **-1.16** | **0.245** | **-2.060752** | **.5
> 277316** |
| 1 7 | **-1.505617** | **.8471414** | **-1.78** | **0.076** | **-3.170972** | **.
> 159739** |
| 1 8 | **-.8125771** | **.6226187** | **-1.31** | **0.193** | **-2.036554** | |
> **.4114** |
| 1 9 | **-1.044144** | **.7319449** | **-1.43** | **0.154** | **-2.48304** | **.3
> 947527** |
| 1 10 | **0** | (empty) | | | | |
| 1 11 | **0** | (empty) | | | | |
| experience_imp | **.0042582** | **.0134941** | **0.32** | **0.753** | **-.0222693** | **.0
> 307856** |
| daysworked | **-.00041** | **.0006009** | **-0.68** | **0.495** | **-.0015914** | **.0
> 007713** |
| committeestaff_everyear | **.1280155** | **.2315481** | **0.55** | **0.581** | **-.3271742** | **.5
> 832051** |
| personalstaff_everyear | **-3.861265** | **1.845046** | **-2.09** | **0.037** | **-7.488355** | **-.2
> 341751** |
| senate_everyear | **.2231129** | **.1964682** | **1.14** | **0.257** | **-.1631148** | **.6
> 093406** |
| majority_everyear | **.3000865** | **.2839505** | **1.06** | **0.291** | **-.2581185** | **.8
> 582914** |
| minority_everyear | **-.2098195** | **.314078** | **-0.67** | **0.504** | **-.8272508** | **.4
> 076118** |

dcoffice_everyear	4.152848	1.818205	2.28	0.023	.5785231	7.727173
leaderofficestaff_everyear	.9176968	.3068637	2.99	0.003	.3144478	1.520946
log_max_adjannual_pay	.4677493	.2878962	1.62	0.105	-.0982124	1.033711
year						
2008	1.094117	.84951	1.29	0.199	-.5758948	2.764129
2009	.7818297	.8512573	0.92	0.359	-.8916173	2.455277
2010	.6040316	.8268525	0.73	0.465	-1.021439	2.229502
2011	.5690361	.8044738	0.71	0.480	-1.012441	2.150514
2012	.6477616	.7940539	0.82	0.415	-.9132318	2.208755
2013	.6027523	.8016062	0.75	0.453	-.9730879	2.178592
2014	.6779792	.7960367	0.85	0.395	-.8869121	2.242871
2015	.8488974	.8035123	1.06	0.291	-.7306898	2.428485
2016	.7637775	.8106912	0.94	0.347	-.8299225	2.357477
2017	.6644946	.8203156	0.81	0.418	-.9481255	2.277115
2018	.9557598	.8350274	1.14	0.253	-.6857816	2.597301
_cons	4.730959	3.504232	1.35	0.178	-2.157846	11.61976

```
314
315 margins if yearsinceleaving<8, dydx(i.switcher) over(i.yearsinceleaving)

Average marginal effects                        Number of obs     =      1,818
Model VCE    : Robust

Expression   : Linear prediction, predict()
dy/dx w.r.t. : 1.switcher
over         : yearsinceleaving
```

	dy/dx	Delta-method Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher	(base outcome)					
1.switcher						
yearsinceleaving						
0	.7743821	.310327	2.50	0.013	.1643247	1.384439
1	.6498865	.2554583	2.54	0.011	.1476928	1.15208
2	.1389254	.3228972	0.43	0.667	-.4958431	.7736938
3	.0317566	.3587112	0.09	0.929	-.6734169	.7369301
4	.135774	.2998814	0.45	0.651	-.4537489	.7252969
5	.1024156	.4915871	0.21	0.835	-.8639725	1.068804
6	.0078717	.6010696	0.01	0.990	-1.173743	1.189486
7	-.7312345	.8166029	-0.90	0.371	-2.336556	.8740869

Note: dy/dx for factor levels is the discrete change from the base level.

```
316
317 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect
  >  estimate for being a switcher") title("") xtitle("Year since leaving Congress")

    Variables that uniquely identify margins: yearsinceleaving

318
319 ** for substantive interpretation
320 reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving experience_imp daysworked commi
  > tteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority
  > _everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  > if posttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(41, 404)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.1056
                                                  Root MSE          =     1.9734

                                                (Std. Err. adjusted for 405 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
               |               Robust
  log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  -------------+----------------------------------------------------------------
      1.switcher |   .7743821    .310327     2.50   0.013     .1643247    1.
  > 384439
                 |
   yearsinceleaving |
                1 |   .7652152   .1393602     5.49   0.000     .4912536    1.
  > 039177
                2 |   1.132831   .1965511     5.76   0.000     .7464407    1.
  > 519222
                3 |   1.310675   .1950058     6.72   0.000     .9273225    1.
  > 694028
                4 |   1.400068    .203687     6.87   0.000     .9996493    1.
  > 800487
                5 |   1.298969   .2417884     5.37   0.000     .8236486     1
  > .77429
                6 |   1.268645   .2991897     4.24   0.000     .6804821    1.
  > 856808
                7 |   1.307849   .2963251     4.41   0.000      .725317    1.
  > 890381
                8 |    1.14263   .3954257     2.89   0.004     .3652807    1.
  > 919979
                9 |   .6826737    .645468     1.06   0.291    -.5862216    1.
  > 951569
               10 |   .6351896   .8001693     0.79   0.428    -.9378259    2.
  > 208205
               11 |   1.696582   .3649839     4.65   0.000     .9790775    2.
  > 414087
                 |
  switcher#yearsinceleaving |
              1  1 |  -.1244956    .308952    -0.40   0.687    -.7318498    .4
  > 828586
              1  2 |  -.6354567   .4523677    -1.40   0.161    -1.524745    .2
  > 538318
              1  3 |  -.7426255   .3773962    -1.97   0.050    -1.484531   -.0
  > 007199
              1  4 |  -.6386081   .4171402    -1.53   0.127    -1.458645    .1
  > 814284
              1  5 |  -.6719665    .581302    -1.16   0.248    -1.814721    .4
  > 707878
              1  6 |  -.7665104   .6583614    -1.16   0.245    -2.060752    .5
  > 277316
              1  7 |  -1.505617   .8471414    -1.78   0.076    -3.170972     .
```

1 8	-.8125771	.6226187	-1.31	0.193	-2.036554	.4114
1 9	-1.044144	.7319449	-1.43	0.154	-2.48304	.3947527
1 10	0	(empty)				
1 11	0	(empty)				
experience_imp	.0042582	.0134941	0.32	0.753	-.0222693	.0307856
daysworked	-.00041	.0006009	-0.68	0.495	-.0015914	.0007713
committeestaff_everyear	.1280155	.2315481	0.55	0.581	-.3271742	.5832051
personalstaff_everyear	-3.861265	1.845046	-2.09	0.037	-7.488355	-.2341751
senate_everyear	.2231129	.1964682	1.14	0.257	-.1631148	.6093406
majority_everyear	.3000865	.2839505	1.06	0.291	-.2581185	.8582914
minority_everyear	-.2098195	.314078	-0.67	0.504	-.8272508	.4076118
dcoffice_everyear	4.152848	1.818205	2.28	0.023	.5785231	7.727173
leaderofficestaff_everyear	.9176968	.3068637	2.99	0.003	.3144478	1.520946
log_max_adjannual_pay	.4677493	.2878962	1.62	0.105	-.0982124	1.033711
year						
2008	1.094117	.84951	1.29	0.199	-.5758948	2.764129
2009	.7818297	.8512573	0.92	0.359	-.8916173	2.455277
2010	.6040316	.8268525	0.73	0.465	-1.021439	2.229502
2011	.5690361	.8044738	0.71	0.480	-1.012441	2.150514
2012	.6477616	.7940539	0.82	0.415	-.9132318	2.208755
2013	.6027523	.8016062	0.75	0.453	-.9730879	2.178592
2014	.6779792	.7960367	0.85	0.395	-.8869121	2.242871
2015	.8488974	.8035123	1.06	0.291	-.7306898	2.428485
2016	.7637775	.8106912	0.94	0.347	-.8299225	2.357477
2017	.6644946	.8203156	0.81	0.418	-.9481255	2.277115
2018	.9557598	.8350274	1.14	0.253	-.6857816	2.597301
_cons	4.730959	3.504232	1.35	0.178	-2.157846	11.61976

321 margins switcher if yearsinceleaving<8, over(i.yearsinceleaving)

Predictive margins Number of obs = 1,818
Model VCE : **Robust**

Expression : **Linear prediction, predict()**
over : **yearsinceleaving**

	Delta-method Margin	Std. Err.	t	P>|t|	[95% Conf.	Inte
yearsinceleaving#switcher						
0 0	11.49814	.1651746	69.61	0.000	11.17343	11.
0 1	12.27252	.2574724	47.67	0.000	11.76637	12.
1 0	12.17192	.1141309	106.65	0.000	11.94755	12.
1 1	12.8218	.2281734	56.19	0.000	12.37325	13.
2 0	12.57224	.1096431	114.67	0.000	12.35669	12.
2 1	12.71116	.2995733	42.43	0.000	12.12224	13.
3 0	12.78896	.1163189	109.95	0.000	12.5603	13.
3 1	12.82072	.3259315	39.34	0.000	12.17999	13.
4 0	12.92487	.1027944	125.74	0.000	12.7228	13.
4 1	13.06065	.2803755	46.58	0.000	12.50947	13.
5 0	12.84531	.1397614	91.91	0.000	12.57056	13.
5 1	12.94772	.4660799	27.78	0.000	12.03148	13.
6 0	12.77834	.201808	63.32	0.000	12.38161	13.
6 1	12.78621	.54677	23.38	0.000	11.71134	13.
7 0	12.88495	.1634633	78.82	0.000	12.5636	13.
7 1	12.15372	.7998733	15.19	0.000	10.58128	13.

```
322
  end of do-file

323 do FIGUREF1.do

324
325 /*****************************************************************************\
  > |    Title:              FIGUREE1: McCrary density estimates, by staffer covars    |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*****************************************************************************/
326
327
328 clear all
```

```
set more off, permanently
(set more preference recorded)

numlabel, add
(dataset has no value labels)

set maxvar 32000



*------------------------------------------------------------------------------*
*                                                                McCrary Test - Progr
> am                                                *
*------------------------------------------------------------------------------*

* The program to estimate McCrary density tests is adapted from Justin McCrary's sou
> rce code: https://eml.berkeley.edu/~jmccrary/DCdensity/

capture program drop DCdensity

program DCdensity, rclass
  1. {
  2.   version 13.0
  3.   set more off
  4.   pause on
  5.   syntax varname(numeric) [if/] [in/], breakpoint(real) GENerate(string) ///
>     [ b(real 0) h(real 0) at(string) graphname(string) noGRaph graphtitle(string)]
  6.
  marksample touse
  7.
  //Advanced user switch
  //0 - supress auxiliary output  1 - display aux output
  local verbose 1
  8.
  //Bookkeeping before calling MATA function
  //"running variable" in terminology of McCrary (2008)
  local R "`varlist'"
  9.
  tokenize `generate'
  10.   local wc : word count `generate'
  11.   if (`wc'!=5) {
  12.     //generate(Xj Yj r0 fhat se_fhat) is suggested
     di "Specify names for five variables in generate option"
  13.     di "1. Name of variable in which to store cell midpoints of histogram"
  14.     di "2. Name of variable in which to store cell heights of histogram"
  15.     di "3. Name of variable in which to store evaluation sequence for local linea
> r regression loop"
  16.     di "4. Name of variable in which to store local linear density estimate"
  17.     di "5. Name of variable in which to store standard error of local linear dens
> ity estimate"
  18.     error 198
  19.   }
  20.   else {
  21.     local cellmpname = "`1'"
  22.     local cellvalname = "`2'"
  23.     local evalname = "`3'"
  24.     local cellsmname = "`4'"
  25.     local cellsmsename = "`5'"
  26.     confirm new var `1'
  27.     confirm new var `2'
  28.     capture confirm new var `3'
  29.     if (_rc!=0 & "`at'"!="`3'") error 198
  30.     confirm new var `4'
  31.     confirm new var `5'
  32.   }
  33.
```

```
351   //If the user does not specify the evaluation sequence, this it is taken to be the
  >  histogram midpoints
352   if ("`at'" == "") {
   34.     local at  = "`1'"
   35.   }
   36.
353   //Call MATA function
354   mata: DCdensitysub("`R'", "`touse'", `breakpoint', `b', `h', `verbose', "`cellmpna
  > me'", "`cellvalname'", ///
  >                     "`evalname'", "`cellsmname'", "`cellsmsename'", "`at'")
   37.
355   //Dump MATA return codes into STATA return codes
356   return scalar theta = r(theta)
   38.   return scalar se = r(se)
   39.   return scalar binsize = r(binsize)
   40.   return scalar bandwidth = r(bandwidth)
   41.
357   //if user wants the graph...
358   if ("`graph'"!="nograph") {
   42.         *local breakpoint 0.75
359         *local cellmpname Xj
360         *local cellvalname Yj
361         *local evalname r0
362         *local cellsmname fhat
363         *local cellsmsename se_fhat
364         *drop if `cellmpname' < 0 | `cellmpname' > 1
365         *drop if `evalname' < 0 | `evalname' > 1
366     tempvar hi
   43.     quietly gen `hi' = `cellsmname' + 1.96*`cellsmsename'
   44.     tempvar lo
   45.     quietly gen `lo' = `cellsmname' - 1.96*`cellsmsename'
   46.     gr twoway (scatter `cellvalname' `cellmpname', msymbol(circle_hollow) mcolor(
  > gray))           ///
  >       (line `cellsmname' `evalname' if `evalname' < `breakpoint', lcolor(black) lwid
  > th(medthick))   ///
  >         (line `cellsmname' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(medthick))   ///
  >           (line `hi' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth(v
  > thin))              ///
  >             (line `lo' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth
  > (vthin))              ///
  >               (line `hi' `evalname' if `evalname' > `breakpoint', lcolor(black) lwid
  > th(vthin))              ///
  >                 (line `lo' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(vthin)),           ///
  >                   xline(`breakpoint', lcolor(black)) legend(off) graphregion(color(w
  > hite)) ///
  >                                   xtitle("Share of member salary") ytitle("Density E
  > stimate") title("`graphtitle'", color(black) size(medsmall)) ttext(4.5 0.92 "75% thr
  > eshold", size(small))
   47.     if ("`graphname'"!="") {
   48.       di "Exporting graph as `graphname'"
   49.       graph save `graphname', replace
   50.           graph export `graphname'.png, replace
   51.     }
   52.   }
   53. }
   54. end

367
```

```
mata:
──────────────────────────────────────────────────── mata (type end to exit) ──────────────
: mata set matastrict on

:
: void DCdensitysub(string scalar runvar, string scalar tousevar, real scalar c, real
> scalar b, ///
>                   real scalar h, real scalar verbose, string scalar cellmpname, stri
> ng scalar cellvalname, ///
>                   string scalar evalname, string scalar cellsmname, string scalar ce
> llsmsename, ///
>                   string scalar atname) {
>   //   inputs: runvar - name of stata running variable ("R" in McCrary (2008))
>   //             tousevar - name of variable indicating which obs to use
>   //             c - point of potential discontinuity
>   //             b - bin size entered by user (zero if default is to be used)
>   //             h - bandwidth entered by user (zero if default is to be used)
>   //             verbose - flag for extra messages printing to screen
>   //             cellmpname - name of new variable that will hold the histogram cell
>  midpoints
>   //             cellvalname - name of new variable that will hold the histogram val
> ues
>   //             evalname - name of new variable that will hold locations where the
> histogram smoothing was
>   //                         evaluated
>   //             cellsmname - name of new variable that will hold the smoothed histo
> gram cell values
>   //             cellsmsename - name of new variable that will hold standard errors
> for smoothed histogram cells
>   //             atname - name of existing stata variable holding points at which to
>  eval smoothed histogram
>
>   //declarations for general use and histogram generation
>   real colvector run                                              // stata running var
> iable
>   string scalar statacom                                          // string to hold st
> ata commands
>   real scalar errcode                                             // scalar to hold re
> turn code for stata commands
>   real scalar rn, rsd, rmin, rmax, rp75, rp25, riqr               // scalars for summa
> ry stats of running var
>   real scalar l, r                                                // midpoint of lowes
> t bin and highest bin in histogram
>   real scalar lc, rc                                              // midpoint of bin j
> ust left of and just right of breakpoint
>   real scalar j                                                   // number of bins sp
> anned by running var
>   real colvector binnum                                           // each obs bin numb
> er
>   real colvector cellval                                          // histogram cell va
> lues
>   real scalar i                                                   // counter
>   real scalar cellnum                                             // cell value holder
>  for histogram generation
>   real colvector cellmp                                           // histogram cell mi
> dpoints
>   real scalar loopover                                            //DL: Declaring loop
> over?
>
>   //Set up histogram grid
>
>   st_view(run, ., runvar, tousevar)     //view of running variable--only observation
> s for which `touse'=1
>
>   //Get summary stats on running variable
>   statacom = "quietly summarize " + runvar + " if " + tousevar + ", det"
>   errcode=_stata(statacom,1)
>   if (errcode!=0) {
>     "Unable to successfully execute the command "+statacom
>     "Check whether you have given Stata enough memory"
>   }
```

```
>   rn = st_numscalar("r(N)")
>   rsd = st_numscalar("r(sd)")
>   rmin = st_numscalar("r(min)")
>   rmax = st_numscalar("r(max)")
>   rp75 = st_numscalar("r(p75)")
>   rp25 = st_numscalar("r(p25)")
>   riqr = rp75 - rp25
>
>   if ( (c<=rmin) | (c>=rmax) ) {
>     printf("Breakpoint must lie strictly within range of running variable\n")
>     _error(3498)
>   }
>
>   //set bin size to default in paper sec. III.B unless provided by the user
>   if (b == 0) {
>     b = 2*rsd*rn^(-1/2)
>     if (verbose) printf("Using default bin size calculation, bin size = %f\n", b)
>   }
>
>   //bookkeeping
>   l = floor((rmin-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   r = floor((rmax-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   lc = c-(b/2) // midpoint of bin just left of breakpoint
>   rc = c+(b/2) // midpoint of bin just right of breakpoint
>   j = floor((rmax-rmin)/b)+2
>
>   //create bin numbers corresponding to run... See McCrary (2008, eq 2)
>   binnum = round((((floor((run :- c):/b):*b:+b:/2:+c) :- l):/b) :+ 1)  // bin number
>  for each obs
>
>   //generate histogram
>   cellval = J(j,1,0)  // initialize cellval as j-vector of zeros
>   for (i = 1; i <= rn; i++) {
>     cellnum = binnum[i]
>     cellval[cellnum] = cellval[cellnum] + 1
>   }
>
>   cellval = cellval :/ rn  // convert counts into fractions
>   cellval = cellval :/ b  // normalize histogram to integrate to 1
>   cellmp = range(1,j,1)  // initialize cellmp as vector of integers from 1 to j
>   cellmp = floor(((l :+ (cellmp:-1):*b):-c):/b):*b:+b:/2:+c  // convert bin numbers
> into cell midpoints
>
>   //place histogram info into stata data set
>   real colvector stcellval                                    // stata view for ce
> ll value variable
>   real colvector stcellmp                                     // stata view for ce
> ll midpoint variable
>
>   (void) st_addvar("float", cellvalname)
>   st_view(stcellval, ., cellvalname)
>   (void) st_addvar("float", cellmpname)
>   st_view(stcellmp, ., cellmpname)
>   stcellval[|1\j|] = cellval
>   stcellmp[|1\j|] = cellmp
>
>   //Run 4th order global polynomial on histogram to get optimal bandwidth (if necess
> ary)
>   real matrix P                                               // projection matrix
>  returned from orthpoly command
>   real matrix betaorth4                                       // coeffs from regre
> ssion of orthogonal powers of cellmp
>   real matrix beta4                                           // coeffs from norma
> l regression of powers of cellmp
>   real scalar mse4                                            // mean squared erro
> r from polynomial regression
>   real scalar hleft, hright                                   // bandwidth est fro
> m polynomial left of and right of breakpoint
>   real scalar leftofc, rightofc                               // bin number just l
> eft of and just right of breakpoint
>   real colvector cellmpleft, cellmpright                      // cell midpoints le
> ft of and right of breakpoint
```

```
>   real colvector fppleft, fppright                                // fit second deriv
> of hist left of and right of breakpoint
>
>   //only calculate optimal bandwidth if user hasn't provided one
>   if (h == 0) {
>     //separate cells left of and right of the cutoff
>     leftofc =  round((((floor((lc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just l
> eft of breakpoint
>     rightofc = round((((floor((rc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just r
> ight of breakpoint
>     if (rightofc-leftofc != 1) {
>       printf("Error occurred in optimal bandwidth calculation\n")
>       _error(3498)
>     }
>     cellmpleft = cellmp[|1\leftofc|]
>     cellmpright = cellmp[|rightofc\j|]
>
>     //estimate 4th order polynomial left of the cutoff
>     statacom = "orthpoly " + cellmpname + ", generate(" + cellmpname + "*) deg(4) po
> ly(P)"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " < " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppleft = 2*beta4[2] :+ 6*beta4[3]:*cellmpleft + 12*beta4[4]:*cellmpleft:^2
>     hleft = 3.348 * ( mse4*(c-l) / sum( fppleft:^2) )^(1/5)
>
>     //estimate 4th order polynomial right of the cutoff
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " > " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppright = 2*beta4[2] :+ 6*beta4[3]:*cellmpright + 12*beta4[4]:*cellmpright:^2
>     hright = 3.348 * ( mse4*(r-c) / sum( fppright:^2) )^(1/5)
>     statacom = "drop " + cellmpname + "1-" + cellmpname + "4"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>
>     //set bandwidth to average of calculations from left and right
>     h = 0.5*(hleft + hright)
>     if (verbose) printf("Using default bandwidth calculation, bandwidth = %f\n", h)
>   }
>
>   //Add padding zeros to histogram (to assist smoothing)
>   real scalar padzeros                                            // number of zeros t
> o pad on each side of hist
>   real scalar jp                                                  // number of histogr
> am bins including padded zeros
>
>   padzeros = ceil(h/b)  // number of zeros to pad on each side of hist
```

```
>   jp = j + 2*padzeros
>   if (padzeros >= 1) {
>     //add padding to histogram variables
>     cellval = ( J(padzeros,1,0) \ cellval \ J(padzeros,1,0) )
>     cellmp = ( range(1-padzeros*b,1-b,b) \ cellmp \ range(r+b,r+padzeros*b,b) )
>     //dump padded histogram variables out to stata
>     stcellval[|1\jp|] = cellval
>     stcellmp[|1\jp|] = cellmp
>   }
>
>   //Generate point estimate of discontinuity
>   real colvector dist                                          // distance from a g
> iven observation
>   real colvector w                                             // triangle kernel w
> eights
>   real matrix XX, Xy                                           // regression matrci
> es for weighted regression
>   real rowvector xmean, ymean                                  // means for demeani
> ng regression vars
>   real colvector beta                                          // regression estima
> tes from weighted reg.
>   real colvector ehat                                          // predicted errors
> from weighted reg.
>   real scalar fhatr, fhatl                                     // local linear reg.
>  estimates at discontinuity
>                                                                //   estimated from
> right and left, respectively
>   real scalar thetahat                                         // discontinuity est
> imate
>   real scalar sethetahat                                       // standard error of
>  discontinuity estimate
>
>   //Estimate left of discontinuity
>   dist = cellmp :- c  // distance from potential discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:<c)  // triangle kernel weig
> hts for left
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)    //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatl = beta[2,1]
>
>   //Estimate right of discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:>=c)  // triangle kernel wei
> ghts for right
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)   //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatr = beta[2,1]
>
>   //Calculate and display discontinuity estimate
>   thetahat = ln(fhatr) - ln(fhatl)
>   sethetahat = sqrt( (1/(rn*h)) * (24/5) * ((1/fhatr) + (1/fhatl)) )
>   printf("\nDiscontinuity estimate (log difference in height): %f\n", thetahat)
>   printf("                                                   (%f)\n", sethetahat)
>
>   loopover=1 //This is an advanced user switch to get rid of LLR smoothing
>   //Can be used to speed up simulation runs--the switch avoids smoothing at
>   //eval points you aren't studying
>
>   //Perform local linear regression (LLR) smoothing
>   if (loopover==1) {
>     real scalar cellsm                                         // smoothed histogra
```

```
> m cell values
>     real colvector stcellsm                                     // stata view for sm
> oothed values
>     real colvector atstata                                      // stata view for at
>  variable (evaluation points)
>     real colvector at                                           // points at which t
> o evaluate LLR smoothing
>     real scalar evalpts                                         // number of evaluat
> ion points
>     real colvector steval                                               // stata vie
> w for LLR smothing eval points
>
>     // if evaluating at cell midpoints
>     if (atname == cellmpname) {
>       at = cellmp[|padzeros+1\padzeros+j|]
>       evalpts = j
>     }
>     else {
>       st_view(atstata, ., atname)
>       evalpts = nonmissing(atstata)
>       at = atstata[|1\evalpts|]
>     }
>
>     if (verbose) printf("Performing LLR smoothing.\n")
>     if (verbose) printf("%f iterations will be performed \n",j)
>
>     cellsm = J(evalpts,1,0)  // initialize smoothed histogram cell values to zero
>     // loop over all evaluation points
>     for (i = 1; i <= evalpts; i++) {
>       dist = cellmp :- at[i]
>       //set weights relative to current bin - note comma below is row join operator,
>  not two separate args
>       w = rowmax( (J(jp,1,0), ///
>         (1:-abs(dist:/h))):*((cellmp:>=c)*(at[i]>=c):+(cellmp:<c):*(at[i]<c)) )
>       //manually obtain weighted regression coefficients
>       w = (w:/sum(w)) :* jp  // normalize weights to sum to N (as does stata aweight
> s)
>       xmean = mean(dist, w)
>       ymean = mean(cellval, w)
>       XX = quadcrossdev(dist,xmean,w,dist,xmean)  //fixed error on 11.17.2009
>       Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>       beta = invsym(XX)*Xy
>       beta = beta \ ymean-xmean*beta
>       cellsm[i] = beta[2,1]
>       //Show dots
>       if (verbose) {
>         if (mod(i,10) == 0) {
>           printf(".")
>           displayflush()
>           if (mod(i,500) == 0) {
>             printf(" %f LLR iterations\n",i)
>             displayflush()
>           }
>         }
>       }
>     }
>     printf("\n")
>
>     //set up stata variable to hold evaluation points for smoothed values
>     (void) st_addvar("float", evalname)
>     st_view(steval, ., evalname)
>     steval[|1\evalpts|] = at
>
>     //set up stata variable to hold smoothed values
>     (void) st_addvar("float", cellsmname)
>     st_view(stcellsm, ., cellsmname)
>     stcellsm[|1\evalpts|] = cellsm
>
>     //Calculate standard errors for LLR smoothed values
>     real scalar m                                       // amount of kernel being tr
> uncated by breakpoint
>     real colvector cellsmse                             // standard errors of smooth
```

```
> ed histogram
>     real colvector stcellsmse                          // stata view for cell midpo
> int variable
>     cellsmse = J(evalpts,1,0)  // initialize standard errors to zero
>     for (i = 1; i <= evalpts; i++) {
>       if (at[i] > c) {
>         m = max((-1, (c-at[i])/h))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2-3*m^11-24*m^10-83*m^9-72*m^8+42*m^7+18*m^6-18*m^5+18*m^4-3*m^3+18*m^2-1
> 5*m)/ ///
>              (1+m^6+6*m^5-3*m^4-4*m^3+9*m^2-6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>       if (at[i] < c) {
>         m = min(((c-at[i])/h, 1))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2+3*m^11-24*m^10+83*m^9-72*m^8-42*m^7+18*m^6+18*m^5+18*m^4-3*m^3+18*m^2+1
> 5*m)/ ///
>              (1+m^6-6*m^5-3*m^4+4*m^3+9*m^2+6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>     }
>     //set up stata variable to hold standard errors for smoothed values
>     (void) st_addvar("float", cellsmsename)
>     st_view(stcellsmse, ., cellsmsename)
>     stcellsmse[|1\evalpts|] = cellsmse
>   }
>   //End of loop over evaluation points
>
>   //Fill in STATA return codes
>   st_rclear()
>   st_numscalar("r(theta)", thetahat)
>   st_numscalar("r(se)", sethetahat)
>   st_numscalar("r(binsize)", b)
>   st_numscalar("r(bandwidth)", h)
> }
note: variable run may be used before set
note: variable stcellval may be used before set
note: variable stcellmp may be used before set
note: variable stcellsm may be used before set
note: variable atstata may be used before set
note: variable steval may be used before set
note: variable stcellsmse may be used before set
note: variable riqr set but not used
note: variable ehat unused

: end
```

```
370
371
372 *------------------------------------------------------------------------------*
373 *                                                                              McCr
  > ary Test                                          *
374 *------------------------------------------------------------------------------*
375
376 use congress_yearly.dta, clear

377
378 drop posttreat
```

```
379 gen posttreat = "Pre"

380 replace posttreat = "Post" if year>2007
  variable posttreat was str3 now str4
  (168,677 real changes made)

381
382 gen treat_x=.
  (304,566 missing values generated)

383 gen treat_b=.
  (304,566 missing values generated)

384 gen treat_se=.
  (304,566 missing values generated)

385
386 ******************
387 ** Gender
388
389 gen male = female==0

390 replace male = . if female==.
  (12,432 real changes made, 12,432 to missing)

391
392 preserve

393 foreach var in male female  {
    2.         DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.         replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.         replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.         drop Xj Yj r0 fhat se_fhat
    6.         DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.         replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.         replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.         drop Xj Yj r0 fhat se_fhat
   10. }
  Using default bin size calculation, bin size = .001695219
  Using default bandwidth calculation, bandwidth = .096367455

  Discontinuity estimate (log difference in height): -.204486503
                                                     (.044679088)
  Performing LLR smoothing.
  591 iterations will be performed
  ..................................................... 500 LLR iterations
  .........
  (82,130 real changes made)
  (82,130 real changes made)
  Using default bin size calculation, bin size = .001871254
  Using default bandwidth calculation, bandwidth = .093512739

  Discontinuity estimate (log difference in height): .001360548
                                                     (.057243243)
  Performing LLR smoothing.
  536 iterations will be performed
  ..................................................... 500 LLR iterations
  ...
  (62,139 real changes made)
  (62,139 real changes made)
  Using default bin size calculation, bin size = .001434842
  Using default bandwidth calculation, bandwidth = .090944389
```

```
  Discontinuity estimate (log difference in height): -.118328001
                                                     (.054989577)
  Performing LLR smoothing.
  698 iterations will be performed
  ..................................................  500 LLR iterations
  ...................
  (83,273 real changes made)
  (83,273 real changes made)
  Using default bin size calculation, bin size = .001464157
  Using default bandwidth calculation, bandwidth = .087090925

  Discontinuity estimate (log difference in height): -.009026235
                                                     (.080362013)
  Performing LLR smoothing.
  684 iterations will be performed
  ..................................................  500 LLR iterations
  ...................
  (64,592 real changes made)
  (64,592 real changes made)

394         gen high = treat_b + 1.96 * treat_se
  (12,432 missing values generated)

395         gen low = treat_b - 1.96 * treat_se
  (12,432 missing values generated)

396
397         replace treat_x = -2 if male==1
  (144,269 real changes made)

398         replace treat_x = 2 if female==1
  (147,865 real changes made)

399         label define cat -2 "      Male" 2 "      Female"

400         label values treat_x cat

401
402         collapse treat_b high low, by(posttreat treat_x)

403         lab def posttreat_lab 1 "Pre" 2 "Post"

404         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

405
406 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white)  margin(
  > small)) note("") title("Male" "vs. Female", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(gender))

407 restore

408
409
410
411 ***************
```

```
412 ** Education
413
414 gen nomaster=master==0

415 replace nomaster=. if master==.
  (165,904 real changes made, 165,904 to missing)

416 preserve

417 foreach var in master nomaster  {
    2.         DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.         replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.         replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.         drop Xj Yj r0 fhat se_fhat
    6.         DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.         replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.         replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.         drop Xj Yj r0 fhat se_fhat
   10. }
  Using default bin size calculation, bin size = .003050695
  Using default bandwidth calculation, bandwidth = .100889788

  Discontinuity estimate (log difference in height): -.236436257
                                                     (.069121497)
  Performing LLR smoothing.
  329 iterations will be performed
  .............................
  (26,836 real changes made)
  (26,836 real changes made)
  Using default bin size calculation, bin size = .004655835
  Using default bandwidth calculation, bandwidth = .110354968

  Discontinuity estimate (log difference in height): -.067281555
                                                     (.099493181)
  Performing LLR smoothing.
  216 iterations will be performed
  ....................
  (11,579 real changes made)
  (11,579 real changes made)
  Using default bin size calculation, bin size = .001699771
  Using default bandwidth calculation, bandwidth = .095368069

  Discontinuity estimate (log difference in height): -.151015019
                                                     (.054327491)
  Performing LLR smoothing.
  590 iterations will be performed
  ............................................... 500 LLR iterations
  .........
  (74,329 real changes made)
  (74,329 real changes made)
  Using default bin size calculation, bin size = .002966479
  Using default bandwidth calculation, bandwidth = .100459409

  Discontinuity estimate (log difference in height): -.105858382
                                                     (.079949285)
  Performing LLR smoothing.
  338 iterations will be performed
  ................................
  (25,918 real changes made)
  (25,918 real changes made)
```

```
418         gen high = treat_b + 1.96 * treat_se
  (165,904 missing values generated)

419         gen low = treat_b - 1.96 * treat_se
  (165,904 missing values generated)

420
421         replace treat_x = -2 if master==1
  (38,415 real changes made)

422         replace treat_x = 2 if nomaster==1
  (100,247 real changes made)

423         label define cat -2 "   Master" 2 "   No Master"

424         label values treat_x cat

425
426         collapse treat_b high low, by(posttreat treat_x)

427         lab def posttreat_lab 1 "Pre" 2 "Post"

428         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

429
430 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white) margin(s
  > mall)) note("") title("Master" "vs. No Master", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(education))

431 restore

432
433
434
435 ***************
436 ** Seniority/Experience
437
438 gen experienced = 0

439 replace experienced=1 if experience_imp>=8 & posttreat=="Post" & experience_imp!=.
  (40,091 real changes made)

440 replace experienced=1 if experience_imp>=4 & posttreat=="Pre" & experience_imp!=.
  (24,797 real changes made)

441 replace experienced = . if experience_imp==.
  (73,779 real changes made, 73,779 to missing)

442
443 gen nonexperienced=experienced==0

444 replace nonexperienced=. if experienced==.
  (73,779 real changes made, 73,779 to missing)

445 preserve
```

```
446 foreach var in experienced nonexperienced  {
    2.         DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0
  >  & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  >  nograph
    3.         replace treat_b= r(theta) if posttreat == "Post"  & `var'==1
    4.         replace treat_se = r(se) if posttreat == "Post"  & `var'==1
    5.         drop Xj Yj r0 fhat se_fhat
    6.         DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0
  > & percent_annualpay <=1 & `var'==1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat)
  > nograph
    7.         replace treat_b= r(theta) if posttreat == "Pre" & `var'==1
    8.         replace treat_se = r(se) if posttreat == "Pre" & `var'==1
    9.         drop Xj Yj r0 fhat se_fhat
   10. }
  Using default bin size calculation, bin size = .002412021
  Using default bandwidth calculation, bandwidth = .074863394

  Discontinuity estimate (log difference in height): -.261790057
                                                     (.057553462)
  Performing LLR smoothing.
  416 iterations will be performed
  ........................................
  (40,091 real changes made)
  (40,091 real changes made)
  Using default bin size calculation, bin size = .002987413
  Using default bandwidth calculation, bandwidth = .084876445

  Discontinuity estimate (log difference in height): -.107312984
                                                     (.079317509)
  Performing LLR smoothing.
  336 iterations will be performed
  ................................
  (24,797 real changes made)
  (24,797 real changes made)
  Using default bin size calculation, bin size = .001095197
  Using default bandwidth calculation, bandwidth = .088306712

  Discontinuity estimate (log difference in height): -.163766512
                                                     (.056500518)
  Performing LLR smoothing.
  914 iterations will be performed
  ............................................... 500 LLR iterations
  ........................................
  (112,552 real changes made)
  (112,552 real changes made)
  Using default bin size calculation, bin size = .001468237
  Using default bandwidth calculation, bandwidth = .088700893

  Discontinuity estimate (log difference in height): .020771854
                                                     (.106953277)
  Performing LLR smoothing.
  681 iterations will be performed
  ............................................... 500 LLR iterations
  ..................
  (53,347 real changes made)
  (53,347 real changes made)

447         gen high = treat_b + 1.96 * treat_se
  (73,779 missing values generated)
```

```
448         gen low = treat_b - 1.96 * treat_se
  (73,779 missing values generated)

449
450         replace treat_x = -2 if experienced==1
  (64,888 real changes made)

451         replace treat_x = 2 if nonexperienced==1
  (165,899 real changes made)

452         label define cat -2 "   Senior" 2 "   Junior"

453         label values treat_x cat

454
455         collapse treat_b high low, by(posttreat treat_x)

456         lab def posttreat_lab 1 "Pre" 2 "Post"

457         encode posttreat, gen(posttreat_enc) label(posttreat_lab)

458
459 twoway (scatter treat_b treat_x, by(posttreat_enc, graphregion(color(white) margin(s
  > mall)) note("") title("Senior" "vs. Junior", size(medsmall) color(black))) ///
  >                         mcolor(black) msymbol(circle) plotr(m(zero)) yscale(range(-0
  > .6(0.1)0.6)) ylabel(-0.4 -0.2 0 0.2 0.4) xscale(range(-3(1)4)) xlabel(-2 2, labsize(
  > small) valuelabel angle(45) noticks) ///
  >                         legend(off) xtitle("") yline(0, lcolor(black))) ///
  >                 (rspike high low treat_x, by(posttreat_enc, legend(off)) lcolor(blac
  > k) lpattern(solid) name(experience))

460 restore

461
462
463 graph combine gender education experience, ///
  >         rows(1) graphregion(color(white)) ycommon l1("McCrary estimate (jump in log
  > density at threshold)", size(small))

464
465
466
467
468
469
470
  end of do-file

471 do FIGUREF2.do

472
473 /*****************************************************************************\
  > |    Title:              FIGUREE2: Share of Staffers Leaving to Become Lobbyists   |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*****************************************************************************/
474
475
```

```
476 clear all

477 set more off, permanently
  (set more preference recorded)

478 numlabel, add
  (dataset has no value labels)

479 set maxvar 32000


480
481 use congress_yearly.dta, clear

482
483 * create groups depending on coverage type
484 foreach x in treatment {
    2. sort stafferid year
    3. bysort stafferid: gen staycovered_`x' = (`x'==1 & `x'[_n-1]==1) if stafferid==sta
  > fferid[_n-1] & year==year[_n-1]+1
    4. replace staycovered_`x'=. if `x'==. | `x'[_n-1]==.
    5. bysort stafferid: gen stayuncovered_`x' = (`x'==0 & `x'[_n-1]==0) if stafferid==s
  > tafferid[_n-1] & year==year[_n-1]+1
    6. replace stayuncovered_`x'=. if `x'==. | `x'[_n-1]==.
    7. }
  (63,879 missing values generated)
  (0 real changes made)
  (63,879 missing values generated)
  (0 real changes made)

485
486 * different coverage groups
487 gen groupb = 1 if switchtouncovered_treatment == 1 // switch to uncovered
  (303,340 missing values generated)

488 replace groupb = 2 if staycovered_treatment == 1 // stay covered
  (20,693 real changes made)

489 replace groupb = 3 if switchtocovered_treatment == 1 // switch to covered
  (6,062 real changes made)

490 replace groupb = 4 if (stayuncovered_treatment == 1 & percent_annualpay >=.70 & nona
  > dmin_everyear==1) | (stayuncovered_treatment == 1 & percent_annualpay_exec >=.9 & no
  > nadmin_everyear==0) // stay uncovered (above 70% for non-admin staff and 90% for adm
  > in staff)
  (5,570 real changes made)

491
492 * collapse to get share of direct revolvers by groups
493 collapse (mean) meanlobbydirectafter= lobbydirectafter (sd) sdlobbydirectafter=lobby
  > directafter (count) n=lobbydirectafter, by(groupb posttreat)

494
495 generate hilobby = meanlobbydirectafter + invttail(n-1,0.025)*(sdlobbydirectafter /
  > sqrt(n))

496 generate lowlobby = meanlobbydirectafter - invttail(n-1,0.025)*(sdlobbydirectafter /
  >  sqrt(n))

497
```

```
498 generate grouptreat = groupb    if posttreat == 0
  (6 missing values generated)

499 replace  grouptreat = groupb+5  if posttreat == 1
  (4 real changes made)

500 sort grouptreat

501 list grouptreat posttreat groupb, sepby(posttreat)
```

	groupt~t	posttr~t	groupb
1.	1	0	1
2.	2	0	2
3.	3	0	3
4.	4	0	4
5.	6	1	1
6.	7	1	2
7.	8	1	3
8.	9	1	4
9.	.	1	.
10.	.	0	.

```
502
503 * plot
504 twoway (bar meanlobbydirectafter grouptreat if groupb==1, color(gs3)) ///
  >        (bar meanlobbydirectafter grouptreat if groupb==2, color(gs6)) ///
  >        (bar meanlobbydirectafter grouptreat if groupb==3, color(gs11)) ///
  >        (bar meanlobbydirectafter grouptreat if groupb==4, color(gs13)) ///
  >        (rcap hilobby lowlobby grouptreat, lcolor(black)), ///
  >        text(0.005 1 "430" 0.005 2 "6679" 0.005 3 "2233" 0.005 4 "1896" 0.005 6 "796"
  >  0.005 7 "14014" 0.005 8 "3829" 0.005 9 "3674", color(white) size(small)) graphregio
  > n(color(white)) ///
  >            legend(row(2) order(1 "Switch to uncovered" 2 "Stay covered" 3 "Switch to
  >  covered" 4 "Stay uncovered (>70%)") ) ///
  >        xlabel( 2.5 "Pre reform" 7.5 "Post reform", noticks) ///
  >        xtitle("Types of staffers") ytitle("Average share of staff leaving to lobby")
  >

505
506
507
508
  end of do-file

509 do FIGUREF3.do

510
511 /*******************************************************************************\
  > |    Title:              FIGUREE3: Average marginal effects of being a switcher on
  > |
  > |                                          unweighted lobbying revenue, by year since
  > leaving Congress|
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
```

```
512
513
514 clear all

515 set more off, permanently
  (set more preference recorded)

516 numlabel, add
  (dataset has no value labels)

517 set maxvar 32000


518
519
520 use lobbyist_yearly.dta, clear

521
522 * regression
523 reg log_adjlobrev i.switcher##i.yearsinceleaving experience_imp daysworked committee
  > staff_everyear personalstaff_everyear senate_everyear majority_everyear minority_eve
  > ryear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year if p
  > osttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(42, 404)        =     494.57
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.1072
                                                  Root MSE          =     2.2684

                                       (Std. Err. adjusted for 405 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
  ------
               log_adjlobrev |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  ------------------------------------------------------------------------------
  ------
                  1.switcher |   .8030969   .3765047     2.13   0.034      .062944     1
  > .54325
                             |
            yearsinceleaving |
                           1 |   .6840878    .154178     4.44   0.000     .3809965    .9
  > 871792
                           2 |   1.068139   .2175084     4.91   0.000     .6405495    1.
  > 495729
                           3 |   1.254531   .2202018     5.70   0.000     .8216467    1.
  > 687415
                           4 |   1.316481   .2358781     5.58   0.000      .852779    1.
  > 780182
                           5 |   1.185591   .2812913     4.21   0.000     .6326141    1.
  > 738569
                           6 |   1.157625   .3425263     3.38   0.001     .4842689    1.
  > 830982
                           7 |   1.273727   .3432292     3.71   0.000     .5989884    1.
  > 948465
                           8 |   .9465325   .4532711     2.09   0.037      .055468    1.
  > 837597
                           9 |   .4708718   .7054576     0.67   0.505    -.9159542    1.
  > 857698
                          10 |   .3069668   .8760409     0.35   0.726    -1.415201    2.
  > 029135
                          11 |   1.607675   .4586711     3.51   0.001     .7059949    2.
  > 509355
                             |
   switcher#yearsinceleaving |
                     1  1    |  -.0282294   .3936864    -0.07   0.943     -.802159    .7
  > 457002
                     1  2    |  -.6206282   .5347904    -1.16   0.247    -1.671948    .4
```

1 3	-.6222259	.4723474	-1.32	0.188	-1.550792	.3063398
1 4	-.4642128	.5776864	-0.80	0.422	-1.599859	.6714339
1 5	-.4557447	.81312	-0.56	0.575	-2.054219	1.14273
1 6	-.4947109	.9331281	-0.53	0.596	-2.329104	1.339682
1 7	-1.491674	.8080747	-1.85	0.066	-3.08023	.0968828
1 8	-1.221984	1.001276	-1.22	0.223	-3.190346	.7463785
1 9	-1.448983	1.057582	-1.37	0.171	-3.528034	.6300687
1 10	0	(empty)				
1 11	0	(empty)				
experience_imp	.0059554	.0157682	0.38	0.706	-.0250425	.0369534
daysworked	-.0000544	.0007244	-0.08	0.940	-.0014784	.0013696
committeestaff_everyear	.150287	.2875227	0.52	0.601	-.4149405	.7155145
personalstaff_everyear	-4.946138	1.93981	-2.55	0.011	-8.759519	-1.132757
senate_everyear	.2900561	.2303238	1.26	0.209	-.1627268	.7428389
majority_everyear	.6170508	.4594087	1.34	0.180	-.2860792	1.520181
minority_everyear	-.0269103	.4797474	-0.06	0.955	-.9700233	.9162027
dcoffice_everyear	5.01257	1.881133	2.66	0.008	1.314538	8.710602
leaderofficestaff_everyear	1.145925	.4822334	2.38	0.018	.1979245	2.093925
log_max_adjannual_pay	.3099949	.3572138	0.87	0.386	-.3922351	1.012225
year						
2008	.9090445	.6997394	1.30	0.195	-.4665404	2.284629
2009	.3648516	.7181671	0.51	0.612	-1.04696	1.776663
2010	.2506003	.6786481	0.37	0.712	-1.083522	1.584723
2011	.2063148	.647093	0.32	0.750	-1.065775	1.478405
2012	.2643481	.6271459	0.42	0.674	-.9685288	1.497225
2013	.2062218	.6365906	0.32	0.746	-1.045222	1.457666
2014	.2995595	.6290296	0.48	0.634	-.9370204	1.53614
2015	.4703378	.643299	0.73	0.465	-.7942937	1.734969
2016	.3474677	.6517706	0.53	0.594	-.9338177	1.628753
2017	.250938	.6641115	0.38	0.706	-1.054608	1.556484
2018	.5267834	.6802839	0.77	0.439	-.810555	1.864122
_cons	8.010586	4.25004	1.88	0.060	-.3443683	16.36554

```
524
525 * plot marginal effects
526 margins if yearsinceleaving<8, dydx(i.switcher) over(i.yearsinceleaving)

  Average marginal effects                        Number of obs     =      1,818
  Model VCE    : Robust

  Expression   : Linear prediction, predict()
  dy/dx w.r.t. : 1.switcher
  over         : yearsinceleaving
```

	Delta-method dy/dx	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher	(base outcome)					
1.switcher						
yearsinceleaving						
0	.8030969	.3765047	2.13	0.034	.062944	1.54325
1	.7748675	.3448238	2.25	0.025	.0969946	1.45274
2	.1824688	.4315346	0.42	0.673	-.665865	1.030803
3	.1808711	.4769755	0.38	0.705	-.7567928	1.118535
4	.3388842	.4577858	0.74	0.460	-.5610556	1.238824
5	.3473523	.7007369	0.50	0.620	-1.030194	1.724898
6	.308386	.8850995	0.35	0.728	-1.43159	2.048362
7	-.6885766	.7640212	-0.90	0.368	-2.19053	.813377

```
  Note: dy/dx for factor levels is the discrete change from the base level.

527
528 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect
  >  estimate for being a switcher") title("") xtitle("Year since leaving Congress")

    Variables that uniquely identify margins: yearsinceleaving

529
530
531
  end of do-file

532 do FIGUREF4.do

533
534 /*****************************************************************************\
  > |    Title:              FIGUREE4: Average marginal effects of being a switcher on
  > |
  > |                                        number and size of lobbying reports
  >                            |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*****************************************************************************/
535
536
537 clear all

538 set more off, permanently
  (set more preference recorded)
```

```
539 numlabel, add
  (dataset has no value labels)

540 set maxvar 32000


541
542
543 use lobbyist_yearly.dta, clear

544
545 gen log_total_contracts_firm = ln(total_contracts_firm)
  (12,567 missing values generated)

546
547 foreach var of varlist contract_size_* {
    2.         gen log_`var' = ln(`var'+1)
    3. }
  (12,567 missing values generated)

548
549 ***********************************************
550 ** Number of contracts that lobbyists takes on
551
552 * effect positive, but not very pronounced for number of contracts
553 reg log_total_contracts_firm i.switcher##i.yearsinceleaving experience_imp daysworke
  > d committeestaff_everyear personalstaff_everyear senate_everyear majority_everyear m
  > inority_everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay
  > i.year if posttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(41, 404)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.1657
                                                  Root MSE          =     1.1252

                                               (Std. Err. adjusted for 405 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
               |               Robust
  log_total_contracts_firm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  -------------------------+----------------------------------------------------------------
          1.switcher |   .4042065   .3126742     1.29   0.197    -.210465    1.
  > 018878
                     |
      yearsinceleaving |
                   1 |    .601037   .0884312     6.80   0.000    .4271943    .7
  > 748798
                   2 |   .9636375   .0987724     9.76   0.000    .7694655     1
  > .15781
                   3 |   1.156533   .1083737    10.67   0.000    .9434862     1
  > .36958
                   4 |   1.094103   .1287012     8.50   0.000    .8410953    1.
  > 347111
                   5 |    1.10175   .1433204     7.69   0.000    .8200034    1.
  > 383497
                   6 |   1.199761    .157685     7.61   0.000    .8897754    1.
  > 509747
                   7 |   1.168415   .1649925     7.08   0.000    .8440636    1.
  > 492766
                   8 |   .9919338   .2040467     4.86   0.000     .590808     1
  > .39306
                   9 |   .8902612   .2474516     3.60   0.000    .4038077    1.
  > 376715
                  10 |   .7741981   .3003419     2.58   0.010       .18377    1.
  > 364626
                  11 |   1.313504   .2704425     4.86   0.000    .7818534    1.
```

switcher#yearsinceleaving						
1	1	.1058914	.3413257	0.31	0.757	-.5651048	.7 > 768876
1	2	-.3703749	.4529276	-0.82	0.414	-1.260764	.5 > 200142
1	3	-.4329877	.3626035	-1.19	0.233	-1.145813	.2 > 798376
1	4	-.2066024	.4213541	-0.49	0.624	-1.034923	.6 > 217179
1	5	-.2807676	.544316	-0.52	0.606	-1.350813	.7 > 892777
1	6	-.4779928	.8174472	-0.58	0.559	-2.084974	1. > 128988
1	7	-1.075886	.8066263	-1.33	0.183	-2.661595	.5 > 098226
1	8	-.7849931	.7084933	-1.11	0.269	-2.177787	.6 > 078009
1	9	-.9718272	.8493936	-1.14	0.253	-2.64161	.6 > 979561
1	10	0	(empty)				
1	11	0	(empty)				
experience_imp		.0016243	.0079364	0.20	0.838	-.0139775	.0 > 172261
daysworked		-.000448	.0003997	-1.12	0.263	-.0012338	.0 > 003378
committeestaff_everyear		.1706321	.1851902	0.92	0.357	-.1934248	.5 > 346889
personalstaff_everyear		-1.184955	.4277562	-2.77	0.006	-2.02586	-.3 > 440486
senate_everyear		.1297135	.1129069	1.15	0.251	-.0922449	.3 > 516718
majority_everyear		.1898694	.3730229	0.51	0.611	-.5434388	.9 > 231776
minority_everyear		-.1125055	.3721121	-0.30	0.763	-.8440232	.6 > 190123
dcoffice_everyear		1.51231	.2194245	6.89	0.000	1.080954	1. > 943667
leaderofficestaff_everyear		.9156736	.3770931	2.43	0.016	.174364	1. > 656983
log_max_adjannual_pay		.176241	.2354583	0.75	0.455	-.2866355	.6 > 391174
year						
2008		1.910993	.6791132	2.81	0.005	.575956	3 > .24603
2009		1.691684	.6634512	2.55	0.011	.3874363	2. > 995932
2010		1.473655	.6538251	2.25	0.025	.188331	2. > 758979
2011		1.490394	.6480877	2.30	0.022	.2163489	2 > .76444
2012		1.336994	.6444454	2.07	0.039	.0701089	2. > 603879
2013		1.323844	.6438721	2.06	0.040	.0580855	2. > 589602
2014		1.396956	.6432545	2.17	0.030	.132412	> 2.6615
2015		1.526952	.6444775	2.37	0.018	.2600034	> 2.7939
2016		1.429615	.6460989	2.21	0.027	.1594798	2. > 699751
2017		1.45157	.643767	2.25	0.025	.1860189	2. > 717122
2018		1.537344	.6416138	2.40	0.017	.2760258	2. > 798663
_cons		-1.525464	2.793951	-0.55	0.585	-7.017961	3. > 967033

```
554
555 margins if yearsinceleaving<8, dydx(i.switcher) over(i.yearsinceleaving)

  Average marginal effects                        Number of obs     =      1,818
  Model VCE    : Robust

  Expression   : Linear prediction, predict()
  dy/dx w.r.t. : 1.switcher
  over         : yearsinceleaving
```

	dy/dx	Delta-method Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher	(base outcome)					
1.switcher						
yearsinceleaving						
0	.4042065	.3126742	1.29	0.197	-.210465	1.018878
1	.510098	.2652069	1.92	0.055	-.0112598	1.031456
2	.0338316	.3038216	0.11	0.911	-.563437	.6311002
3	-.0287812	.326215	-0.09	0.930	-.6700721	.6125097
4	.1976041	.2668377	0.74	0.459	-.3269597	.722168
5	.1234389	.400213	0.31	0.758	-.6633211	.9101989
6	-.0737863	.7520816	-0.10	0.922	-1.552268	1.404696
7	-.6716797	.7403413	-0.91	0.365	-2.127082	.7837227

```
  Note: dy/dx for factor levels is the discrete change from the base level.

556
557 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) title("Log num
  > ber of lobbying reports", color(black)) xtitle("Year since leaving Congress") ytitle
  > ("Effect estimate for being a switcher") name(margins_numberofcontracts, replace)

    Variables that uniquely identify margins: yearsinceleaving

558
559
560 ************************************************
561 ** Average size of contracts per year that lobbyist takes on
562
563 reg log_contract_size_adj_wgt i.switcher##i.yearsinceleaving experience_imp dayswork
  > ed committeestaff_everyear personalstaff_everyear senate_everyear majority_everyear
  > minority_everyear dcoffice_everyear leaderofficestaff_everyear i.year log_max_adjann
  > ual_pay if posttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(42, 404)        =       5.59
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.0314
                                                  Root MSE          =     1.3694

                                               (Std. Err. adjusted for 405 clusters in staf
  > ferid)
```

log_contract_size_adj_wgt	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Int
1.switcher	.3473019	.1687791	2.06	0.040	.0155071	.6
> 790968						
yearsinceleaving						
1	.1598714	.0946179	1.69	0.092	-.0261334	.3
> 458763						

2	.1802073	.144064	1.25	0.212	-.1030014	.4
> 634159						
3	.1550229	.1391792	1.11	0.266	-.1185829	.4
> 286287						
4	.299886	.1423597	2.11	0.036	.0200277	.5
> 797443						
5	.2075177	.167568	1.24	0.216	-.1218964	.5
> 369318						
6	.0939742	.2084825	0.45	0.652	-.3158717	.5
> 038201						
7	.1538043	.2030219	0.76	0.449	-.245307	.5
> 529156						
8	.179326	.2721592	0.66	0.510	-.3556991	.7
> 143511						
9	-.1452802	.4493491	-0.32	0.747	-1.028635	.7
> 380741						
10	-.0638634	.5689934	-0.11	0.911	-1.182421	1.
> 054694						
11	.408909	.3110755	1.31	0.189	-.2026198	1.
> 020438						
switcher#yearsinceleaving						
1 1	-.2199301	.1473532	-1.49	0.136	-.5096049	.0
> 697448						
1 2	-.2637565	.1774553	-1.49	0.138	-.6126075	.0
> 850945						
1 3	-.3065638	.1906262	-1.61	0.109	-.6813068	.0
> 681793						
1 4	-.41539	.2220514	-1.87	0.062	-.8519104	.0
> 211304						
1 5	-.3937005	.2803534	-1.40	0.161	-.9448342	.1
> 574332						
1 6	-.3070795	.3628798	-0.85	0.398	-1.020448	.
> 406289						
1 7	-.4214284	.2517097	-1.67	0.095	-.9162527	.
> 073396						
1 8	-.0340929	.332748	-0.10	0.918	-.6882266	.6
> 200408						
1 9	-.097523	.5320293	-0.18	0.855	-1.143415	.9
> 483686						
1 10	0	(empty)				
1 11	0	(empty)				
experience_imp	.0023517	.0088792	0.26	0.791	-.0151034	.0
> 198069						
daysworked	5.84e-06	.0003774	0.02	0.988	-.0007362	.0
> 007478						
committeestaff_everyear	-.0547537	.1236228	-0.44	0.658	-.297778	.1
> 882706						
personalstaff_everyear	-2.325634	1.58788	-1.46	0.144	-5.447174	.7
> 959058						
senate_everyear	.0795007	.1284448	0.62	0.536	-.173003	.3
> 320043						
majority_everyear	.0935269	.2329705	0.40	0.688	-.364459	.5
> 515127						
minority_everyear	-.0862457	.2430445	-0.35	0.723	-.5640356	.3
> 915443						
dcoffice_everyear	2.280258	1.564879	1.46	0.146	-.7960642	5
> .35658						
leaderofficestaff_everyear	-.0144868	.2560816	-0.06	0.955	-.5179058	.4
> 889321						
year						
2008	-.8306303	.287193	-2.89	0.004	-1.39521	-.
> 266051						
2009	-.849412	.3124174	-2.72	0.007	-1.463579	-.2
> 352453						
2010	-.8675825	.2625906	-3.30	0.001	-1.383797	-.3
> 513679						
2011	-.8830925	.2257551	-3.91	0.000	-1.326894	-.4
> 392911						
2012	-.6880553	.2098527	-3.28	0.001	-1.100595	-.2

```
> 755158
                    2013 |  -.7249848    .229398    -3.16   0.002    -1.175948    -.
> 274022
                    2014 |  -.7156587   .2229047    -3.21   0.001    -1.153857   -.2
> 774607
                    2015 |  -.6874517   .2350563    -2.92   0.004    -1.149538   -.2
> 253655
                    2016 |  -.6722595   .2443334    -2.75   0.006    -1.152583   -.1
> 919358
                    2017 |  -.7955011   .2596106    -3.06   0.002    -1.305858   -.2
> 851446
                    2018 |  -.6049635   .2819175    -2.15   0.032    -1.159172    -.
> 050755
                         |
     log_max_adjannual_pay |   .2885719   .1723524     1.67   0.095    -.0502476    .6
> 273913
                   _cons |   6.331302   2.078388     3.05   0.002     2.245497    10
> .41711
------------------------------------------------------------------------------
  ______

564
565 margins if yearsinceleaving<8, dydx(i.switcher) over(i.yearsinceleaving)

Average marginal effects                        Number of obs     =      1,818
Model VCE    : Robust

Expression   : Linear prediction, predict()
dy/dx w.r.t. : 1.switcher
over         : yearsinceleaving

------------------------------------------------------------------------------
                             |            Delta-method
                             |      dy/dx   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------
0.switcher                   |  (base outcome)
-----------------------------+------------------------------------------------
1.switcher                   |
yearsinceleaving             |
                           0 |    .3473019   .1687791     2.06   0.040     .0155071    .6790968
                           1 |    .1273719   .1301755     0.98   0.328    -.1285342    .3832779
                           2 |    .0835454   .1492057     0.56   0.576    -.2097712     .376862
                           3 |    .0407381   .1696615     0.24   0.810    -.2927916    .3742679
                           4 |   -.0680881   .1926844    -0.35   0.724    -.4468774    .3107013
                           5 |   -.0463986   .2672045    -0.17   0.862    -.5716834    .4788862
                           6 |    .0402225   .3367153     0.12   0.905    -.6217104    .7021553
                           7 |   -.0741264   .2020271    -0.37   0.714     -.471282    .3230292
------------------------------------------------------------------------------
Note: dy/dx for factor levels is the discrete change from the base level.

566
567 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) title("Log ave
  > rage report size", color(black)) xtitle("Year since leaving Congress") ytitle("Effec
  > t estimate for being a switcher") name(margins_contractsize, replace)

  Variables that uniquely identify margins: yearsinceleaving

568
569 graph combine margins_numberofcontracts margins_contractsize, ycommon graphregion(co
  > lor(white))
```

```
570
571
572
  end of do-file

573 do FIGUREF5.do

574
575 /*******************************************************************************\
  > |    Title:              FIGUREE5: Share of Member Salary That Switchers Move To   |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
576
577
578 clear all

579 set more off, permanently
  (set more preference recorded)

580 numlabel, add
  (dataset has no value labels)

581 set maxvar 32000


582
583 use congress_yearly.dta, clear

584
585 * where switchers land
586 twoway kdensity percent_annualpay if posttreat==1 & switchtouncovered_treatment ==1
  > & nonadmin_everyear==1 || kdensity percent_annualpay if posttreat==1 & switchtouncov
  > ered_treatment ==1 & lobbydirectafter==1 & nonadmin_everyear==1, graphregion(color(w
  > hite)) ytitle("Kernel density") xtitle("Share of member salary (landing)") legend(or
  > der(1 "All" 2 "Lobbyists")) name(landing, replace)

587
588 * where switchers start
589 xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

590 gen temp = L.percent_annualpay
  (63,879 missing values generated)

591
592 twoway kdensity temp if posttreat==1 & switchtouncovered_treatment ==1 & temp<=1 & n
  > onadmin_everyear==1 || kdensity temp if posttreat==1 & switchtouncovered_treatment =
  > =1 & lobbydirectafter==1 & temp<=1 & nonadmin_everyear==1, graphregion(color(white))
  >  ytitle("Kernel density") xtitle("Share of member salary (starting)") legend(order(1
  >  "All" 2 "Lobbyists")) name(starting, replace)

593
594 grc1leg landing starting, graphregion(color(white))

595
```

```
596
  end of do-file

597 do FIGUREF6.do

598
599 /*******************************************************************************\
  > |    Title:              FIGUREE6: McCrary Density Estimates at Hypothetical Cutoffs
  > |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*******************************************************************************/
600
601
602 clear all

603 set more off, permanently
  (set more preference recorded)

604 numlabel, add
  (dataset has no value labels)

605 set maxvar 32000


606
607
608 *-------------------------------------------------------------------------------*
609 *                                                                 McCrary Test
  >                                                          *
610 *-------------------------------------------------------------------------------*
611
612 capture program drop DCdensity

613 program DCdensity, rclass
    1. {
    2.   version 13.0
    3.   set more off
    4.   pause on
    5.   syntax varname(numeric) [if/] [in/], breakpoint(real) GENerate(string) ///
  >      [ b(real 0) h(real 0) at(string) graphname(string) noGRaph]
    6.
614   marksample touse
    7.
615   //Advanced user switch
616   //0 - supress auxiliary output  1 - display aux output
617   local verbose 1
    8.
618   //Bookkeeping before calling MATA function
619   //"running variable" in terminology of McCrary (2008)
620   local R "`varlist'"
    9.
621   tokenize `generate'
   10.   local wc : word count `generate'
   11.   if (`wc'!=5) {
   12.     //generate(Xj Yj r0 fhat se_fhat) is suggested
622     di "Specify names for five variables in generate option"
   13.     di "1. Name of variable in which to store cell midpoints of histogram"
   14.     di "2. Name of variable in which to store cell heights of histogram"
   15.     di "3. Name of variable in which to store evaluation sequence for local linea
  > r regression loop"
   16.     di "4. Name of variable in which to store local linear density estimate"
   17.     di "5. Name of variable in which to store standard error of local linear dens
  > ity estimate"
   18.     error 198
   19.   }
   20.   else {
   21.     local cellmpname = "`1'"
   22.     local cellvalname = "`2'"
   23.     local evalname = "`3'"
```

```
   24.     local cellsmname = "`4'"
   25.     local cellsmsename = "`5'"
   26.     confirm new var `1'
   27.     confirm new var `2'
   28.     capture confirm new var `3'
   29.     if (_rc!=0 & "`at'"!="`3'") error 198
   30.     confirm new var `4'
   31.     confirm new var `5'
   32.   }
   33.
623   //If the user does not specify the evaluation sequence, this it is taken to be the
  >  histogram midpoints
624   if ("`at'" == "") {
   34.     local at  = "`1'"
   35.   }
   36.
625   //Call MATA function
626   mata: DCdensitysub("`R'", "`touse'", `breakpoint', `b', `h', `verbose', "`cellmpna
  > me'", "`cellvalname'", ///
  >                     "`evalname'", "`cellsmname'", "`cellsmsename'", "`at'")
   37.
627   //Dump MATA return codes into STATA return codes
628   return scalar theta = r(theta)
   38.   return scalar se = r(se)
   39.   return scalar binsize = r(binsize)
   40.   return scalar bandwidth = r(bandwidth)
   41.
629   //if user wants the graph...
630   if ("`graph'"!="nograph") {
   42.         *local breakpoint 0.75
631         *local cellmpname Xj
632         *local cellvalname Yj
633         *local evalname r0
634         *local cellsmname fhat
635         *local cellsmsename se_fhat
636         *drop if `cellmpname' < 0 | `cellmpname' > 1
637         *drop if `evalname' < 0 | `evalname' > 1
638     tempvar hi
   43.     quietly gen `hi' = `cellsmname' + 1.96*`cellsmsename'
   44.     tempvar lo
   45.     quietly gen `lo' = `cellsmname' - 1.96*`cellsmsename'
   46.     gr twoway (scatter `cellvalname' `cellmpname', msymbol(circle_hollow) mcolor(
  > gray))              ///
  >       (line `cellsmname' `evalname' if `evalname' < `breakpoint', lcolor(black) lwid
  > th(medthick))   ///
  >         (line `cellsmname' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(medthick))   ///
  >           (line `hi' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth(v
  > thin))              ///
  >             (line `lo' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth
  > (vthin))              ///
  >               (line `hi' `evalname' if `evalname' > `breakpoint', lcolor(black) lwid
  > th(vthin))              ///
  >                 (line `lo' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(vthin)),             ///
  >                  xline(`breakpoint', lcolor(black)) legend(off) graphregion(color(w
  > hite)) ///
  >                                   xtitle("Share of member salary") ytitle("Density E
  > stimate")
   47.     if ("`graphname'"!="") {
   48.       di "Exporting graph as `graphname'"
   49.       graph save `graphname', replace
   50.           graph export `graphname'.png, replace
   51.     }
   52.   }
   53. }
   54. end
```

```
mata:
─────────────────────────────────────────────── mata (type end to exit) ────────────
: mata set matastrict on

:
: void DCdensitysub(string scalar runvar, string scalar tousevar, real scalar c, real
> scalar b, ///
>                   real scalar h, real scalar verbose, string scalar cellmpname, stri
> ng scalar cellvalname, ///
>                   string scalar evalname, string scalar cellsmname, string scalar ce
> llsmsename, ///
>                   string scalar atname) {
>   //   inputs: runvar - name of stata running variable ("R" in McCrary (2008))
>   //            tousevar - name of variable indicating which obs to use
>   //            c - point of potential discontinuity
>   //            b - bin size entered by user (zero if default is to be used)
>   //            h - bandwidth entered by user (zero if default is to be used)
>   //            verbose - flag for extra messages printing to screen
>   //            cellmpname - name of new variable that will hold the histogram cell
>  midpoints
>   //            cellvalname - name of new variable that will hold the histogram val
> ues
>   //            evalname - name of new variable that will hold locations where the
> histogram smoothing was
>   //                       evaluated
>   //            cellsmname - name of new variable that will hold the smoothed histo
> gram cell values
>   //            cellsmsename - name of new variable that will hold standard errors
> for smoothed histogram cells
>   //            atname - name of existing stata variable holding points at which to
>  eval smoothed histogram
>
>   //declarations for general use and histogram generation
>   real colvector run                                        // stata running var
> iable
>   string scalar statacom                                    // string to hold st
> ata commands
>   real scalar errcode                                       // scalar to hold re
> turn code for stata commands
>   real scalar rn, rsd, rmin, rmax, rp75, rp25, riqr         // scalars for summa
> ry stats of running var
>   real scalar l, r                                          // midpoint of lowes
> t bin and highest bin in histogram
>   real scalar lc, rc                                        // midpoint of bin j
> ust left of and just right of breakpoint
>   real scalar j                                             // number of bins sp
> anned by running var
>   real colvector binnum                                     // each obs bin numb
> er
>   real colvector cellval                                    // histogram cell va
> lues
>   real scalar i                                             // counter
>   real scalar cellnum                                       // cell value holder
>  for histogram generation
>   real colvector cellmp                                     // histogram cell mi
> dpoints
>   real scalar loopover                                      //DL: Declaring loop
> over?
>
>   //Set up histogram grid
>
>   st_view(run, ., runvar, tousevar)     //view of running variable--only observation
> s for which `touse'=1
>
>   //Get summary stats on running variable
>   statacom = "quietly summarize " + runvar + " if " + tousevar + ", det"
>   errcode=_stata(statacom,1)
>   if (errcode!=0) {
>     "Unable to successfully execute the command "+statacom
>     "Check whether you have given Stata enough memory"
```

```
>   }
>   rn = st_numscalar("r(N)")
>   rsd = st_numscalar("r(sd)")
>   rmin = st_numscalar("r(min)")
>   rmax = st_numscalar("r(max)")
>   rp75 = st_numscalar("r(p75)")
>   rp25 = st_numscalar("r(p25)")
>   riqr = rp75 - rp25
>
>   if ( (c<=rmin) | (c>=rmax) ) {
>     printf("Breakpoint must lie strictly within range of running variable\n")
>     _error(3498)
>   }
>
>   //set bin size to default in paper sec. III.B unless provided by the user
>   if (b == 0) {
>     b = 2*rsd*rn^(-1/2)
>     if (verbose) printf("Using default bin size calculation, bin size = %f\n", b)
>   }
>
>   //bookkeeping
>   l = floor((rmin-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   r = floor((rmax-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   lc = c-(b/2) // midpoint of bin just left of breakpoint
>   rc = c+(b/2) // midpoint of bin just right of breakpoint
>   j = floor((rmax-rmin)/b)+2
>
>   //create bin numbers corresponding to run... See McCrary (2008, eq 2)
>   binnum = round((((floor((run :- c):/b):*b:+b:/2:+c) :- l):/b) :+ 1)  // bin number
>  for each obs
>
>   //generate histogram
>   cellval = J(j,1,0)  // initialize cellval as j-vector of zeros
>   for (i = 1; i <= rn; i++) {
>     cellnum = binnum[i]
>     cellval[cellnum] = cellval[cellnum] + 1
>   }
>
>   cellval = cellval :/ rn  // convert counts into fractions
>   cellval = cellval :/ b  // normalize histogram to integrate to 1
>   cellmp = range(1,j,1)  // initialize cellmp as vector of integers from 1 to j
>   cellmp = floor(((l :+ (cellmp:-1):*b):-c):/b):*b:+b:/2:+c  // convert bin numbers
> into cell midpoints
>
>   //place histogram info into stata data set
>   real colvector stcellval                                          // stata view for ce
> ll value variable
>   real colvector stcellmp                                           // stata view for ce
> ll midpoint variable
>
>   (void) st_addvar("float", cellvalname)
>   st_view(stcellval, ., cellvalname)
>   (void) st_addvar("float", cellmpname)
>   st_view(stcellmp, ., cellmpname)
>   stcellval[|1\j|] = cellval
>   stcellmp[|1\j|] = cellmp
>
>   //Run 4th order global polynomial on histogram to get optimal bandwidth (if necess
> ary)
>   real matrix P                                                     // projection matrix
>  returned from orthpoly command
>   real matrix betaorth4                                             // coeffs from regre
> ssion of orthogonal powers of cellmp
>   real matrix beta4                                                 // coeffs from norma
> l regression of powers of cellmp
>   real scalar mse4                                                  // mean squared erro
> r from polynomial regression
>   real scalar hleft, hright                                         // bandwidth est fro
> m polynomial left of and right of breakpoint
>   real scalar leftofc, rightofc                                     // bin number just l
> eft of and just right of breakpoint
>   real colvector cellmpleft, cellmpright                            // cell midpoints le
```

```
> ft of and right of breakpoint
>   real colvector fppleft, fppright                                  // fit second deriv
> of hist left of and right of breakpoint
>
>   //only calculate optimal bandwidth if user hasn't provided one
>   if (h == 0) {
>     //separate cells left of and right of the cutoff
>     leftofc =  round((((floor((lc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just l
> eft of breakpoint
>     rightofc = round((((floor((rc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just r
> ight of breakpoint
>     if (rightofc-leftofc != 1) {
>       printf("Error occurred in optimal bandwidth calculation\n")
>       _error(3498)
>     }
>     cellmpleft = cellmp[|1\leftofc|]
>     cellmpright = cellmp[|rightofc\j|]
>
>     //estimate 4th order polynomial left of the cutoff
>     statacom = "orthpoly " + cellmpname + ", generate(" + cellmpname + "*) deg(4) po
> ly(P)"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " < " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppleft = 2*beta4[2] :+ 6*beta4[3]:*cellmpleft + 12*beta4[4]:*cellmpleft:^2
>     hleft = 3.348 * ( mse4*(c-l) / sum( fppleft:^2) )^(1/5)
>
>     //estimate 4th order polynomial right of the cutoff
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " > " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppright = 2*beta4[2] :+ 6*beta4[3]:*cellmpright + 12*beta4[4]:*cellmpright:^2
>     hright = 3.348 * ( mse4*(r-c) / sum( fppright:^2) )^(1/5)
>     statacom = "drop " + cellmpname + "1-" + cellmpname + "4"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>
>     //set bandwidth to average of calculations from left and right
>     h = 0.5*(hleft + hright)
>     if (verbose) printf("Using default bandwidth calculation, bandwidth = %f\n", h)
>   }
>
>   //Add padding zeros to histogram (to assist smoothing)
>   real scalar padzeros                                              // number of zeros t
> o pad on each side of hist
>   real scalar jp                                                    // number of histogr
> am bins including padded zeros
>
```

```
>   padzeros = ceil(h/b)  // number of zeros to pad on each side of hist
>   jp = j + 2*padzeros
>   if (padzeros >= 1) {
>     //add padding to histogram variables
>     cellval = ( J(padzeros,1,0) \ cellval \ J(padzeros,1,0) )
>     cellmp = ( range(l-padzeros*b,l-b,b) \ cellmp \ range(r+b,r+padzeros*b,b) )
>     //dump padded histogram variables out to stata
>     stcellval[|1\jp|] = cellval
>     stcellmp[|1\jp|] = cellmp
>   }
>
>   //Generate point estimate of discontinuity
>   real colvector dist                                          // distance from a g
> iven observation
>   real colvector w                                             // triangle kernel w
> eights
>   real matrix XX, Xy                                           // regression matrci
> es for weighted regression
>   real rowvector xmean, ymean                                  // means for demeani
> ng regression vars
>   real colvector beta                                          // regression estima
> tes from weighted reg.
>   real colvector ehat                                          // predicted errors
> from weighted reg.
>   real scalar fhatr, fhatl                                     // local linear reg.
>  estimates at discontinuity
>                                                                //   estimated from
> right and left, respectively
>   real scalar thetahat                                         // discontinuity est
> imate
>   real scalar sethetahat                                       // standard error of
>  discontinuity estimate
>
>   //Estimate left of discontinuity
>   dist = cellmp :- c  // distance from potential discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:<c)  // triangle kernel weig
> hts for left
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)    //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatl = beta[2,1]
>
>   //Estimate right of discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:>=c)  // triangle kernel wei
> ghts for right
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)   //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatr = beta[2,1]
>
>   //Calculate and display discontinuity estimate
>   thetahat = ln(fhatr) - ln(fhatl)
>   sethetahat = sqrt( (1/(rn*h)) * (24/5) * ((1/fhatr) + (1/fhatl)) )
>   printf("\nDiscontinuity estimate (log difference in height): %f\n", thetahat)
>   printf("                                                   (%f)\n", sethetahat)
>
>   loopover=1 //This is an advanced user switch to get rid of LLR smoothing
>   //Can be used to speed up simulation runs--the switch avoids smoothing at
>   //eval points you aren't studying
>
>   //Perform local linear regression (LLR) smoothing
>   if (loopover==1) {
```

```
>     real scalar cellsm                                          // smoothed histogra
> m cell values
>     real colvector stcellsm                                     // stata view for sm
> oothed values
>     real colvector atstata                                      // stata view for at
>  variable (evaluation points)
>     real colvector at                                           // points at which t
> o evaluate LLR smoothing
>     real scalar evalpts                                         // number of evaluat
> ion points
>     real colvector steval                                               // stata vie
> w for LLR smothing eval points
>
>     // if evaluating at cell midpoints
>     if (atname == cellmpname) {
>       at = cellmp[|padzeros+1\padzeros+j|]
>       evalpts = j
>     }
>     else {
>       st_view(atstata, ., atname)
>       evalpts = nonmissing(atstata)
>       at = atstata[|1\evalpts|]
>     }
>
>     if (verbose) printf("Performing LLR smoothing.\n")
>     if (verbose) printf("%f iterations will be performed \n",j)
>
>     cellsm = J(evalpts,1,0)  // initialize smoothed histogram cell values to zero
>     // loop over all evaluation points
>     for (i = 1; i <= evalpts; i++) {
>       dist = cellmp :- at[i]
>       //set weights relative to current bin - note comma below is row join operator,
>  not two separate args
>       w = rowmax( (J(jp,1,0), ///
>         (1:-abs(dist:/h))):*((cellmp:>=c)*(at[i]>=c):+(cellmp:<c):*(at[i]<c)) )
>       //manually obtain weighted regression coefficients
>       w = (w:/sum(w)) :* jp  // normalize weights to sum to N (as does stata aweight
> s)
>       xmean = mean(dist, w)
>       ymean = mean(cellval, w)
>       XX = quadcrossdev(dist,xmean,w,dist,xmean)  //fixed error on 11.17.2009
>       Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>       beta = invsym(XX)*Xy
>       beta = beta \ ymean-xmean*beta
>       cellsm[i] = beta[2,1]
>       //Show dots
>       if (verbose) {
>         if (mod(i,10) == 0) {
>           printf(".")
>           displayflush()
>           if (mod(i,500) == 0) {
>             printf(" %f LLR iterations\n",i)
>             displayflush()
>           }
>         }
>       }
>     }
>     printf("\n")
>
>     //set up stata variable to hold evaluation points for smoothed values
>     (void) st_addvar("float", evalname)
>     st_view(steval, ., evalname)
>     steval[|1\evalpts|] = at
>
>     //set up stata variable to hold smoothed values
>     (void) st_addvar("float", cellsmname)
>     st_view(stcellsm, ., cellsmname)
>     stcellsm[|1\evalpts|] = cellsm
>
>     //Calculate standard errors for LLR smoothed values
>     real scalar m                                       // amount of kernel being tr
> uncated by breakpoint
```

```
>     real colvector cellsmse                              // standard errors of smooth
> ed histogram
>     real colvector stcellsmse                            // stata view for cell midpo
> int variable
>     cellsmse = J(evalpts,1,0)  // initialize standard errors to zero
>     for (i = 1; i <= evalpts; i++) {
>       if (at[i] > c) {
>         m = max((-1, (c-at[i])/h))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2-3*m^11-24*m^10-83*m^9-72*m^8+42*m^7+18*m^6-18*m^5+18*m^4-3*m^3+18*m^2-1
> 5*m)/ ///
>             (1+m^6+6*m^5-3*m^4-4*m^3+9*m^2-6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>       if (at[i] < c) {
>         m = min(((c-at[i])/h, 1))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2+3*m^11-24*m^10+83*m^9-72*m^8-42*m^7+18*m^6+18*m^5+18*m^4-3*m^3+18*m^2+1
> 5*m)/ ///
>             (1+m^6-6*m^5-3*m^4+4*m^3+9*m^2+6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>     }
>     //set up stata variable to hold standard errors for smoothed values
>     (void) st_addvar("float", cellsmsename)
>     st_view(stcellsmse, ., cellsmsename)
>     stcellsmse[|1\evalpts|] = cellsmse
>   }
>   //End of loop over evaluation points
>
>   //Fill in STATA return codes
>   st_rclear()
>   st_numscalar("r(theta)", thetahat)
>   st_numscalar("r(se)", sethetahat)
>   st_numscalar("r(binsize)", b)
>   st_numscalar("r(bandwidth)", h)
> }
note: variable run may be used before set
note: variable stcellval may be used before set
note: variable stcellmp may be used before set
note: variable stcellsm may be used before set
note: variable atstata may be used before set
note: variable steval may be used before set
note: variable stcellsmse may be used before set
note: variable riqr set but not used
note: variable ehat unused

: end
```

```
642
643
644 *------------------------------------------------------------------------------*
645 *                                                          Hypothetical cutoffs
  >                                                *
646 *------------------------------------------------------------------------------*
647
648 use congress_yearly.dta, clear

649
```

```
650 drop posttreat

651 gen posttreat = "Pre"

652 replace posttreat = "Post" if year>2007
  variable posttreat was str3 now str4
  (168,677 real changes made)

653
654 * run McCrary for all cutoffs between 0.01 and 1
655 local j = 1

656 forvalues x=0.01(0.01)1 {
    2.     DCdensity percent_annualpay if posttreat == "Post" & percent_annualpay>=0 & p
  > ercent_annualpay <=1, breakpoint(`x') generate(Xj Yj r0 fhat se_fhat) nograph
    3.         gen treat_b_post`j' = r(theta)
    4.         gen treat_se_post`j' = r(se)
    5.         drop Xj Yj r0 fhat se_fhat
    6.     DCdensity percent_annualpay if posttreat == "Pre" & percent_annualpay>=0 & pe
  > rcent_annualpay <=1, breakpoint(`x') generate(Xj Yj r0 fhat se_fhat) nograph
    7.         gen treat_b_pre`j' = r(theta)
    8.         ge treat_se_pre`j' = r(se)
    9.         drop Xj Yj r0 fhat se_fhat
   10.         local j = `j'+1
   11. }
  Using default bin size calculation, bin size = .001103037
  Using default bandwidth calculation, bandwidth = .060028568

  Discontinuity estimate (log difference in height): .343696218
                                                     (.188998028)
  Performing LLR smoothing.
  908 iterations will be performed
  ..................................................... 500 LLR iterations
  ........................................
  Using default bin size calculation, bin size = .001145323
  Using default bandwidth calculation, bandwidth = .05496179

  Discontinuity estimate (log difference in height): .376819266
                                                     (.107300093)
  Performing LLR smoothing.
  875 iterations will be performed
  ..................................................... 500 LLR iterations
  ......................................
  Using default bin size calculation, bin size = .001103037
  Using default bandwidth calculation, bandwidth = .059993505

  Discontinuity estimate (log difference in height): -.062536634
                                                     (.150695958)
  Performing LLR smoothing.
  908 iterations will be performed
  ..................................................... 500 LLR iterations
  ........................................
  Using default bin size calculation, bin size = .001145323
  Using default bandwidth calculation, bandwidth = .054742023

  Discontinuity estimate (log difference in height): -.294224148
                                                     (.094806003)
  Performing LLR smoothing.
  875 iterations will be performed
  ..................................................... 500 LLR iterations
  ......................................
  Using default bin size calculation, bin size = .001103037
  Using default bandwidth calculation, bandwidth = .060934288
```

```
Discontinuity estimate (log difference in height): -.069521435
                                                   (.130704891)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .0577652

Discontinuity estimate (log difference in height): -.226279527
                                                   (.091352805)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .060538285

Discontinuity estimate (log difference in height): -.005318427
                                                   (.120012833)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .074561221

Discontinuity estimate (log difference in height): -.466286253
                                                   (.082649736)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .061302973

Discontinuity estimate (log difference in height): -.073610539
                                                   (.114282042)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .068311614

Discontinuity estimate (log difference in height): -.491608717
                                                   (.086526464)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .070178281

Discontinuity estimate (log difference in height): -.439186544
                                                   (.1055771)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .071742677

Discontinuity estimate (log difference in height): -.137578352
                                                   (.080024618)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .071102141
```

```
Discontinuity estimate (log difference in height): -.602400144
                                                   (.099623001)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .063897857

Discontinuity estimate (log difference in height): .066328055
                                                   (.076288091)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .070301959

Discontinuity estimate (log difference in height): -.262202207
                                                   (.089588056)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .061784711

Discontinuity estimate (log difference in height): -.208022292
                                                   (.068826624)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .08182261

Discontinuity estimate (log difference in height): -.816913067
                                                   (.08849285)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .070420727

Discontinuity estimate (log difference in height): -.108500568
                                                   (.060117485)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .081945946

Discontinuity estimate (log difference in height): -1.40835043
                                                   (.10226403)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .079193099

Discontinuity estimate (log difference in height): -.41284235
                                                   (.059289636)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .065884628
```

```
Discontinuity estimate (log difference in height): -.531888623
                                                   (.06971912)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .062401467

Discontinuity estimate (log difference in height): -.509981271
                                                   (.053133743)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .06970847

Discontinuity estimate (log difference in height): -1.35809945
                                                   (.081029088)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .073114343

Discontinuity estimate (log difference in height): -1.64678018
                                                   (.068213014)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .070927335

Discontinuity estimate (log difference in height): -1.93438043
                                                   (.086922663)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .073487375

Discontinuity estimate (log difference in height): -.616989974
                                                   (.045123383)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .081150803

Discontinuity estimate (log difference in height): -.391586037
                                                   (.042761658)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .081879052

Discontinuity estimate (log difference in height): .385688456
                                                   (.031706208)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .084109844
```

```
Discontinuity estimate (log difference in height): .344552725
                                                   (.030625272)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .096044741

Discontinuity estimate (log difference in height): .724611666
                                                   (.023748094)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .095470222

Discontinuity estimate (log difference in height): .767584919
                                                   (.023214719)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .095790083

Discontinuity estimate (log difference in height): .655033057
                                                   (.019784168)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .110907472

Discontinuity estimate (log difference in height): .821425262
                                                   (.017986035)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .073900261

Discontinuity estimate (log difference in height): .272937626
                                                   (.018937879)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .093884372

Discontinuity estimate (log difference in height): .406447876
                                                   (.016200081)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .064648946

Discontinuity estimate (log difference in height): .071820738
                                                   (.018226916)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .080884622
```

```
Discontinuity estimate (log difference in height): .131989232
                                                   (.015517075)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .063319566

Discontinuity estimate (log difference in height): -.03683593
                                                   (.017556116)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .076455101

Discontinuity estimate (log difference in height): .081944148
                                                   (.014970814)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .064430848

Discontinuity estimate (log difference in height): -.029039655
                                                   (.017111694)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .07829418

Discontinuity estimate (log difference in height): -.117761258
                                                   (.014458886)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .062026463

Discontinuity estimate (log difference in height): -.038877477
                                                   (.01751644)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .076397626

Discontinuity estimate (log difference in height): -.126438269
                                                   (.014658778)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .061527602

Discontinuity estimate (log difference in height): -.070675153
                                                   (.017963975)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .074193544
```

```
Discontinuity estimate (log difference in height): -.071637442
                                                   (.015023625)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .060715786

Discontinuity estimate (log difference in height): -.103088782
                                                   (.018733601)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072759806

Discontinuity estimate (log difference in height): -.038389929
                                                   (.015474428)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .061111327

Discontinuity estimate (log difference in height): -.073431052
                                                   (.019436824)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072935866

Discontinuity estimate (log difference in height): -.031259408
                                                   (.015842027)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .06109683

Discontinuity estimate (log difference in height): -.000738065
                                                   (.020081989)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .075148507

Discontinuity estimate (log difference in height): -.086922761
                                                   (.016021382)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .062353649

Discontinuity estimate (log difference in height): .040161297
                                                   (.020433445)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .07663478
```

```
Discontinuity estimate (log difference in height): -.045706818
                                                   (.016440551)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .064601118

Discontinuity estimate (log difference in height): .051236518
                                                   (.020558982)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .077921289

Discontinuity estimate (log difference in height): -.013126764
                                                   (.016850829)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .068739568

Discontinuity estimate (log difference in height): .008936223
                                                   (.020463919)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .082454056

Discontinuity estimate (log difference in height): -.052097977
                                                   (.016937782)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .072562609

Discontinuity estimate (log difference in height): -.049785125
                                                   (.020566924)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .087311223

Discontinuity estimate (log difference in height): -.072026386
                                                   (.0171191)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .07545243

Discontinuity estimate (log difference in height): -.024289692
                                                   (.020838602)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .087315403
```

```
Discontinuity estimate (log difference in height): .007795656
                                                   (.017787704)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .076541239

Discontinuity estimate (log difference in height): .037772245
                                                   (.021262997)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .092562487

Discontinuity estimate (log difference in height): -.020794809
                                                   (.017895096)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .078575001

Discontinuity estimate (log difference in height): .020928652
                                                   (.021555503)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .095494469

Discontinuity estimate (log difference in height): .015162965
                                                   (.018225877)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .079765897

Discontinuity estimate (log difference in height): .035492034
                                                   (.021952141)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .097384915

Discontinuity estimate (log difference in height): .031870485
                                                   (.018583029)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .08138798

Discontinuity estimate (log difference in height): .01714303
                                                   (.022289625)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .101620043
```

```
Discontinuity estimate (log difference in height): -.027671823
                                                   (.018730298)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .082154049

Discontinuity estimate (log difference in height): .010383715
                                                   (.022714056)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .100781138

Discontinuity estimate (log difference in height): .024163711
                                                   (.019282866)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .083441896

Discontinuity estimate (log difference in height): -.017932982
                                                   (.023119975)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .097701576

Discontinuity estimate (log difference in height): .063616761
                                                   (.020016045)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .083896455

Discontinuity estimate (log difference in height): -.012197889
                                                   (.023648009)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .102027478

Discontinuity estimate (log difference in height): -.022438937
                                                   (.019977755)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .08385213

Discontinuity estimate (log difference in height): .009934131
                                                   (.024232445)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .099538696
```

```
Discontinuity estimate (log difference in height): .004913073
                                                   (.020562318)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .083441343

Discontinuity estimate (log difference in height): .059868009
                                                   (.02482352)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .094660651

Discontinuity estimate (log difference in height): .087779565
                                                   (.021400963)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .084204082

Discontinuity estimate (log difference in height): .030091625
                                                   (.025161541)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .093640119

Discontinuity estimate (log difference in height): .050108479
                                                   (.021730984)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .087021031

Discontinuity estimate (log difference in height): .01134807
                                                   (.025266807)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .092765904

Discontinuity estimate (log difference in height): .009151386
                                                   (.02204977)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .088476694

Discontinuity estimate (log difference in height): -.02231199
                                                   (.025576966)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .089323495
```

```
Discontinuity estimate (log difference in height): .058505731
                                                   (.02262916)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .08776902

Discontinuity estimate (log difference in height): .000324292
                                                   (.026222911)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .090384765

Discontinuity estimate (log difference in height): -.038827901
                                                   (.022822183)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .089024354

Discontinuity estimate (log difference in height): -.015742153
                                                   (.026517227)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .088706585

Discontinuity estimate (log difference in height): -.00492931
                                                   (.023378228)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .090246216

Discontinuity estimate (log difference in height): .021207181
                                                   (.026782381)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .08547274

Discontinuity estimate (log difference in height): -.025012423
                                                   (.024050366)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .090454478

Discontinuity estimate (log difference in height): .027967839
                                                   (.027228434)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .086356748
```

```
Discontinuity estimate (log difference in height): -.038391947
                                                   (.024386119)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .090748053

Discontinuity estimate (log difference in height): .017529262
                                                   (.027638267)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .086331716

Discontinuity estimate (log difference in height): .01384063
                                                   (.024842703)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .090200929

Discontinuity estimate (log difference in height): .040370039
                                                   (.028227202)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .08747573

Discontinuity estimate (log difference in height): -.03510114
                                                   (.025057609)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .09459525

Discontinuity estimate (log difference in height): -.013194743
                                                   (.028046603)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .087663702

Discontinuity estimate (log difference in height): -.003841288
                                                   (.025547736)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .0963097

Discontinuity estimate (log difference in height): -.014733984
                                                   (.028314691)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .088130521
```

```
Discontinuity estimate (log difference in height): .055753866
                                                   (.025966676)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .096485911

Discontinuity estimate (log difference in height): .010822734
                                                   (.028816383)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .090362368

Discontinuity estimate (log difference in height): -.052233263
                                                   (.026151314)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .097163768

Discontinuity estimate (log difference in height): .000183509
                                                   (.029211435)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .096136301

Discontinuity estimate (log difference in height): -.093892132
                                                   (.026154396)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .100727118

Discontinuity estimate (log difference in height): .033484326
                                                   (.029247369)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .097454135

Discontinuity estimate (log difference in height): -.015120588
                                                   (.026669222)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .101874727

Discontinuity estimate (log difference in height): .051918925
                                                   (.029569055)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .100058746
```

```
Discontinuity estimate (log difference in height): -.006630166
                                                   (.026887838)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .103354689

Discontinuity estimate (log difference in height): .018814544
                                                   (.029841385)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .101674372

Discontinuity estimate (log difference in height): .044042901
                                                   (.027156384)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .107982423

Discontinuity estimate (log difference in height): -.029850432
                                                   (.029738874)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .10403144

Discontinuity estimate (log difference in height): .047426323
                                                   (.027330726)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .107294841

Discontinuity estimate (log difference in height): -.058990737
                                                   (.030476954)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .107815466

Discontinuity estimate (log difference in height): .001934271
                                                   (.02735558)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .106168038

Discontinuity estimate (log difference in height): -.05967199
                                                   (.031324868)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .109544668
```

```
Discontinuity estimate (log difference in height): .01914252
                                                   (.027632838)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .109171579

Discontinuity estimate (log difference in height): -.000632127
                                                   (.031526721)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .111417216

Discontinuity estimate (log difference in height): .027314783
                                                   (.027841327)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .110405025

Discontinuity estimate (log difference in height): .037820226
                                                   (.031857017)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .106526698

Discontinuity estimate (log difference in height): -.075383155
                                                   (.028957538)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .113026177

Discontinuity estimate (log difference in height): .06047499
                                                   (.031889011)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .106785882

Discontinuity estimate (log difference in height): -.038636423
                                                   (.029428955)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .110039418

Discontinuity estimate (log difference in height): .001161363
                                                   (.032742353)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .110288086
```

```
Discontinuity estimate (log difference in height): .086008674
                                                   (.029322657)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .113413009

Discontinuity estimate (log difference in height): .040829417
                                                   (.032709433)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .106008878

Discontinuity estimate (log difference in height): .009235181
                                                   (.030260097)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .111435076

Discontinuity estimate (log difference in height): .072520446
                                                   (.033467194)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .105328114

Discontinuity estimate (log difference in height): .035551263
                                                   (.030643274)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .113372366

Discontinuity estimate (log difference in height): .05116884
                                                   (.033613237)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .108465711

Discontinuity estimate (log difference in height): .123249471
                                                   (.030295384)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .108870043

Discontinuity estimate (log difference in height): -.011063754
                                                   (.034820359)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .101624453
```

```
Discontinuity estimate (log difference in height): .031750108
                                                   (.031336977)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .104855651

Discontinuity estimate (log difference in height): -.008217034
                                                   (.036096996)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .100851732

Discontinuity estimate (log difference in height): .012544744
                                                   (.031514922)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .098412812

Discontinuity estimate (log difference in height): -.107953879
                                                   (.038175411)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .096841592

Discontinuity estimate (log difference in height): -.101908028
                                                   (.032290152)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .096379286

Discontinuity estimate (log difference in height): -.082809937
                                                   (.039811524)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .095968432

Discontinuity estimate (log difference in height): -.037912854
                                                   (.03268762)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .093998989

Discontinuity estimate (log difference in height): -.0732038
                                                   (.041628977)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .096483396
```

```
Discontinuity estimate (log difference in height): .069308817
                                                   (.032782762)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .090526246

Discontinuity estimate (log difference in height): .025792214
                                                   (.043682107)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .096088703

Discontinuity estimate (log difference in height): .100914452
                                                   (.032884957)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .089529915

Discontinuity estimate (log difference in height): .05406779
                                                   (.044793219)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .093776902

Discontinuity estimate (log difference in height): .042894142
                                                   (.033430471)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .088819038

Discontinuity estimate (log difference in height): .094599116
                                                   (.045647485)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .091185873

Discontinuity estimate (log difference in height): -.03938935
                                                   (.034259204)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .086996037

Discontinuity estimate (log difference in height): .039091111
                                                   (.046594926)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .088173872
```

```
Discontinuity estimate (log difference in height): -.181137105
                                                   (.035603789)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .083231906

Discontinuity estimate (log difference in height): -.002296171
                                                   (.048207961)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .088352767

Discontinuity estimate (log difference in height): -.062925517
                                                   (.036334176)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .08209677

Discontinuity estimate (log difference in height): -.014325732
                                                   (.049096011)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .087308048

Discontinuity estimate (log difference in height): .046150856
                                                   (.037189199)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .080718767

Discontinuity estimate (log difference in height): -.010376732
                                                   (.050317403)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .08526865

Discontinuity estimate (log difference in height): -.022439008
                                                   (.038161791)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .079651814

Discontinuity estimate (log difference in height): .00740417
                                                   (.051635516)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .084469066
```

```
Discontinuity estimate (log difference in height): .095753987
                                                   (.039063274)
Performing LLR smoothing.
908 iterations will be performed
.................................................. 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .076837413

Discontinuity estimate (log difference in height): .051115898
                                                   (.053591771)
Performing LLR smoothing.
875 iterations will be performed
.................................................. 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .083192926

Discontinuity estimate (log difference in height): .095170896
                                                   (.039549151)
Performing LLR smoothing.
908 iterations will be performed
.................................................. 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .075433145

Discontinuity estimate (log difference in height): -.133851332
                                                   (.055531587)
Performing LLR smoothing.
875 iterations will be performed
.................................................. 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .081478289

Discontinuity estimate (log difference in height): -.03537185
                                                   (.04027544)
Performing LLR smoothing.
908 iterations will be performed
.................................................. 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .073953244

Discontinuity estimate (log difference in height): -.116065001
                                                   (.057951676)
Performing LLR smoothing.
875 iterations will be performed
.................................................. 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .079350764

Discontinuity estimate (log difference in height): -.066269007
                                                   (.041549005)
Performing LLR smoothing.
908 iterations will be performed
.................................................. 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .072488918

Discontinuity estimate (log difference in height): .105116075
                                                   (.059934602)
Performing LLR smoothing.
875 iterations will be performed
.................................................. 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .078744045
```

```
Discontinuity estimate (log difference in height): -.021213263
                                                   (.042520101)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .071286824

Discontinuity estimate (log difference in height): .016073736
                                                   (.060868708)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .077482144

Discontinuity estimate (log difference in height): -.013167361
                                                   (.043965376)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .070201716

Discontinuity estimate (log difference in height): .007380351
                                                   (.062134914)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .076159313

Discontinuity estimate (log difference in height): -.020261599
                                                   (.045445516)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .069922512

Discontinuity estimate (log difference in height): .079187334
                                                   (.062878712)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .075364575

Discontinuity estimate (log difference in height): .051876933
                                                   (.046583887)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .068403761

Discontinuity estimate (log difference in height): .039360055
                                                   (.064115617)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .073747715
```

```
Discontinuity estimate (log difference in height): -.140365848
                                                   (.048426929)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .067828515

Discontinuity estimate (log difference in height): -.118361621
                                                   (.065858164)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072761516

Discontinuity estimate (log difference in height): -.069198464
                                                   (.04964507)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .067323413

Discontinuity estimate (log difference in height): -.046210984
                                                   (.068493343)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .07189454

Discontinuity estimate (log difference in height): .078473245
                                                   (.050266027)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .066885796

Discontinuity estimate (log difference in height): -.094729913
                                                   (.0710909)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .074653981

Discontinuity estimate (log difference in height): -.244758941
                                                   (.052156039)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .068541418

Discontinuity estimate (log difference in height): -.132811459
                                                   (.072608214)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
.....................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072901386
```

```
Discontinuity estimate (log difference in height): -.299203961
                                                   (.054936973)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .067847569

Discontinuity estimate (log difference in height): -.398904117
                                                   (.078764445)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .071814131

Discontinuity estimate (log difference in height): -.530334419
                                                   (.056901113)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .066855891

Discontinuity estimate (log difference in height): -.294556163
                                                   (.080629705)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .071495918

Discontinuity estimate (log difference in height): -.401027165
                                                   (.052985237)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .066446936

Discontinuity estimate (log difference in height): -.146288182
                                                   (.074715929)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072219414

Discontinuity estimate (log difference in height): .352657574
                                                   (.045065366)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .066778528

Discontinuity estimate (log difference in height): .174287155
                                                   (.063347147)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
......................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .072379713
```

```
Discontinuity estimate (log difference in height): .793862985
                                                   (.040357659)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .067879027

Discontinuity estimate (log difference in height): .733975528
                                                   (.055926916)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .070275575

Discontinuity estimate (log difference in height): 1.2035919
                                                   (.038532218)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .068691708

Discontinuity estimate (log difference in height): 1.01127217
                                                   (.050602431)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .070331258

Discontinuity estimate (log difference in height): .08165969
                                                   (.029478755)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .066545799

Discontinuity estimate (log difference in height): -.042997619
                                                   (.041950264)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .065258125

Discontinuity estimate (log difference in height): -.303013159
                                                   (.031937092)
Performing LLR smoothing.
908 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001145323
Using default bandwidth calculation, bandwidth = .060166541

Discontinuity estimate (log difference in height): -.094120065
                                                   (.045463824)
Performing LLR smoothing.
875 iterations will be performed
..................................................... 500 LLR iterations
........................................
Using default bin size calculation, bin size = .001103037
Using default bandwidth calculation, bandwidth = .06565945
```

```
  Discontinuity estimate (log difference in height): -1.43890114
                                                     (.049346374)
  Performing LLR smoothing.
  908 iterations will be performed
  ..................................................  500 LLR iterations
  ....................................
  Using default bin size calculation, bin size = .001145323
  Using default bandwidth calculation, bandwidth = .05758226

  Discontinuity estimate (log difference in height): -1.04439468
                                                     (.06534729)
  Performing LLR smoothing.
  875 iterations will be performed
  ..................................................  500 LLR iterations
  ..................................

657
658 * only keep one observation and reshape wide to long
659 keep if _n==1
  (304,565 observations deleted)

660 gen count = _n

661 keep treat_b* treat_se* count

662 reshape long treat_b_post treat_se_post treat_b_pre treat_se_pre, i(count) j(cutoff)
  (note: j = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
  > 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
  > 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84
  > 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99)

  Data                               wide   ->   long
  -----------------------------------------------------------------------------
  Number of obs.                        1   ->     99
  Number of variables                 397   ->      6
  j variable (99 values)                    ->   cutoff
  xij variables:
  treat_b_post1 treat_b_post2 ... treat_b_post99->treat_b_post
  treat_se_post1 treat_se_post2 ... treat_se_post99->treat_se_post
  treat_b_pre1 treat_b_pre2 ... treat_b_pre99->  treat_b_pre
  treat_se_pre1 treat_se_pre2 ... treat_se_pre99->treat_se_pre
  -----------------------------------------------------------------------------

663 foreach x in post pre {
    2.     gen high_`x' = treat_b_`x' + 1.96 * treat_se_`x'
    3.         gen low_`x' = treat_b_`x' - 1.96 * treat_se_`x'
    4. }

664 replace cutoff = cutoff / 100
  variable cutoff was byte now float
  (99 real changes made)

665
666 * plot hypothetical cutoffs (btw 0.2 and 0.8)
667 twoway (scatter treat_b_post cutoff if cutoff!=.75 & cutoff>=0.2 & cutoff<=0.8, grap
  > hregion(color(white)) ///
  >                       mcolor(black) msymbol(circle) msize(small) legend(off) yline
  > (0, lcolor(black)) xtitle("Hypothetical cutoff points") ytitle("") title(, color(bla
  > ck)) lpattern(dash)) ///
  >                 (scatter treat_b_post cutoff if cutoff==.75, mcolor(red) msymbol(cir
  > cle) msize(small)) ///
  >                 (rspike high_post low_post cutoff if cutoff!=.75 & cutoff>=0.2 & cut
  > off<=0.8, lcolor(black) lpattern(solid)) ///
  >                 (rspike high_post low_post cutoff if cutoff==.75, lcolor(red) lpatte
  > rn(solid))
```

```
  end of do-file

  do FIGUREF7.do

  /*****************************************************************************\
  > |    Title:              FIGUREE7: Robustness of the effect of switching on becoming
  > |
  > |                                        a lobbiyst
  >                                                                  |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/


  clear all

  set more off, permanently
  (set more preference recorded)

  numlabel, add
  (dataset has no value labels)

  set maxvar 32000



  use congress_yearly.dta, clear

  xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit

  *-----------------------------------------------------------------------------*
  *                                                                Leaving for other re
  > asons                                          *
  *-----------------------------------------------------------------------------*


  xtreg lastyear switchtouncovered_treatment daysworked experience_imp experience_sq c
  > ommitteestaff_everyear personalstaff_everyear senate_everyear majority_everyear mino
  > rity_everyear dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 &
  > lobbydirectafter==0, fe cluster(stafferid)
  note: 2015.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    112,122
  Group variable: stafferid                       Number of groups  =     31,150

  R-sq:                                           Obs per group:
       within  = 0.6930                                         min =          1
       between = 0.4682                                         avg =        3.6
       overall = 0.5585                                         max =          8

                                                  F(17,31149)       =    5069.91
  corr(u_i, Xb)  = -0.1102                        Prob > F          =     0.0000
```

```
                                                (Std. Err. adjusted for 31,150 clusters in sta
> fferid)
------------------------------------------------------------------------------
             |               Robust
    lastyear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |  -.0039555   .0130838    -0.30   0.762    -.0296002    .
> 0216893
         daysworked |  -.0030657   .0000132  -232.06   0.000    -.0030916   -.
> 0030398
     experience_imp |   .0323029   .0007525    42.93   0.000     .0308279    .
> 0337778
      experience_sq |    -.00064   .0000318   -20.10   0.000    -.0007024   -.
> 0005775
committeestaff_everyear |  -.0135452   .0042955    -3.15   0.002    -.0219645   -.
> 0051259
 personalstaff_everyear |     .02944   .0093309     3.16   0.002     .011151    .
> 0477291
       senate_everyear |  -.0127098   .0061346    -2.07   0.038    -.0247339   -.
> 0006858
     majority_everyear |  -.0292478   .0064768    -4.52   0.000    -.0419426   -.
> 0165529
     minority_everyear |  -.0278867   .0064986    -4.29   0.000    -.0406242   -.
> 0151492
     dcoffice_everyear |  -.0125415   .0058275    -2.15   0.031    -.0239637   -.
> 0011194
leaderofficestaff_everyear |  -.0092506   .0091575    -1.01   0.312    -.0271996    .
> 0086983
             |
        year |
        2009 |   .0194234   .0019742     9.84   0.000     .0155538
> .023293
        2010 |   .0150901   .0021107     7.15   0.000      .010953    .
> 0192272
        2011 |   .0108009   .0022047     4.90   0.000     .0064795    .
> 0151222
        2012 |   .0056036   .0021984     2.55   0.011     .0012946    .
> 0099126
        2013 |    .013371    .002271     5.89   0.000     .0089199    .
> 0178222
        2014 |   .0011762   .0022065     0.53   0.594    -.0031486    .
> 0055009
        2015 |          0  (omitted)
             |
       _cons |   1.016446   .0078918   128.80   0.000     1.000978    1
> .031915
-------------+----------------------------------------------------------------
       sigma_u |  .25934258
       sigma_e |  .18852962
           rho |  .65425362   (fraction of variance due to u_i)
------------------------------------------------------------------------------

691
692 est store modelrob1
```

```
693
694
695 *------------------------------------------------------------------------------*
696 *                                                 Dropping those leaving in Ja
  > nuary                                  *
697 *------------------------------------------------------------------------------*
698
699 * Januar is an indicator for whether a staffer left before January2 in a year
700 xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear dcoffice_everyear leaderofficestaff_everyear i.year if posttre
  > at==1 & januar==0, fe cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    116,979
  Group variable: stafferid                       Number of groups  =     31,288

  R-sq:                                           Obs per group:
       within  = 0.0577                                         min =          1
       between = 0.0151                                         avg =        3.7
       overall = 0.0334                                         max =          9

                                                  F(18,31287)       =      65.53
  corr(u_i, Xb)  = -0.1144                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 31,288 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------
    _______
               lobbydirectafter |      Coef.   Robust
  > terval]                     |               Std. Err.      t    P>|t|     [95% Conf. In
  -------------------------------+----------------------------------------------------------
    _______
  switchtouncovered_treatment |   .0201763   .0096191     2.10   0.036     .0013224    .
  > 0390301
                  daysworked |  -.0002992   .0000103   -29.02   0.000    -.0003194    -
  > .000279
              experience_imp |    .002527   .0003455     7.31   0.000     .0018498    .
  > 0032043
               experience_sq |   .0000123   .0000154     0.80   0.423    -.0000178    .
  > 0000424
     committeestaff_everyear |  -.0039343   .0029397    -1.34   0.181    -.0096963    .
  > 0018277
      personalstaff_everyear |  -.0111825   .0045838    -2.44   0.015     -.020167    -
  > .002198
            senate_everyear |  -.0014436   .0028792    -0.50   0.616    -.0070869    .
  > 0041997
          majority_everyear |  -.0020836   .0031585    -0.66   0.509    -.0082745    .
  > 0041072
          minority_everyear |  -.0079638   .0032042    -2.49   0.013    -.0142441   -.
  > 0016835
          dcoffice_everyear |   .0057698   .0016163     3.57   0.000     .0026018    .
  > 0089378
   leaderofficestaff_everyear |  -.0000676   .0046059    -0.01   0.988    -.0090953    .
  > 0089601
                             |
                        year |
                        2009 |   .0018588   .0010801     1.72   0.085    -.0002583    .
  > 0039759
                        2010 |   .0053594   .0012328     4.35   0.000     .0029431    .
  > 0077757
                        2011 |   .0057584   .0013232     4.35   0.000     .0031648
  > .008352
                        2012 |   .0020593    .001287     1.60   0.110    -.0004633    .
  > 0045818
                        2013 |   .0017043   .0014245     1.20   0.232    -.0010877    .
  > 0044964
                        2014 |   .0029384   .0014914     1.97   0.049     .0000153    .
  > 0058616
                        2015 |  -.0008633   .0015413    -0.56   0.575    -.0038844    .
  > 0021577
```

```
                    2016 |          0  (omitted)
                         |
                   _cons |   .1019974   .0047068    21.67   0.000     .0927718
> .111223
------------------------+----------------------------------------------------------
  _______
                 sigma_u |   .1105384
                 sigma_e |   .1041367
                     rho |  .52979391   (fraction of variance due to u_i)
------------------------+----------------------------------------------------------
  _______

est store modelrob2

coefplot modelrob1, bylabel(Other leaving) keep(switchtouncovered_treatment switchto
> covered_treatment) ///
>        || modelrob2, bylabel(Dropping staff leaving in January) keep(switchtouncover
> ed_treatment switchtocovered_treatment) xlab(1 "Switch to uncov." 2 "Switch to cov."
> )  ///
>        ||, drop(_cons) yline(0) vertical  ytitle("Effect estimate") ylabel(-0.04 -0.
> 02 0 0.02 0.04) coeflabels(switchtouncovered_treatment = "Switch to uncov." switchto
> covered_treatment = "Switch to cov.")


coefplot (modelrob1, rename(switchtouncovered_treatment = "other") mcolor(black) cio
> pts(color(black))) (modelrob2, rename(switchtouncovered_treatment = "januar") mcolor
> (black) ciopts(color(black))),  keep(switchtouncovered_treatment) coeflabel(other  =
>  "Other exits" januar = "Dropping staffers leaving in Jan", labsize(small)) offset(0
> ) legend(off) drop(_cons) yline(0, lcolor(black)) vertical  ytitle("Effect estimate
> for switch to uncovered") ylabel(-0.04 -0.02 0 0.02 0.04) legend(off) graphregion(co
> lor(white)) title("Spurious relationship", color(black)) name(modelrob, replace)



*-------------------------------------------------------------------------------*
*                        Controlling for size in jump of salaries and level of pay
>                *
*-------------------------------------------------------------------------------*
>

* account for level of pay
xtreg lobbydirectafter switchtouncovered_treatment adjdaily_annualpay daysworked exp
> erience_imp experience_sq committeestaff_everyear personalstaff_everyear senate_ever
> year majority_everyear minority_everyear dcoffice_everyear leaderofficestaff_everyea
> r i.year if posttreat==1, fe cluster(stafferid)
note: 2016.year omitted because of collinearity

Fixed-effects (within) regression               Number of obs     =    128,067
Group variable: stafferid                       Number of groups  =     34,438

R-sq:                                           Obs per group:
     within  = 0.0588                                         min =          1
     between = 0.0149                                         avg =        3.7
     overall = 0.0341                                         max =          9

                                                F(19,34437)       =      72.51
corr(u_i, Xb)  = -0.1156                        Prob > F          =     0.0000
```

(Std. Err. adjusted for **34,438** clusters in sta
> fferid)

| lobbydirectafter | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| switchtouncovered_treatment | **.0228082** | **.0092647** | **2.46** | **0.014** | **.0046491** | **.**
> **0409674** |
| adjdaily_annualpay | **2.32e-06** | **3.05e-06** | **0.76** | **0.448** | **-3.67e-06** | **8**
> **.31e-06** |
| daysworked | **-.0002691** | **8.69e-06** | **-30.96** | **0.000** | **-.0002862** | **-.**
> **0002521** |
| experience_imp | **.0026771** | **.0003379** | **7.92** | **0.000** | **.0020148** | **.**
> **0033395** |
| experience_sq | **9.94e-06** | **.0000151** | **0.66** | **0.511** | **-.0000197** | **.**
> **0000396** |
| committeestaff_everyear | **-.0052958** | **.002902** | **-1.82** | **0.068** | **-.0109837** | **.**
> **0003921** |
| personalstaff_everyear | **-.0137796** | **.0044784** | **-3.08** | **0.002** | **-.0225575** | **-.**
> **0050018** |
| senate_everyear | **-.0010665** | **.0028403** | **-0.38** | **0.707** | **-.0066335** | **.**
> **0045005** |
| majority_everyear | **-.001815** | **.0030914** | **-0.59** | **0.557** | **-.0078742** | **.**
> **0042443** |
| minority_everyear | **-.0085603** | **.0031426** | **-2.72** | **0.006** | **-.01472** | **-.**
> **0024007** |
| dcoffice_everyear | **.0080143** | **.0016026** | **5.00** | **0.000** | **.0048731** | **.**
> **0111555** |
| leaderofficestaff_everyear | **-.0000418** | **.0046858** | **-0.01** | **0.993** | **-.0092261** | **.**
> **0091425** |
| year | | | | | | |
| 2009 | **.0020554** | **.0010406** | **1.98** | **0.048** | **.0000157** | **.**
> **0040951** |
| 2010 | **.0051817** | **.0011295** | **4.59** | **0.000** | **.0029677** | **.**
> **0073956** |
| 2011 | **.0041599** | **.0013148** | **3.16** | **0.002** | **.0015829** | **.**
> **0067369** |
| 2012 | **.00152** | **.0012418** | **1.22** | **0.221** | **-.000914** | **.**
> **0039541** |
| 2013 | **.0004715** | **.0014094** | **0.33** | **0.738** | **-.0022909** |
> **.003234** |
| 2014 | **.0022691** | **.0014555** | **1.56** | **0.119** | **-.0005837** | **.**
> **0051219** |
| 2015 | **-.0034666** | **.001517** | **-2.29** | **0.022** | **-.0064399** | **-.**
> **0004933** |
| 2016 | **0** | (omitted) | | | | |
| _cons | **.0915812** | **.0043702** | **20.96** | **0.000** | **.0830155** |
> **.100147** |

sigma_u	**.10993102**
sigma_e	**.10672743**
rho	**.51478313** (fraction of variance due to u_i)

```
717 est store changesgen1

718
719 * account for change in pay
720 xtreg lobbydirectafter switchtouncovered_treatment salarydiff daysworked experience_
  > imp experience_sq committeestaff_everyear personalstaff_everyear senate_everyear maj
  > ority_everyear minority_everyear dcoffice_everyear leaderofficestaff_everyear i.year
  >  if posttreat==1, fe  cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    128,067
  Group variable: stafferid                       Number of groups  =     34,438

  R-sq:                                           Obs per group:
       within  = 0.0588                                         min =          1
       between = 0.0147                                         avg =        3.7
       overall = 0.0340                                         max =          9

                                                  F(19,34437)       =      72.51
  corr(u_i, Xb)  = -0.1155                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 34,438 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------
               |               Robust
    lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  -------------------------------------------------------------------------------
  switchtouncovered_treatment |   .0228896    .009297     2.46   0.014     .0046672
  > .041112
                  salarydiff |   .0006684   .0014462     0.46   0.644    -.0021663
  > .003503
                  daysworked |    -.00027   8.66e-06   -31.16   0.000    -.0002869    -
  > .000253
           experience_imp |   .0026961   .0003374     7.99   0.000     .0020347    .
  > 0033574
            experience_sq |   9.53e-06   .0000151     0.63   0.528      -.00002    .
  > 0000391
    committeestaff_everyear |  -.0052569   .0029014    -1.81   0.070    -.0109437    .
  > 0004298
     personalstaff_everyear |  -.0138188   .0044786    -3.09   0.002     -.022597   -.
  > 0050407
          senate_everyear |  -.0010813   .0028411    -0.38   0.704      -.00665    .
  > 0044874
        majority_everyear |  -.0018339   .0030914    -0.59   0.553    -.0078932    .
  > 0042253
        minority_everyear |  -.0085524   .0031431    -2.72   0.007     -.014713   -.
  > 0023919
        dcoffice_everyear |   .0080218   .0016029     5.00   0.000     .0048801    .
  > 0111635
 leaderofficestaff_everyear |  -.0000166    .004686    -0.00   0.997    -.0092013    .
  > 0091681
                       |
                  year |
                  2009 |   .0020804   .0010402     2.00   0.046     .0000415    .
  > 0041192
                  2010 |   .0051969   .0011293     4.60   0.000     .0029835    .
  > 0074104
                  2011 |   .0042436   .0013123     3.23   0.001     .0016714    .
  > 0068159
                  2012 |   .0015461   .0012415     1.25   0.213    -.0008873    .
  > 0039795
                  2013 |   .0004762   .0014098     0.34   0.736    -.0022869    .
  > 0032394
                  2014 |   .0022825   .0014565     1.57   0.117    -.0005723    .
  > 0051373
                  2015 |  -.0034343    .001517    -2.26   0.024    -.0064076   -.
  > 0004609
                  2016 |          0  (omitted)
                       |
```

```
                     _cons |   .0922572   .0042513    21.70   0.000     .0839245    .
> 1005898
-------------------------------------------------------------------------------
  _______
                   sigma_u |  .10995223
                   sigma_e |  .10672885
                       rho |  .51487286   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
  _______

721 est store changesgen2

722
723
724 *-------------------------------------------------------------------------------*
725 *  Effect of salary decreases/increases generally and those excluding switches *
726 *-------------------------------------------------------------------------------*
  >
727
728 ** Othersalarydrop captures pseudo switches: from below 75% to lower
729
730 xtreg lobbydirectafter othersalarydrop daysworked experience_imp experience_sq commi
  > tteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority
  > _everyear dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe cl
  > uster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    127,379
  Group variable: stafferid                       Number of groups  =     34,403

  R-sq:                                           Obs per group:
       within  = 0.0571                                         min =          1
       between = 0.0141                                         avg =        3.7
       overall = 0.0330                                         max =          9

                                                  F(18,34402)       =      74.05
  corr(u_i, Xb)  = -0.1103                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 34,403 clusters in staf
  > ferid)
------------------------------------------------------------------------------
  ______
             lobbydirectafter |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  ______
              othersalarydrop |   .0002592    .000944     0.27   0.784    -.0015911    .0
  > 021095
                   daysworked |  -.0002658   8.53e-06   -31.17   0.000    -.0002825   -.0
  > 002491
                experience_imp |   .0027335   .0003312     8.25   0.000     .0020843    .0
  > 033827
                  experience_sq |   3.50e-06   .0000148     0.24   0.813    -.0000254    .0
  > 000324
     committeestaff_everyear |  -.0053503   .0029061    -1.84   0.066    -.0110463    .0
  > 003457
      personalstaff_everyear |  -.0140719   .0044107    -3.19   0.001     -.022717   -.0
  > 054269
               senate_everyear |  -.0012456   .0028395    -0.44   0.661    -.0068112
  > .00432
             majority_everyear |  -.0013312   .0030481    -0.44   0.662    -.0073054    .0
  > 046431
             minority_everyear |  -.0082297   .0030926    -2.66   0.008    -.0142913   -.0
  > 021681
             dcoffice_everyear |   .0079222   .0016027     4.94   0.000     .0047807    .0
  > 110636
  leaderofficestaff_everyear |  -.0001561   .0045837    -0.03   0.973    -.0091404    .0
  > 088281
                             |
                        year |
                        2009 |   .0020184   .0010393     1.94   0.052    -.0000187    .0
```

```
> 040554
                    2010 |   .0051128   .0011179     4.57   0.000     .0029216     .
> 007304
                    2011 |    .004571     .00131     3.49   0.000     .0020033    .0
> 071388
                    2012 |   .0015714   .0012407     1.27   0.205    -.0008604    .0
> 040033
                    2013 |   .0004977   .0014048     0.35   0.723    -.0022557    .0
> 032512
                    2014 |   .0021208   .0014371     1.48   0.140    -.0006959    .0
> 049376
                    2015 |  -.0033409   .0015062    -2.22   0.027    -.0062931   -.0
> 003887
                    2016 |          0  (omitted)
                         |
                   _cons |   .0911011   .0042311    21.53   0.000      .082808    .0
> 993942
-------------------------+------------------------------------------------------------
  ------

                   sigma_u |  .10986178
                   sigma_e |  .10558477
                       rho |    .519844   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  ------

731 est store changesgen3

732
733 coefplot changesgen1, bylabel(Conditioning on pay level) keep(switchtouncovered_trea
  > tment switchtocovered_treatment)  ///
  >        || changesgen2, bylabel(Conditioning on pay diff) keep(switchtouncovered_trea
  > tment switchtocovered_treatment) ///
  >            || changesgen3, bylabel(Other salary changes) keep(switchtouncovered_trea
  > tment switchtocovered_treatment) ///
  >        ||, drop(_cons) yline(0) vertical  ytitle("Effect estimate") ylabel(-0.04 -0.
  > 02 0 0.02 0.04) byopts(rows(1)) coeflabels(, labsize(small))
  (changesgen3: no coefficients found, all dropped, or none kept)

734
735 coefplot (changesgen1, rename(switchtouncovered_treatment = "contr1") mcolor(black)
  > ciopts(color(black))) (changesgen2, rename(switchtouncovered_treatment = "contr2") m
  > color(black) ciopts(color(black))) (changesgen3, rename(othersalarydrop = "contr3")
  > mcolor(black) ciopts(color(black))),  keep(switchtouncovered_treatment othersalarydr
  > op) coeflabel(contr1  = "Cond. on pay level" contr2 = "Cond. on pay diff" contr3 = "
  > Other salary drop", labsize(small)) offset(0) legend(off) drop(_cons) yline(0, lcolo
  > r(black)) vertical  ytitle("Effect estimate for switches/pay drops") ylabel(-0.04 -0
  > .02 0 0.02 0.04) legend(off) graphregion(color(white)) title("Effects of general pay
  >  changes", color(black)) name(modelchange, replace)

736
737 graph combine modelrob modelchange, ycommon graphregion(color(white))

738
  end of do-file

739 do FIGUREF8.do

740
741 /*******************************************************************************\
  > |    Title:              FIGUREE8: Placebo Analysis for the Effect of Switching on |
  > |                                                lobbying revenue
  >                                                        |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
```

```
742
743
744 clear all

745 set more off, permanently
  (set more preference recorded)

746 numlabel, add
  (dataset has no value labels)

747 set maxvar 32000


748
749
750 use lobbyist_yearly.dta, clear

751
752 * regression
753 reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving experience_imp daysworked commi
  > tteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority
  > _everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  > if posttreat==0, cluster(stafferid)
  note: 1.switcher#6.yearsinceleaving identifies no observations in the sample
  note: dcoffice_everyear omitted because of collinearity

  Linear regression                               Number of obs     =        558
                                                  F(25, 197)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.1427
                                                  Root MSE          =     2.2863

                                               (Std. Err. adjusted for 198 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
               |               Robust
  log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  -------------+----------------------------------------------------------------
        1.switcher |  -.7653142   1.048789    -0.73   0.466    -2.833608     1
  > .30298
                   |
     yearsinceleaving |
                   1 |   .8908139   .2855986     3.12   0.002     .3275908    1.
  > 454037
                   2 |   1.198721   .2435694     4.92   0.000     .7183825    1.
  > 679059
                   3 |    1.03117   .4335963     2.38   0.018     .1760835    1.
  > 886256
                   4 |   1.318081   .5154558     2.56   0.011     .3015614    2.
  > 334601
                   5 |   1.869563   .4539095     4.12   0.000     .9744179    2.
  > 764709
                   6 |  -11.48607   .5694308   -20.17   0.000    -12.60904   -10
  > .36311
                   |
   switcher#yearsinceleaving |
                 1 1 |   .8559908   .8549482     1.00   0.318    -.8300347    2.
  > 542016
                 1 2 |  -1.190956   1.096051    -1.09   0.279    -3.352455    .9
  > 705434
                 1 3 |   .2336421   .8489814     0.28   0.783    -1.440616    1.
  > 907901
                 1 4 |   .8722631   1.020599     0.85   0.394    -1.140439    2.
  > 884965
                 1 5 |   .5891243   .9125816     0.65   0.519    -1.210559    2.
  > 388807
                 1 6 |          0  (empty)
                   |
       experience_imp |   .0155891   .0192872     0.81   0.420    -.0224468    .0
```

```
> 536251
             daysworked |  -.0012749   .0010592    -1.20   0.230    -.0033636    .0
> 008139
  committeestaff_everyear |   .1276134   .3001559     0.43   0.671    -.4643178    .7
> 195447
   personalstaff_everyear |   1.241281   .5722993     2.17   0.031     .1126613
> 2.3699
         senate_everyear |   .3630594   .3263905     1.11   0.267    -.2806085    1.
> 006727
       majority_everyear |  -.3481603   .5394039    -0.65   0.519    -1.411907    .7
> 155868
       minority_everyear |  -1.356111   .5813284    -2.33   0.021    -2.502536   -.2
> 096853
       dcoffice_everyear |          0  (omitted)
leaderofficestaff_everyear |   .8865862   .2506061     3.54   0.001     .3923712    1.
> 380801
   log_max_adjannual_pay |    1.27665   .5930385     2.15   0.033     .1071312    2.
> 446169
                         |
                    year |
                    2002 |   1.45249   .8964259     1.62   0.107    -.3153323    3.
> 220313
                    2003 |   1.708338   .7738555     2.21   0.028     .1822339    3.
> 234442
                    2004 |   .9672475   .7640821     1.27   0.207    -.5395829    2.
> 474078
                    2005 |   1.126637   .7694161     1.46   0.145    -.3907127    2.
> 643986
                    2006 |   .9447648   .7860849     1.20   0.231    -.6054568    2.
> 494986
                    2007 |   .7230709   .8255689     0.88   0.382    -.9050162    2.
> 351158
                    2008 |   .6277737   .7722045     0.81   0.417    -.8950747    2.
> 150622
                         |
                   _cons |  -5.054146   6.444529    -0.78   0.434    -17.76327    7.
> 654975
-------------------------+------------------------------------------------------------
  ------
```

```
754
755 * plot marginal effects
756 margins if yearsinceleaving<6, dydx(i.switcher) over(i.yearsinceleaving)

Average marginal effects                        Number of obs     =        557
Model VCE    : Robust

Expression   : Linear prediction, predict()
dy/dx w.r.t. : 1.switcher
over         : yearsinceleaving
```

	dy/dx	Delta-method Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher	(base outcome)					
1.switcher						
yearsinceleaving						
0	-.7653142	1.048789	-0.73	0.466	-2.833608	1.30298
1	.0906766	.3410996	0.27	0.791	-.5819987	.7633518
2	-1.95627	1.778957	-1.10	0.273	-5.464514	1.551974
3	-.5316721	.5688821	-0.93	0.351	-1.653552	.5902084
4	.1069489	.5079327	0.21	0.833	-.8947345	1.108632
5	-.1761899	.4908868	-0.36	0.720	-1.144258	.7918777

Note: dy/dx for factor levels is the discrete change from the base level.

```
757
758 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect
  >  estimate for being a switcher") title("") xtitle("Year since leaving Congress")

    Variables that uniquely identify margins: yearsinceleaving

759
  end of do-file

760 do FIGUREF9.do

761
762 /*******************************************************************************\
  > |    Title:              FIGUREE9: Average marginal effect of switcher on lobbying |
  > |                                          revenue, alternative treatment codin
  > g                              |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
763
764
765 clear all

766 set more off, permanently
  (set more preference recorded)

767 numlabel, add
  (dataset has no value labels)

768 set maxvar 32000


769
770
771 use lobbyist_yearly.dta, clear

772
773 ** with treatment60 instead of treatment, i.e. incorporating 60 day restrictions
774 gen switcher2 = 1 if switchtouncovered_treatment60==1
  (23,406 missing values generated)

775 replace switcher2=0 if treatment60==1
  (5,221 real changes made)

776
777 reg log_adjlobrev_wgt i.switcher2##i.yearsinceleaving experience_imp daysworked comm
  > itteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minorit
  > y_everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  >  if posttreat==1, cluster(stafferid)

  Linear regression                               Number of obs     =      1,848
                                                  F(44, 386)        =      33.97
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.1225
                                                  Root MSE          =     1.8435

                                               (Std. Err. adjusted for 387 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
  ------
                       |               Robust
  log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
                       +----------------------------------------------------------------
  ------
          1.switcher2 |   .4451713   .3230149     1.38   0.169    -.1899176     1
  > .08026
                      |
   yearsinceleaving |
```

1	.9135675	.1741678	5.25	0.000	.5711313	1.
> 256004
2	1.399544	.2298235	6.09	0.000	.9476811	1.
> 851406
3	1.630732	.2092419	7.79	0.000	1.219335	2.
> 042128
4	1.583339	.2462731	6.43	0.000	1.099135	2.
> 067544
5	1.609889	.2714166	5.93	0.000	1.076249	2.
> 143529
6	1.587356	.3090692	5.14	0.000	.9796862	2.
> 195026
7	1.694029	.2833728	5.98	0.000	1.136881	2.
> 251176
8	1.460048	.31428	4.65	0.000	.8421336	2.
> 077963
9	1.051401	.6320409	1.66	0.097	-.191273	2.
> 294075
10	1.556508	.420481	3.70	0.000	.7297883	2.
> 383228
11	1.994364	.3622663	5.51	0.000	1.282102	2.
> 706626
switcher2#yearsinceleaving						
1 1	-.1997336	.2621257	-0.76	0.447	-.7151065	.3
> 156392
1 2	-.6299395	.3061187	-2.06	0.040	-1.231808	-.0
> 280707
1 3	-.7471379	.2832374	-2.64	0.009	-1.304019	-.1
> 902567
1 4	-.3594207	.3271662	-1.10	0.273	-1.002672	.2
> 838302
1 5	-.7857503	.4320375	-1.82	0.070	-1.635192	.0
> 636911
1 6	-.7203895	.4908277	-1.47	0.143	-1.68542	.
> 244641
1 7	-.7938213	.3496947	-2.27	0.024	-1.481366	-.1
> 062764
1 8	-.1746556	.4036578	-0.43	0.665	-.9682988	.6
> 189876
1 9	.0456095	.681541	0.07	0.947	-1.294388	1.
> 385607
1 10	-.6935919	.7703075	-0.90	0.368	-2.208116	.8
> 209319
1 11	-2.117963	.4074085	-5.20	0.000	-2.91898	-1.
> 316945
experience_imp	-.0003192	.012547	-0.03	0.980	-.0249881	.0
> 243498
daysworked	-.0003452	.0006284	-0.55	0.583	-.0015806	.0
> 008903
committeestaff_everyear	-.1300347	.2182427	-0.60	0.552	-.559128	.2
> 990585
personalstaff_everyear	-3.44444	1.372337	-2.51	0.012	-6.142631	-.7
> 462496
senate_everyear	.1211739	.1522378	0.80	0.427	-.1781453	.4
> 204931
majority_everyear	.4209234	.3406248	1.24	0.217	-.2487889	1.
> 090636
minority_everyear	.1689063	.3487486	0.48	0.628	-.5167784	.
> 854591
dcoffice_everyear	3.352924	1.327823	2.53	0.012	.7422523	5.
> 963595
leaderofficestaff_everyear	.5146576	.3219492	1.60	0.111	-.118336	1.
> 147651
log_max_adjannual_pay	.8520212	.4053113	2.10	0.036	.055127	1.
> 648915
year						
2008	.3564221	.7655555	0.47	0.642	-1.148758	1.
> 861603
2009	.0227507	.7656691	0.03	0.976	-1.482653	1.

2010	-.0624382	.7457404	-0.08	0.933	-1.52866	1.
2011	-.1520794	.7303072	-0.21	0.835	-1.587957	1.
2012	-.2014808	.7251692	-0.28	0.781	-1.627257	1.
2013	-.2503057	.7294035	-0.34	0.732	-1.684407	1.
2014	-.0877489	.7278811	-0.12	0.904	-1.518857	1.
2015	.0907216	.7275936	0.12	0.901	-1.339821	1.
2016	-.001458	.734061	-0.00	0.998	-1.444716	
2017	-.1355242	.7342285	-0.18	0.854	-1.579112	1.
2018	.095126	.7375419	0.13	0.897	-1.354976	1.
_cons	.9993532	4.890574	0.20	0.838	-8.616145	10

778
779 margins if yearsinceleaving<8, dydx(i.switcher2) over(i.yearsinceleaving)

Average marginal effects Number of obs = 1,717
Model VCE : **Robust**

Expression : **Linear prediction, predict()**
dy/dx w.r.t. : **1.switcher2**
over : **yearsinceleaving**

	dy/dx	Delta-method Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher2	(base outcome)					
1.switcher2						
yearsinceleaving						
0	.4451713	.3230149	1.38	0.169	-.1899176	1.08026
1	.2454377	.2292018	1.07	0.285	-.2052026	.696078
2	-.1847682	.2350101	-0.79	0.432	-.6468283	.2772919
3	-.3019665	.2405072	-1.26	0.210	-.7748346	.1709016
4	.0857507	.2266796	0.38	0.705	-.3599306	.531432
5	-.3405789	.3362448	-1.01	0.312	-1.001679	.3205216
6	-.2752181	.4239914	-0.65	0.517	-1.10884	.5584035
7	-.34865	.2636377	-1.32	0.187	-.8669957	.1696957

Note: dy/dx for factor levels is the discrete change from the base level.

780
781 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(white)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect estimate for being a switcher") title("Incorporate Days Covered") xtitle("Year since leaving Congress") name(gtreat, replace)

Variables that uniquely identify margins: yearsinceleaving

```
782
783
784 ** with Oct-December last year adjustment
785 gen switcher3 = 1 if switchtouncovered_treatment_dec==1
  (25,554 missing values generated)

786 replace switcher3=0 if treatment_dec==1
  (8,264 real changes made)

787
788 reg log_adjlobrev_wgt i.switcher3##i.yearsinceleaving experience_imp daysworked comm
  > itteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minorit
  > y_everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  >  if posttreat==1, cluster(stafferid)
  note: 1.switcher3#8.yearsinceleaving identifies no observations in the sample
  note: 1.switcher3#9.yearsinceleaving identifies no observations in the sample
  note: 1.switcher3#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher3#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      2,007
                                                  F(40, 418)        =       6.60
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.1046
                                                  Root MSE          =     1.9552

                                                (Std. Err. adjusted for 419 clusters in staf
  > ferid)
  ------------------------------------------------------------------------------
               |               Robust
  log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
  > erval]
  -------------+----------------------------------------------------------------
  1.switcher3 |   .4567941   .4250514     1.07   0.283    -.3787104    1.
  > 292299
               |
  yearsinceleaving |
                1 |    .754423   .1311627     5.75   0.000     .4966023    1.
  > 012244
                2 |   1.069068    .186277     5.74   0.000     .7029119    1.
  > 435225
                3 |   1.252104   .1838665     6.81   0.000     .8906857    1.
  > 613522
                4 |   1.372938   .1931436     7.11   0.000     .9932847    1.
  > 752592
                5 |   1.265288   .2273326     5.57   0.000     .8184301    1.
  > 712145
                6 |   1.202993   .2822111     4.26   0.000     .6482634    1.
  > 757723
                7 |   1.242375   .2805895     4.43   0.000      .690833    1.
  > 793917
                8 |   1.093745   .3693924     2.96   0.003     .3676468    1.
  > 819843
                9 |   .6326943   .5871219     1.08   0.282    -.5213851    1.
  > 786774
               10 |   .5907392   .7608526     0.78   0.438     -.904835    2.
  > 086313
               11 |   1.448101   .3771901     3.84   0.000      .706675    2.
  > 189526
               |
  switcher3#yearsinceleaving |
                1  1 |  -.1668021   .3750813    -0.44   0.657    -.9040827    .5
  > 704786
                1  2 |  -.2332686   .4759784    -0.49   0.624    -1.168878     .
  > 702341
                1  3 |   -.351086   .4373429    -0.80   0.423    -1.210751    .5
  > 085795
                1  4 |  -.8293763   .5510663    -1.51   0.133    -1.912583    .2
  > 538302
                1  5 |  -1.335663   1.230821    -1.09   0.278    -3.755033    1.
  > 083708
```

```
                     1  6 |  -.5028208   .9450026    -0.53   0.595     -2.36037    1.
> 354729
                     1  7 |  -1.510906   1.069572    -1.41   0.159    -3.613317    .5
> 915043
                     1  8 |          0  (empty)
                     1  9 |          0  (empty)
                     1 10 |          0  (empty)
                     1 11 |          0  (empty)
                          |
            experience_imp |     .00441   .0132236     0.33   0.739     -.021583    .0
> 304031
                daysworked |  -.0004511   .0005898    -0.76   0.445    -.0016105    .0
> 007082
   committeestaff_everyear |   .1655058    .230753     0.72   0.474    -.2880752    .6
> 190867
    personalstaff_everyear |   -3.80159   1.830714    -2.08   0.038    -7.400143    -.
> 203036
          senate_everyear |   .2235396   .1890065     1.18   0.238     -.147982    .5
> 950612
        majority_everyear |    .281072   .2773808     1.01   0.311     -.264163     .
> 826307
        minority_everyear |  -.2009611   .3089816    -0.65   0.516    -.8083124    .4
> 063902
        dcoffice_everyear |   4.135011   1.804513     2.29   0.022     .5879615    7.
> 682061
leaderofficestaff_everyear |   .9808315   .2970211     3.30   0.001     .3969904    1.
> 564673
     log_max_adjannual_pay |   .4940914   .2784458     1.77   0.077    -.0532371     1
> .04142
                          |
                      year |
                     2008 |   .3602693   .8043018     0.45   0.654    -1.220711     1
> .94125
                     2009 |    .178801   .8155886     0.22   0.827    -1.424365    1.
> 781967
                     2010 |   -.021083    .803251    -0.03   0.979    -1.599998    1.
> 557832
                     2011 |  -.0805546   .7909812    -0.10   0.919    -1.635351    1.
> 474242
                     2012 |   .0131721   .7891488     0.02   0.987    -1.538023    1.
> 564367
                     2013 |  -.0216514   .7930466    -0.03   0.978    -1.580508    1.
> 537205
                     2014 |   .0529655   .7880598     0.07   0.946    -1.496089    1.
> 602019
                     2015 |   .2103816   .7876997     0.27   0.790    -1.337965    1.
> 758728
                     2016 |   .1522383   .7910393     0.19   0.847    -1.402672    1.
> 707149
                     2017 |   .0526583   .7979975     0.07   0.947     -1.51593    1.
> 621246
                     2018 |    .336529   .8038795     0.42   0.676    -1.243621    1.
> 916679
                          |
                    _cons |    5.04836   3.339024     1.51   0.131    -1.515011    11
> .61173
------------------------------------------------------------------------------
```

```
790 margins if yearsinceleaving<8, dydx(i.switcher3) over(i.yearsinceleaving)

  Average marginal effects                        Number of obs     =      1,869
  Model VCE    : Robust

  Expression   : Linear prediction, predict()
  dy/dx w.r.t. : 1.switcher3
  over         : yearsinceleaving
```

	dy/dx	Delta-method Std. Err.	t	P>|t|	[95% Conf.	Interval]
0.switcher3	(base outcome)					
1.switcher3 yearsinceleaving						
0	.4567941	.4250514	1.07	0.283	-.3787104	1.292299
1	.2899921	.3056282	0.95	0.343	-.3107677	.8907518
2	.2235255	.3124563	0.72	0.475	-.390656	.8377069
3	.1057081	.3632093	0.29	0.771	-.6082363	.8196525
4	-.3725822	.3864578	-0.96	0.336	-1.132225	.3870606
5	-.8788685	1.105153	-0.80	0.427	-3.051218	1.293481
6	-.0460267	.8623783	-0.05	0.957	-1.741165	1.649112
7	-1.054112	1.002841	-1.05	0.294	-3.025352	.9171283

```
  Note: dy/dx for factor levels is the discrete change from the base level.

791
792 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect
  >  estimate for being a switcher") title("Incorporate Last December Covered") xtitle("
  > Year since leaving Congress") name(gtreatment_dec)

    Variables that uniquely identify margins: yearsinceleaving

793
794
795 graph combine gtreat gtreatment_dec, graphregion(color(white))

796
  end of do-file

797 do FIGUREF10.do

798
799 /*******************************************************************************\
  > |    Title:              FIGUREE10: Year-specific McCrary Density Estimates
  >        |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                  |
  > \*******************************************************************************/
800
801
802 clear all

803 set more off, permanently
  (set more preference recorded)
```

```
804 numlabel, add
  (dataset has no value labels)

805 set maxvar 32000


806
807
808 *------------------------------------------------------------------------------*
809 *                                                                 McCrary Test
  >                                                          *
810 *------------------------------------------------------------------------------*
811
812 capture program drop DCdensity

813 program DCdensity, rclass
    1. {
    2.   version 13.0
    3.   set more off
    4.   pause on
    5.   syntax varname(numeric) [if/] [in/], breakpoint(real) GENerate(string) ///
  >      [ b(real 0) h(real 0) at(string) graphname(string) noGRaph graphtitle(string)]
    6.
814   marksample touse
    7.
815   //Advanced user switch
816   //0 - supress auxiliary output  1 - display aux output
817   local verbose 1
    8.
818   //Bookkeeping before calling MATA function
819   //"running variable" in terminology of McCrary (2008)
820   local R "`varlist'"
    9.
821   tokenize `generate'
   10.   local wc : word count `generate'
   11.   if (`wc'!=5) {
   12.     //generate(Xj Yj r0 fhat se_fhat) is suggested
822     di "Specify names for five variables in generate option"
   13.     di "1. Name of variable in which to store cell midpoints of histogram"
   14.     di "2. Name of variable in which to store cell heights of histogram"
   15.     di "3. Name of variable in which to store evaluation sequence for local linea
  > r regression loop"
   16.     di "4. Name of variable in which to store local linear density estimate"
   17.     di "5. Name of variable in which to store standard error of local linear dens
  > ity estimate"
   18.     error 198
   19.   }
   20.   else {
   21.     local cellmpname = "`1'"
   22.     local cellvalname = "`2'"
   23.     local evalname = "`3'"
   24.     local cellsmname = "`4'"
   25.     local cellsmsename = "`5'"
   26.     confirm new var `1'
   27.     confirm new var `2'
   28.     capture confirm new var `3'
   29.     if (_rc!=0 & "`at'"!="`3'") error 198
   30.     confirm new var `4'
   31.     confirm new var `5'
   32.   }
   33.
```

```
823   //If the user does not specify the evaluation sequence, this it is taken to be the
  >  histogram midpoints
824   if ("`at'" == "") {
   34.     local at  = "`1'"
   35.   }
   36.
825   //Call MATA function
826   mata: DCdensitysub("`R'", "`touse'", `breakpoint', `b', `h', `verbose', "`cellmpna
  > me'", "`cellvalname'", ///
  >                     "`evalname'", "`cellsmname'", "`cellsmsename'", "`at'")
   37.
827   //Dump MATA return codes into STATA return codes
828   return scalar theta = r(theta)
   38.   return scalar se = r(se)
   39.   return scalar binsize = r(binsize)
   40.   return scalar bandwidth = r(bandwidth)
   41.
829   //if user wants the graph...
830   if ("`graph'"!="nograph") {
   42.         *local breakpoint 0.75
831         *local cellmpname Xj
832         *local cellvalname Yj
833         *local evalname r0
834         *local cellsmname fhat
835         *local cellsmsename se_fhat
836         *drop if `cellmpname' < 0 | `cellmpname' > 1
837         *drop if `evalname' < 0 | `evalname' > 1
838     tempvar hi
   43.     quietly gen `hi' = `cellsmname' + 1.96*`cellsmsename'
   44.     tempvar lo
   45.     quietly gen `lo' = `cellsmname' - 1.96*`cellsmsename'
   46.     gr twoway (scatter `cellvalname' `cellmpname', msymbol(circle_hollow) mcolor(
  > gray))           ///
  >       (line `cellsmname' `evalname' if `evalname' < `breakpoint', lcolor(black) lwid
  > th(medthick))   ///
  >         (line `cellsmname' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(medthick))   ///
  >           (line `hi' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth(v
  > thin))              ///
  >             (line `lo' `evalname' if `evalname' < `breakpoint', lcolor(black) lwidth
  > (vthin))              ///
  >               (line `hi' `evalname' if `evalname' > `breakpoint', lcolor(black) lwid
  > th(vthin))              ///
  >                 (line `lo' `evalname' if `evalname' > `breakpoint', lcolor(black) lw
  > idth(vthin)),             ///
  >                   xline(`breakpoint', lcolor(black)) legend(off) graphregion(color(w
  > hite)) ///
  >                                   xtitle("Share of member salary") ytitle("Density E
  > stimate") title("`graphtitle'", color(black) size(medsmall)) ttext(4.5 0.92 "75% thr
  > eshold", size(small))
   47.     if ("`graphname'"!="") {
   48.       di "Exporting graph as `graphname'"
   49.       graph save `graphname', replace
   50.           graph export `graphname'.png, replace
   51.     }
   52.   }
   53. }
   54. end

839
```

```
840
841 mata:
------------------------------------------------- mata (type end to exit) -------------
: mata set matastrict on

:
: void DCdensitysub(string scalar runvar, string scalar tousevar, real scalar c, real
> scalar b, ///
>                   real scalar h, real scalar verbose, string scalar cellmpname, stri
> ng scalar cellvalname, ///
>                   string scalar evalname, string scalar cellsmname, string scalar ce
> llsmsename, ///
>                   string scalar atname) {
>   //   inputs: runvar - name of stata running variable ("R" in McCrary (2008))
>   //             tousevar - name of variable indicating which obs to use
>   //             c - point of potential discontinuity
>   //             b - bin size entered by user (zero if default is to be used)
>   //             h - bandwidth entered by user (zero if default is to be used)
>   //             verbose - flag for extra messages printing to screen
>   //             cellmpname - name of new variable that will hold the histogram cell
>  midpoints
>   //             cellvalname - name of new variable that will hold the histogram val
> ues
>   //             evalname - name of new variable that will hold locations where the
> histogram smoothing was
>   //                          evaluated
>   //             cellsmname - name of new variable that will hold the smoothed histo
> gram cell values
>   //             cellsmsename - name of new variable that will hold standard errors
> for smoothed histogram cells
>   //             atname - name of existing stata variable holding points at which to
>  eval smoothed histogram
>
>   //declarations for general use and histogram generation
>   real colvector run                                                  // stata running var
> iable
>   string scalar statacom                                              // string to hold st
> ata commands
>   real scalar errcode                                                 // scalar to hold re
> turn code for stata commands
>   real scalar rn, rsd, rmin, rmax, rp75, rp25, riqr                   // scalars for summa
> ry stats of running var
>   real scalar l, r                                                    // midpoint of lowes
> t bin and highest bin in histogram
>   real scalar lc, rc                                                  // midpoint of bin j
> ust left of and just right of breakpoint
>   real scalar j                                                       // number of bins sp
> anned by running var
>   real colvector binnum                                               // each obs bin numb
> er
>   real colvector cellval                                              // histogram cell va
> lues
>   real scalar i                                                       // counter
>   real scalar cellnum                                                 // cell value holder
>  for histogram generation
>   real colvector cellmp                                               // histogram cell mi
> dpoints
>   real scalar loopover                                                //DL: Declaring loop
> over?
>
>   //Set up histogram grid
>
>   st_view(run, ., runvar, tousevar)     //view of running variable--only observation
> s for which `touse'=1
>
>   //Get summary stats on running variable
>   statacom = "quietly summarize " + runvar + " if " + tousevar + ", det"
>   errcode=_stata(statacom,1)
>   if (errcode!=0) {
>     "Unable to successfully execute the command "+statacom
>     "Check whether you have given Stata enough memory"
>   }
```

```
>   rn = st_numscalar("r(N)")
>   rsd = st_numscalar("r(sd)")
>   rmin = st_numscalar("r(min)")
>   rmax = st_numscalar("r(max)")
>   rp75 = st_numscalar("r(p75)")
>   rp25 = st_numscalar("r(p25)")
>   riqr = rp75 - rp25
>
>   if ( (c<=rmin) | (c>=rmax) ) {
>     printf("Breakpoint must lie strictly within range of running variable\n")
>     _error(3498)
>   }
>
>   //set bin size to default in paper sec. III.B unless provided by the user
>   if (b == 0) {
>     b = 2*rsd*rn^(-1/2)
>     if (verbose) printf("Using default bin size calculation, bin size = %f\n", b)
>   }
>
>   //bookkeeping
>   l = floor((rmin-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   r = floor((rmax-c)/b)*b+b/2+c  // midpoint of lowest bin in histogram
>   lc = c-(b/2) // midpoint of bin just left of breakpoint
>   rc = c+(b/2) // midpoint of bin just right of breakpoint
>   j = floor((rmax-rmin)/b)+2
>
>   //create bin numbers corresponding to run... See McCrary (2008, eq 2)
>   binnum = round((((floor((run :- c):/b):*b:+b:/2:+c) :- l):/b) :+ 1)  // bin number
>  for each obs
>
>   //generate histogram
>   cellval = J(j,1,0)  // initialize cellval as j-vector of zeros
>   for (i = 1; i <= rn; i++) {
>     cellnum = binnum[i]
>     cellval[cellnum] = cellval[cellnum] + 1
>   }
>
>   cellval = cellval :/ rn  // convert counts into fractions
>   cellval = cellval :/ b  // normalize histogram to integrate to 1
>   cellmp = range(1,j,1)  // initialize cellmp as vector of integers from 1 to j
>   cellmp = floor(((l :+ (cellmp:-1):*b):-c):/b):*b:+b:/2:+c  // convert bin numbers
> into cell midpoints
>
>   //place histogram info into stata data set
>   real colvector stcellval                                    // stata view for ce
> ll value variable
>   real colvector stcellmp                                     // stata view for ce
> ll midpoint variable
>
>   (void) st_addvar("float", cellvalname)
>   st_view(stcellval, ., cellvalname)
>   (void) st_addvar("float", cellmpname)
>   st_view(stcellmp, ., cellmpname)
>   stcellval[|1\j|] = cellval
>   stcellmp[|1\j|] = cellmp
>
>   //Run 4th order global polynomial on histogram to get optimal bandwidth (if necess
> ary)
>   real matrix P                                               // projection matrix
>  returned from orthpoly command
>   real matrix betaorth4                                       // coeffs from regre
> ssion of orthogonal powers of cellmp
>   real matrix beta4                                           // coeffs from norma
> l regression of powers of cellmp
>   real scalar mse4                                            // mean squared erro
> r from polynomial regression
>   real scalar hleft, hright                                   // bandwidth est fro
> m polynomial left of and right of breakpoint
>   real scalar leftofc, rightofc                               // bin number just l
> eft of and just right of breakpoint
>   real colvector cellmpleft, cellmpright                      // cell midpoints le
> ft of and right of breakpoint
```

```
>   real colvector fppleft, fppright                                // fit second deriv
> of hist left of and right of breakpoint
>
>   //only calculate optimal bandwidth if user hasn't provided one
>   if (h == 0) {
>     //separate cells left of and right of the cutoff
>     leftofc =  round((((floor((lc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just l
> eft of breakpoint
>     rightofc = round((((floor((rc - c)/b)*b+b/2+c) - l)/b) + 1) // bin number just r
> ight of breakpoint
>     if (rightofc-leftofc != 1) {
>       printf("Error occurred in optimal bandwidth calculation\n")
>       _error(3498)
>     }
>     cellmpleft = cellmp[|1\leftofc|]
>     cellmpright = cellmp[|rightofc\j|]
>
>     //estimate 4th order polynomial left of the cutoff
>     statacom = "orthpoly " + cellmpname + ", generate(" + cellmpname + "*) deg(4) po
> ly(P)"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " < " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppleft = 2*beta4[2] :+ 6*beta4[3]:*cellmpleft + 12*beta4[4]:*cellmpleft:^2
>     hleft = 3.348 * ( mse4*(c-l) / sum( fppleft:^2) )^(1/5)
>
>     //estimate 4th order polynomial right of the cutoff
>     P = st_matrix("P")
>     statacom = "reg " + cellvalname + " " + cellmpname + "1-" + cellmpname + "4 if "
>  + cellmpname + " > " + strofreal(c)
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>     mse4 = st_numscalar("e(rmse)")^2
>     betaorth4 = st_matrix("e(b)")
>     beta4 = betaorth4 * P
>     fppright = 2*beta4[2] :+ 6*beta4[3]:*cellmpright + 12*beta4[4]:*cellmpright:^2
>     hright = 3.348 * ( mse4*(r-c) / sum( fppright:^2) )^(1/5)
>     statacom = "drop " + cellmpname + "1-" + cellmpname + "4"
>     errcode=_stata(statacom,1)
>     if (errcode!=0) {
>       "Unable to successfully execute the command "+statacom
>       "Check whether you have given Stata enough memory"
>     }
>
>     //set bandwidth to average of calculations from left and right
>     h = 0.5*(hleft + hright)
>     if (verbose) printf("Using default bandwidth calculation, bandwidth = %f\n", h)
>   }
>
>   //Add padding zeros to histogram (to assist smoothing)
>   real scalar padzeros                                            // number of zeros t
> o pad on each side of hist
>   real scalar jp                                                  // number of histogr
> am bins including padded zeros
>
>   padzeros = ceil(h/b)  // number of zeros to pad on each side of hist
```

```
>   jp = j + 2*padzeros
>   if (padzeros >= 1) {
>     //add padding to histogram variables
>     cellval = ( J(padzeros,1,0) \ cellval \ J(padzeros,1,0) )
>     cellmp = ( range(l-padzeros*b,l-b,b) \ cellmp \ range(r+b,r+padzeros*b,b) )
>     //dump padded histogram variables out to stata
>     stcellval[|1\jp|] = cellval
>     stcellmp[|1\jp|] = cellmp
>   }
>
>   //Generate point estimate of discontinuity
>   real colvector dist                                          // distance from a g
> iven observation
>   real colvector w                                             // triangle kernel w
> eights
>   real matrix XX, Xy                                           // regression matrci
> es for weighted regression
>   real rowvector xmean, ymean                                  // means for demeani
> ng regression vars
>   real colvector beta                                          // regression estima
> tes from weighted reg.
>   real colvector ehat                                          // predicted errors
> from weighted reg.
>   real scalar fhatr, fhatl                                     // local linear reg.
>  estimates at discontinuity
>                                                                //   estimated from
> right and left, respectively
>   real scalar thetahat                                         // discontinuity est
> imate
>   real scalar sethetahat                                       // standard error of
>  discontinuity estimate
>
>   //Estimate left of discontinuity
>   dist = cellmp :- c  // distance from potential discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:<c)  // triangle kernel weig
> hts for left
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)    //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatl = beta[2,1]
>
>   //Estimate right of discontinuity
>   w = rowmax( (J(jp,1,0), (1:-abs(dist:/h))) ):*(cellmp:>=c)  // triangle kernel wei
> ghts for right
>   w = (w:/sum(w)) :* jp  // normalize weights to sum to number of cells (as does sta
> ta aweights)
>   xmean = mean(dist, w)
>   ymean = mean(cellval, w)
>   XX = quadcrossdev(dist,xmean,w,dist,xmean)   //fixed error on 11.17.2009
>   Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>   beta = invsym(XX)*Xy
>   beta = beta \ ymean-xmean*beta
>   fhatr = beta[2,1]
>
>   //Calculate and display discontinuity estimate
>   thetahat = ln(fhatr) - ln(fhatl)
>   sethetahat = sqrt( (1/(rn*h)) * (24/5) * ((1/fhatr) + (1/fhatl)) )
>   printf("\nDiscontinuity estimate (log difference in height): %f\n", thetahat)
>   printf("                                                   (%f)\n", sethetahat)
>
>   loopover=1 //This is an advanced user switch to get rid of LLR smoothing
>   //Can be used to speed up simulation runs--the switch avoids smoothing at
>   //eval points you aren't studying
>
>   //Perform local linear regression (LLR) smoothing
>   if (loopover==1) {
>     real scalar cellsm                                         // smoothed histogra
```

```
> m cell values
>     real colvector stcellsm                                     // stata view for sm
> oothed values
>     real colvector atstata                                      // stata view for at
>  variable (evaluation points)
>     real colvector at                                           // points at which t
> o evaluate LLR smoothing
>     real scalar evalpts                                         // number of evaluat
> ion points
>     real colvector steval                                               // stata vie
> w for LLR smothing eval points
>
>     // if evaluating at cell midpoints
>     if (atname == cellmpname) {
>       at = cellmp[|padzeros+1\padzeros+j|]
>       evalpts = j
>     }
>     else {
>       st_view(atstata, ., atname)
>       evalpts = nonmissing(atstata)
>       at = atstata[|1\evalpts|]
>     }
>
>     if (verbose) printf("Performing LLR smoothing.\n")
>     if (verbose) printf("%f iterations will be performed \n",j)
>
>     cellsm = J(evalpts,1,0)  // initialize smoothed histogram cell values to zero
>     // loop over all evaluation points
>     for (i = 1; i <= evalpts; i++) {
>       dist = cellmp :- at[i]
>       //set weights relative to current bin - note comma below is row join operator,
>  not two separate args
>       w = rowmax( (J(jp,1,0), ///
>         (1:-abs(dist:/h))):*((cellmp:>=c)*(at[i]>=c):+(cellmp:<c):*(at[i]<c)) )
>       //manually obtain weighted regression coefficients
>       w = (w:/sum(w)) :* jp  // normalize weights to sum to N (as does stata aweight
> s)
>       xmean = mean(dist, w)
>       ymean = mean(cellval, w)
>       XX = quadcrossdev(dist,xmean,w,dist,xmean)  //fixed error on 11.17.2009
>       Xy = quadcrossdev(dist,xmean,w,cellval,ymean)
>       beta = invsym(XX)*Xy
>       beta = beta \ ymean-xmean*beta
>       cellsm[i] = beta[2,1]
>       //Show dots
>       if (verbose) {
>         if (mod(i,10) == 0) {
>           printf(".")
>           displayflush()
>           if (mod(i,500) == 0) {
>             printf(" %f LLR iterations\n",i)
>             displayflush()
>           }
>         }
>       }
>     }
>     printf("\n")
>
>     //set up stata variable to hold evaluation points for smoothed values
>     (void) st_addvar("float", evalname)
>     st_view(steval, ., evalname)
>     steval[|1\evalpts|] = at
>
>     //set up stata variable to hold smoothed values
>     (void) st_addvar("float", cellsmname)
>     st_view(stcellsm, ., cellsmname)
>     stcellsm[|1\evalpts|] = cellsm
>
>     //Calculate standard errors for LLR smoothed values
>     real scalar m                                       // amount of kernel being tr
> uncated by breakpoint
>     real colvector cellsmse                             // standard errors of smooth
```

```
> ed histogram
>     real colvector stcellsmse                          // stata view for cell midpo
> int variable
>     cellsmse = J(evalpts,1,0)  // initialize standard errors to zero
>     for (i = 1; i <= evalpts; i++) {
>       if (at[i] > c) {
>         m = max((-1, (c-at[i])/h))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2-3*m^11-24*m^10-83*m^9-72*m^8+42*m^7+18*m^6-18*m^5+18*m^4-3*m^3+18*m^2-1
> 5*m)/ ///
>               (1+m^6+6*m^5-3*m^4-4*m^3+9*m^2-6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>       if (at[i] < c) {
>         m = min(((c-at[i])/h, 1))
>         cellsmse[i] = ((12*cellsm[i])/(5*rn*h))* ///
>           (2+3*m^11-24*m^10+83*m^9-72*m^8-42*m^7+18*m^6+18*m^5+18*m^4-3*m^3+18*m^2+1
> 5*m)/ ///
>               (1+m^6-6*m^5-3*m^4+4*m^3+9*m^2+6*m)^2
>         cellsmse[i] = sqrt(cellsmse[i])
>       }
>     }
>     //set up stata variable to hold standard errors for smoothed values
>     (void) st_addvar("float", cellsmsename)
>     st_view(stcellsmse, ., cellsmsename)
>     stcellsmse[|1\evalpts|] = cellsmse
>   }
>   //End of loop over evaluation points
>
>   //Fill in STATA return codes
>   st_rclear()
>   st_numscalar("r(theta)", thetahat)
>   st_numscalar("r(se)", sethetahat)
>   st_numscalar("r(binsize)", b)
>   st_numscalar("r(bandwidth)", h)
> }
note: variable run may be used before set
note: variable stcellval may be used before set
note: variable stcellmp may be used before set
note: variable stcellsm may be used before set
note: variable atstata may be used before set
note: variable steval may be used before set
note: variable stcellsmse may be used before set
note: variable riqr set but not used
note: variable ehat unused

: end
```

```
842
843
844 use congress_yearly.dta, clear

845
846 ****************************************
847 ** By year
848
849 ** by year (to check whether the effect is driven by Obama's executive order)
850 gen treat_b =0
```

```
851 gen treat_se = 0

852
853 forvalues x = 2001/2016 {
    2. DCdensity percent_annualpay if year==`x' & percent_annualpay>=0 & percent_annualp
  > ay <=1, breakpoint(.75) generate(Xj Yj r0 fhat se_fhat) nograph
    3. replace treat_b = r(theta) if year==`x'
    4. replace treat_se = r(se) if year==`x'
    5. drop Xj Yj r0 fhat se_fhat
    6. }
  Using default bin size calculation, bin size = .00291965
  Using default bandwidth calculation, bandwidth = .110495383

  Discontinuity estimate (log difference in height): -.01397603
                                                     (.124362123)
  Performing LLR smoothing.
  343 iterations will be performed
  ..................................
  (18,291 real changes made)
  (18,291 real changes made)
  Using default bin size calculation, bin size = .002906776
  Using default bandwidth calculation, bandwidth = .105069728

  Discontinuity estimate (log difference in height): -.043265215
                                                     (.116928232)
  Performing LLR smoothing.
  345 iterations will be performed
  ..................................
  (19,547 real changes made)
  (19,547 real changes made)
  Using default bin size calculation, bin size = .002927432
  Using default bandwidth calculation, bandwidth = .099942091

  Discontinuity estimate (log difference in height): -.134459626
                                                     (.120602899)
  Performing LLR smoothing.
  343 iterations will be performed
  ..................................
  (20,117 real changes made)
  (20,117 real changes made)
  Using default bin size calculation, bin size = .003074275
  Using default bandwidth calculation, bandwidth = .099550043

  Discontinuity estimate (log difference in height): .159393389
                                                     (.122120757)
  Performing LLR smoothing.
  326 iterations will be performed
  ..............................
  (18,506 real changes made)
  (18,506 real changes made)
  Using default bin size calculation, bin size = .003045208
  Using default bandwidth calculation, bandwidth = .098944478

  Discontinuity estimate (log difference in height): .175675955
                                                     (.11295805)
  Performing LLR smoothing.
  330 iterations will be performed
  ..............................
  (19,981 real changes made)
  (19,981 real changes made)
  Using default bin size calculation, bin size = .003138719
  Using default bandwidth calculation, bandwidth = .101625339
```

```
Discontinuity estimate (log difference in height): .103001525
                                                   (.10914283)
Performing LLR smoothing.
320 iterations will be performed
..............................
(19,049 real changes made)
(19,049 real changes made)
Using default bin size calculation, bin size = .003157035
Using default bandwidth calculation, bandwidth = .106805565

Discontinuity estimate (log difference in height): -.112156019
                                                   (.10474753)
Performing LLR smoothing.
318 iterations will be performed
..............................
(20,398 real changes made)
(20,398 real changes made)
Using default bin size calculation, bin size = .003229209
Using default bandwidth calculation, bandwidth = .103380524

Discontinuity estimate (log difference in height): .014650891
                                                   (.109741648)
Performing LLR smoothing.
311 iterations will be performed
..............................
(18,833 real changes made)
(18,833 real changes made)
Using default bin size calculation, bin size = .003155721
Using default bandwidth calculation, bandwidth = .103066775

Discontinuity estimate (log difference in height): -.021844488
                                                   (.102490373)
Performing LLR smoothing.
318 iterations will be performed
..............................
(20,237 real changes made)
(20,237 real changes made)
Using default bin size calculation, bin size = .003239873
Using default bandwidth calculation, bandwidth = .109226803

Discontinuity estimate (log difference in height): -.07070853
                                                   (.095110791)
Performing LLR smoothing.
310 iterations will be performed
..............................
(19,274 real changes made)
(19,274 real changes made)
Using default bin size calculation, bin size = .003189534
Using default bandwidth calculation, bandwidth = .107937816

Discontinuity estimate (log difference in height): -.119640267
                                                   (.090514525)
Performing LLR smoothing.
314 iterations will be performed
..............................
(20,642 real changes made)
(20,642 real changes made)
Using default bin size calculation, bin size = .003319576
Using default bandwidth calculation, bandwidth = .104936181

Discontinuity estimate (log difference in height): -.318919108
                                                   (.100407371)
Performing LLR smoothing.
303 iterations will be performed
..............................
(18,297 real changes made)
(18,297 real changes made)
Using default bin size calculation, bin size = .00329933
Using default bandwidth calculation, bandwidth = .116592035
```

```
Discontinuity estimate (log difference in height): -.203274267
                                                   (.089150499)
Performing LLR smoothing.
304 iterations will be performed
.............................
(19,021 real changes made)
(19,021 real changes made)
Using default bin size calculation, bin size = .003432034
Using default bandwidth calculation, bandwidth = .105078133

Discontinuity estimate (log difference in height): -.240136681
                                                   (.098896226)
Performing LLR smoothing.
293 iterations will be performed
.............................
(17,477 real changes made)
(17,477 real changes made)
Using default bin size calculation, bin size = .00335718
Using default bandwidth calculation, bandwidth = .1084425

Discontinuity estimate (log difference in height): -.233490172
                                                   (.094633769)
Performing LLR smoothing.
299 iterations will be performed
.............................
(18,538 real changes made)
(18,538 real changes made)
Using default bin size calculation, bin size = .00359013
Using default bandwidth calculation, bandwidth = .103489344

Discontinuity estimate (log difference in height): -.163558506
                                                   (.097058382)
Performing LLR smoothing.
280 iterations will be performed
.............................
(16,358 real changes made)
(16,358 real changes made)

854 gen high = treat_b + 1.96 * treat_se

855 gen low = treat_b - 1.96 * treat_se

856 sort year

857 twoway (rcap high low year, lcolor(black) lpattern(dash)) (scatter treat_b year, lco
  > lor(black)) , ///
  >         legend(off) graphregion(color(white)) xline(2007) ytitle("McCrary discontinu
  > ity estimate") yline(0)

858
  end of do-file

859 do FIGUREF11.do

860
861 /*****************************************************************************\
  > |    Title:              FIGUREE11: Year-specific estimates of switching out of    |
  > |                                                 coverage
  >                                                                  |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*****************************************************************************/
```

```
862
863
864 clear all

865 set more off, permanently
  (set more preference recorded)

866 numlabel, add
  (dataset has no value labels)

867 set maxvar 32000


868
869 use congress_yearly.dta, clear

870
871 xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

872
873 xtreg lobbydirectafter i.switchtouncovered_treatment##i.year experience_imp experien
  > ce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_everye
  > ar minority_everyear dcoffice_everyear leaderofficestaff_everyear  if posttreat==1 |
  >  year==2007, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    140194
  Group variable: stafferid                       Number of groups   =     36921

  R-sq:  within  = 0.0154                         Obs per group: min =         1
         between = 0.0034                                        avg =       3.8
         overall = 0.0012                                        max =        10

                                                  F(27,36920)        =     38.09
  corr(u_i, Xb)  = -0.3607                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 36,921 clusters i
  > n stafferid)
  ------------------------------------------------------------------------------
  ------------
               lobbydirectafter |      Coef.   Robust
  > f. Interval]                |               Std. Err.      t    P>|t|     [95% Con
  ------------------------------+-----------------------------------------------------
  ------------
   1.switchtouncovered_treatment |   .0043886    .029255     0.15   0.881    -.0529521
  >     .0617293
                                 |
                            year |
                            2008 |   .0066604   .0012875     5.17   0.000     .0041369
  >      .009184
                            2009 |   .0068893    .001318     5.23   0.000      .004306
  >     .0094726
                            2010 |   .0036326   .0013015     2.79   0.005     .0010817
  >     .0061836
                            2011 |   .0093835   .0014832     6.33   0.000     .0064763
  >     .0122907
                            2012 |  -.0027342   .0013309    -2.05   0.040    -.0053428
  >    -.0001256
                            2013 |   .0010028    .001493     0.67   0.502    -.0019235
  >     .0039291
                            2014 |  -.0042974   .0014596    -2.94   0.003    -.0071582
  >    -.0014366
                            2015 |  -.0064125   .0015242    -4.21   0.000       -.0094
  >     -.003425
                            2016 |          0  (omitted)
                                 |
  switchtouncovered_treatment#year
                          1 2008 |  -.0127425    .034208    -0.37   0.710    -.0797911
```

```
>     .0543061
                        1 2009 |   .0258363   .0393099     0.66   0.511    -.0512123
>     .1028848
                        1 2010 |   .0262891   .0411201     0.64   0.523    -.0543075
>     .1068857
                        1 2011 |   .0038419   .0363729     0.11   0.916    -.0674499
>     .0751337
                        1 2012 |   .0084055    .035959     0.23   0.815    -.0620752
>     .0788861
                        1 2013 |   .0511262   .0391501     1.31   0.192     -.025609
>     .1278614
                        1 2014 |   .0970702   .0573055     1.69   0.090    -.0152502
>     .2093906
                        1 2015 |   .0499744   .0466837     1.07   0.284     -.041527
>     .1414757
                        1 2016 |   .0811706    .055803     1.45   0.146    -.0282049
>     .1905461
                               |
                  experience_imp |   .0078314   .0003341    23.44   0.000     .0071765
>     .0084864
                   experience_sq |  -.0000959   .0000143    -6.71   0.000    -.0001239
>    -.0000679
       committeestaff_everyear |  -.0157134    .002866    -5.48   0.000    -.0213308
>    -.0100961
        personalstaff_everyear |  -.0185312   .0042636    -4.35   0.000     -.026888
>    -.0101744
                  senate_everyear |   -.000826   .0028571    -0.29   0.773    -.0064259
>      .004774
               majority_everyear |  -.0085373   .0029702    -2.87   0.004    -.0143589
>    -.0027157
               minority_everyear |  -.0101649   .0030125    -3.37   0.001    -.0160696
>    -.0042603
               dcoffice_everyear |   .0065076   .0015072     4.32   0.000     .0035535
>     .0094618
         leaderofficestaff_everyear |  -.0075697   .0044186    -1.71   0.087    -.0162303
>     .0010909
                           _cons |  -.0072343      .0031    -2.33   0.020    -.0133103
>    -.0011583
                                 |
------------------------------------------------------------------------------
                     sigma_u |  .11923773
                     sigma_e |  .11071095
                         rho |  .53703031   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

874
875 `margins, dydx(switchtouncovered_treatment) over(year) noestimcheck`

```
Average marginal effects                        Number of obs     =    140,194
Model VCE    : Robust

Expression   : Linear prediction, predict()
dy/dx w.r.t. : 1.switchtouncovered_treatment
over         : year

------------------------------------------------------------------------------
                             |            Delta-method
                             |      dy/dx   Std. Err.      z    P>|z|     [95% Conf.
>  Interval]
-------------------------------------------------------------------------------
0.switchtouncovered_treatment |  (base outcome)
-------------------------------------------------------------------------------
1.switchtouncovered_treatment |
                        year |
                        2007 |   .0043886    .029255     0.15   0.881    -.0529502
>   .0617275
                        2008 |  -.0083539   .0176738    -0.47   0.636    -.0429939
>   .0262862
```

```
                        2009 |   .0302249   .0238113     1.27   0.204    -.0164444
>   .0768942
                        2010 |   .0306778   .0290199     1.06   0.290    -.0262001
>   .0875556
                        2011 |   .0082305   .0216823     0.38   0.704    -.0342659
>    .050727
                        2012 |   .0127941   .0208828     0.61   0.540    -.0281355
>   .0537237
                        2013 |   .0555148   .0260349     2.13   0.033     .0044873
>   .1065424
                        2014 |   .1014588   .0492777     2.06   0.040     .0048762
>   .1980414
                        2015 |    .054363   .0363712     1.49   0.135    -.0169232
>   .1256492
                        2016 |   .0855592   .0476414     1.80   0.073    -.0078163
>   .1789347
------------------------------------------------------------------------------
  __________
  Note: dy/dx for factor levels is the discrete change from the base level.

876
877 marginsplot, plotopts(connect(none) mcolor(black) lcolor(black)) graphregion(color(w
  > hite)) yline(0, lcolor(black)) recastci(rspike) ciopts(lcolor(black)) ytitle("Effect
  >  estimate for switching") title("") xtitle("Year")

    Variables that uniquely identify margins: year

878
  end of do-file

879 do FIGUREF12.do

880
881 /*****************************************************************************\
  > |    Title:              FIGUREE12: Hiring in industries relevant for post-congress|
  > |                                                employment
  >                                                                  |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
882
883
884 clear all

885 set more off, permanently
  (set more preference recorded)

886 numlabel, add
  (dataset has no value labels)

887 set maxvar 32000


888
889 use lobbyist_counts.dta, clear

890
891
```

```
892 twoway (line count year if year>2000 & year<2017, yaxis(1) lcolor(black) legend(labe
  > l(1 "All lobbyists"))) || (line count_revolver year if year>2000 & year<2017, yaxis(
  > 1) lcolor(black) lpattern(dash) legend(label(2 "Staff-turned-lobbyists"))) || (line
  > accession year if year>2000 & year<2017, yaxis(2) lcolor(black) lpattern(dot) legend
  > (label(3 "Federal government"))), graphregion(color(white)) xtitle("Year") ytitle("N
  > ew hires in lobbying market", axis(1)) ytitle("New hires in federal government", axi
  > s(2))

893
  end of do-file

894 do FIGUREF13.do

895
896 /*******************************************************************************\
  > |    Title:              FIGUREE13: Histogram of Staffer Salaries by Year
  >    |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
897
898
899 clear all

900 set more off, permanently
  (set more preference recorded)

901 numlabel, add
  (dataset has no value labels)

902 set maxvar 32000


903
904 use congress_yearly.dta, clear

905
906 twoway histogram percent_annualpay if percent_annualpay>=0 & percent_annualpay <=1,
  > by(year, graphregion(color(white))) xline(0.75) color(gray)

907
  end of do-file

908
909 * tables
910 do TABLE1.do

911
912 /*******************************************************************************\
  > |    Title:              TABLE1: Regression Models for Becoming a Lobbyist
  >       |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                   |
  > \*******************************************************************************/
913
914
```

```
915 clear all

916 set more off, permanently
  (set more preference recorded)

917 numlabel, add
  (dataset has no value labels)

918 set maxvar 32000


919
920 use congress_yearly.dta, clear

921 xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

922
923 ****************************************
924 ** 2008-2016
925
926 xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==1, fe vce(cl
  > uster stafferid)

  Fixed-effects (within) regression               Number of obs     =    143,745
  Group variable: stafferid                       Number of groups  =     37,744

  R-sq:                                           Obs per group:
       within  = 0.0137                                         min =          1
       between = 0.0162                                         avg =        3.8
       overall = 0.0003                                         max =          9

                                                  F(9,37743)        =     126.50
  corr(u_i, Xb)  = -0.1612                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 37,744 clusters in sta
  > fferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |   .0295081    .008833     3.34   0.001     .0121953
  > .046821
             |
                        year |
                        2009 |   .0123738   .0009947    12.44   0.000     .0104241    .
  > 0143235
                        2010 |   .0173314    .001109    15.63   0.000     .0151578
  > .019505
                        2011 |   .0287125   .0013439    21.37   0.000     .0260785    .
  > 0313465
                        2012 |   .0242138   .0012263    19.75   0.000     .0218103    .
  > 0266173
                        2013 |    .033533   .0013905    24.12   0.000     .0308077    .
  > 0362583
                        2014 |   .0345415   .0013672    25.26   0.000     .0318617    .
  > 0372213
                        2015 |   .0382672   .0014293    26.77   0.000     .0354658    .
  > 0410687
                        2016 |   .0506081   .0017306    29.24   0.000      .047216    .
  > 0540001
             |
                       _cons |  -.0123456   .0008666   -14.25   0.000    -.0140442   -.
  > 0106471
-------------+----------------------------------------------------------------
                     sigma_u |  .11383324
```

```
                     sigma_e |  .10609989
                         rho |  .53511885   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

927 summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

928 estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

929 est store model1

930 estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

931
932
933 xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe clus
  > ter(stafferid)

  Fixed-effects (within) regression               Number of obs     =    143,745
  Group variable: stafferid                       Number of groups  =     37,744

  R-sq:                                           Obs per group:
       within  = 0.0556                                         min =          1
       between = 0.0057                                         avg =        3.8
       overall = 0.0342                                         max =          9

                                                  F(17,37743)       =      85.89
  corr(u_i, Xb)  = -0.0635                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 37,744 clusters in sta
  > fferid)
------------------------------------------------------------------------------
  _______
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
  _______
switchtouncovered_treatment |   .0193426    .008493     2.28   0.023     .0026961    .
  > 0359891
                daysworked |  -.0002568   7.74e-06   -33.19   0.000    -.0002719   -.
  > 0002416
    committeestaff_everyear |  -.0051628    .002796    -1.85   0.065    -.0106429    .
  > 0003174
     personalstaff_everyear |   -.010895   .0042787    -2.55   0.011    -.0192814   -.
  > 0025086
          senate_everyear |  -.0001803   .0027428    -0.07   0.948    -.0055563    .
  > 0051957
        majority_everyear |  -.0032986   .0029908    -1.10   0.270    -.0091605    .
  > 0025634
        minority_everyear |  -.0107171   .0030576    -3.51   0.000    -.0167101   -
  > .004724
        dcoffice_everyear |   .0071815   .0014818     4.85   0.000     .0042772    .
  > 0100859
 leaderofficestaff_everyear |    .000273   .0046906     0.06   0.954    -.0089207    .
  > 0094666
             |
                      year |
                      2009 |   .0034796    .000947     3.67   0.000     .0016234    .
  > 0053357
```

```
                2010 |   .0090655   .0010504     8.63   0.000     .0070068    .
> 0111243
                2011 |   .0102524   .0011767     8.71   0.000     .0079461    .
> 0125587
                2012 |   .0109109   .0011044     9.88   0.000     .0087462    .
> 0130755
                2013 |   .0119769   .0011817    10.14   0.000     .0096608    .
> 0142931
                2014 |   .0164736   .0011484    14.34   0.000     .0142226    .
> 0187246
                2015 |   .0141393    .001152    12.27   0.000     .0118814    .
> 0163972
                2016 |   .0195875   .0015713    12.47   0.000     .0165077    .
> 0226673
                     |
               _cons |   .0951273   .0036729    25.90   0.000     .0879283    .
> 1023262
-------------------------------------------------------------------------------
  _______

             sigma_u |  .11176395
             sigma_e |  .10382516
                 rho |  .53677385   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
  _______

934 summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

935 estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

936 est store model2

937 estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

938
939
940 xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe clus
  > ter(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    128,067
  Group variable: stafferid                       Number of groups  =     34,438

  R-sq:                                           Obs per group:
       within  = 0.0588                                         min =          1
       between = 0.0147                                         avg =        3.7
       overall = 0.0340                                         max =          9

                                                  F(18,34437)       =      76.40
  corr(u_i, Xb)  = -0.1154                        Prob > F          =     0.0000
```

(Std. Err. adjusted for **34,438** clusters in sta
> fferid)

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. In
> terval]					
switchtouncovered_treatment	.022486	.0092623	2.43	0.015	.0043315 .
> 0406405					
daysworked	-.0002711	8.49e-06	-31.92	0.000	-.0002877 -.
> 0002544					
experience_imp	.0026819	.0003376	7.94	0.000	.0020202 .
> 0033436					
experience_sq	9.96e-06	.0000151	0.66	0.510	-.0000197 .
> 0000396					
committeestaff_everyear	-.0052232	.0029024	-1.80	0.072	-.010912 .
> 0004656					
personalstaff_everyear	-.0138232	.0044786	-3.09	0.002	-.0226013 -.
> 0050451					
senate_everyear	-.0011263	.0028411	-0.40	0.692	-.006695 .
> 0044425					
majority_everyear	-.0018443	.0030911	-0.60	0.551	-.007903 .
> 0042144					
minority_everyear	-.0085231	.0031431	-2.71	0.007	-.0146836 -.
> 0023626					
dcoffice_everyear	.0080285	.0016031	5.01	0.000	.0048863 .
> 0111707					
leaderofficestaff_everyear	6.27e-06	.0046848	0.00	0.999	-.0091761 .
> 0091886					
year					
2009	.0020858	.0010403	2.01	0.045	.0000469 .
> 0041248					
2010	.0051949	.0011293	4.60	0.000	.0029815 .
> 0074084					
2011	.0043472	.0013085	3.32	0.001	.0017824 .
> 0069119					
2012	.0015789	.0012427	1.27	0.204	-.0008568 .
> 0040146					
2013	.0004993	.0014092	0.35	0.723	-.0022627 .
> 0032614					
2014	.0023233	.0014529	1.60	0.110	-.0005244
> .005171					
2015	-.003379	.001516	-2.23	0.026	-.0063505 -.
> 0004076					
2016	0	(omitted)			
_cons	.0926932	.0041927	22.11	0.000	.0844754
> .100911					
sigma_u	.10995727				
sigma_e	.10672906				
rho	.5148948	(fraction of variance due to u_i)			

941 summarize lobbydirectafter if e(sample)==1

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	128,067	.0146017	.1199526	0	1

```
942 estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01460173

943 est store model3

944 estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

945
946
947 ******************************************
948 ** 2007-2016
949
950
951 xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==1 | year==20
  > 07, fe cluster(stafferid)

  Fixed-effects (within) regression               Number of obs     =    159,890
  Group variable: stafferid                       Number of groups  =     41,264

  R-sq:                                           Obs per group:
       within  = 0.0122                                         min =          1
       between = 0.0225                                         avg =        3.9
       overall = 0.0000                                         max =         10

                                                  F(10,41263)       =     102.61
  corr(u_i, Xb)  = -0.1744                        Prob > F          =     0.0000

                                       (Std. Err. adjusted for 41,264 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------------
  _______
                                |               Robust
           lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------------
  _______
  switchtouncovered_treatment |   .0319949    .008403     3.81   0.000     .0155249    .
  > 0484649
                                |
                         year |
                        2008  |   .0120709   .0011665    10.35   0.000     .0097846    .
  > 0143572
                        2009  |    .018041   .0012538    14.39   0.000     .0155836    .
  > 0204984
                        2010  |   .0208958   .0013021    16.05   0.000     .0183436    .
  > 0234479
                        2011  |   .0312933   .0015017    20.84   0.000     .0283499    .
  > 0342367
                        2012  |   .0259342   .0013794    18.80   0.000     .0232305    .
  > 0286378
                        2013  |   .0349301   .0015374    22.72   0.000     .0319167    .
  > 0379435
                        2014  |   .0356341   .0014932    23.86   0.000     .0327074    .
  > 0385607
                        2015  |   .0391592   .0015478    25.30   0.000     .0361255    .
  > 0421928
                        2016  |   .0513981   .0018339    28.03   0.000     .0478036    .
  > 0549925
                                |
                       _cons  |  -.0117588   .0010125   -11.61   0.000    -.0137434   -.
  > 0097743
  ------------------------------------------------------------------------------------
  _______
                     sigma_u  |  .12531552
                     sigma_e  |  .10757815
                         rho  |  .57572161   (fraction of variance due to u_i)
  ------------------------------------------------------------------------------------
```

```
. summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937         0          1

. estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

. est store model1b

. estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

.
. xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe cluster(stafferid)

Fixed-effects (within) regression               Number of obs     =    159,890
Group variable: stafferid                       Number of groups  =     41,264

R-sq:                                           Obs per group:
     within  = 0.0580                                         min =          1
     between = 0.0081                                         avg =        3.9
     overall = 0.0358                                         max =         10

                                                F(18,41263)       =      89.15
corr(u_i, Xb)  = -0.0639                        Prob > F          =     0.0000

                                         (Std. Err. adjusted for 41,264 clusters in sta
> fferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
> terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |    .021076   .0080581     2.62   0.009     .0052819    .
> 0368701
         daysworked |  -.0002711   7.58e-06   -35.76   0.000    -.0002859   -.
> 0002562
committeestaff_everyear |  -.0077055   .0026579    -2.90   0.004    -.0129151   -
> .002496
personalstaff_everyear |  -.0134916   .0040135    -3.36   0.001    -.0213582   -
> .005625
     senate_everyear |   .0004499   .0027101     0.17   0.868    -.0048619    .
> 0057617
majority_everyear |  -.0028747   .0028314    -1.02   0.310    -.0084242    .
> 0026749
minority_everyear |  -.0106374   .0028844    -3.69   0.000    -.0162909   -.
> 0049839
dcoffice_everyear |   .0072431     .00141     5.14   0.000     .0044794    .
> 0100068
leaderofficestaff_everyear |  -.0019075    .004362    -0.44   0.662    -.0104571
> .006642
             |
        year |
       2008  |   .0083154   .0011166     7.45   0.000     .0061267
> .010504
       2009  |   .0077282   .0011832     6.53   0.000      .005409    .
> 0100473
       2010  |   .0126581   .0012305    10.29   0.000     .0102463    .
> 0150699
```

```
                    2011 |   .0126811   .0013485     9.40   0.000     .0100379    .
> 0153243
                    2012 |   .0132778   .0012706    10.45   0.000     .0107874    .
> 0157682
                    2013 |   .0137167   .0013654    10.05   0.000     .0110405    .
> 0163928
                    2014 |   .0182721   .0013119    13.93   0.000     .0157007    .
> 0208436
                    2015 |   .0154942   .0013272    11.67   0.000     .0128928    .
> 0180955
                    2016 |   .0205494   .0016986    12.10   0.000     .0172201    .
> 0238787
                         |
                   _cons |    .100468   .0036029    27.88   0.000     .0934062    .
> 1075299
------------------------------------------------------------------------------
  _______

                 sigma_u |   .1226566
                 sigma_e |  .10505643
                     rho |  .57683201   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

958 summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937         0          1

959 estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

960 est store model2b

961 estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

962
963
964 xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    140,194
  Group variable: stafferid                       Number of groups  =     36,921

  R-sq:                                           Obs per group:
       within  = 0.0614                                         min =          1
       between = 0.0178                                         avg =        3.8
       overall = 0.0379                                         max =         10

                                                  F(19,36920)       =      79.21
  corr(u_i, Xb)  = -0.0971                        Prob > F          =     0.0000
```

(Std. Err. adjusted for **36,921** clusters in sta
> fferid)

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. In
> terval]					
switchtouncovered_treatment	.0217179	.0087302	2.49	0.013	.0046064	.
> 0388294
daysworked	-.000286	8.38e-06	-34.13	0.000	-.0003025	-.
> 0002696
experience_imp	.0029973	.0003152	9.51	0.000	.0023795	.
> 0036152
experience_sq	-.0000124	.000014	-0.89	0.376	-.0000398
> .000015
committeestaff_everyear	-.0074704	.0027627	-2.70	0.007	-.0128854	-.
> 0020553
personalstaff_everyear	-.0164459	.004219	-3.90	0.000	-.0247152	-.
> 0081766
senate_everyear	-.0006105	.002791	-0.22	0.827	-.0060809	.
> 0048599
majority_everyear	-.0009194	.0029322	-0.31	0.754	-.0066667	.
> 0048278
minority_everyear	-.0081563	.0029755	-2.74	0.006	-.0139885	-.
> 0023242
dcoffice_everyear	.008182	.0015344	5.33	0.000	.0051746	.
> 0111894
leaderofficestaff_everyear	-.0028144	.0043187	-0.65	0.515	-.0112791	.
> 0056503
year					
2008	.0073519	.0012485	5.89	0.000	.0049048
> .009799
2009	.0052823	.0012794	4.13	0.000	.0027746	.
> 0077901
2010	.0075694	.0012879	5.88	0.000	.0050451	.
> 0100937
2011	.0055834	.0014335	3.90	0.000	.0027737
> .008393
2012	.0027641	.001335	2.07	0.038	.0001476	.
> 0053807
2013	.0011182	.001484	0.75	0.451	-.0017906
> .004027
2014	.0030763	.0014922	2.06	0.039	.0001515
> .006001
2015	-.0030358	.0015365	-1.98	0.048	-.0060475	-.
> 0000242
2016	0	(omitted)				
_cons	.0980009	.0040991	23.91	0.000	.0899665	.
> 1060352
sigma_u	.11697141					
sigma_e	.10808499					
rho	.53942386	(fraction of variance due to u_i)				

```
965 summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**140,194**	**.0153716**	**.1230259**	**0**	**1**

```
966 estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01537156

967 est store model3b

968 estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

969
970
971 esttab model1 model2 model3 model1b model2b model3b using "TABLE1.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2008-2016" "2007-2016", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment "Switch to uncovered" daysworked "Day
  > s worked" experience_imp "Hill experience" experience_sq "Hill experience sq." commi
  > tteestaff_everyear "Committee staff" personalstaff_everyear "Personal staff" senate_
  > everyear "Senate staff" majority_everyear "Majority party staff" minority_everyear "
  > Minority party staff" dcoffice_everyear "DC office staff" leaderofficestaff_everyear
  >  "Leadership office staff") //
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLE1.csv not found)
  (output written to TABLE1.csv)

972
973
974
  end of do-file

975 do TABLEE1.do

976
977 /*****************************************************************************\
  > |    Title:              TABLED1: Summary Statistics By Year
  >            |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
978
979
980 clear all

981 set more off, permanently
  (set more preference recorded)

982 numlabel, add
  (dataset has no value labels)
```

```
983 set maxvar 32000


984
985
986 use congress_yearly.dta, clear

987
988 * generate percentage change in annual pay
989 sort stafferid year

990 bysort stafferid: gen percentchange_dannualpay = abs((adjdaily_annualpay[_n]-adjdail
  > y_annualpay[_n-1])/adjdaily_annualpay[_n-1])*100 if year[_n]==year[_n-1]+1
  (63,882 missing values generated)

991
992 collapse (mean) adjannual_pay percentchange_dannualpay last=lastyear lobby=lobbydire
  > ctafter touncovered = switchtouncovered_treatment (count) n=daysworked, by(year)

993
994 * display percentages btw 1-100
995 foreach var in last lobby touncovered {
    2.         replace `var'=`var'*100
    3. }
  (15 real changes made)
  (16 real changes made)
  (15 real changes made)

996
997 order year n adjannual_pay percentchange_dannualpay touncovered last lobby

998
999 export excel summarystats_year, firstrow(variables) replace
  file summarystats_year.xls saved

1000
  end of do-file

1001do TABLEE2.do

1002
1003/*******************************************************************************\
  > |    Title:              Table D2: Regression Models for Switching Across Threshold|
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*******************************************************************************/
1004
1005
1006clear all

1007set more off, permanently
  (set more preference recorded)

1008numlabel, add
  (dataset has no value labels)

1009set maxvar 32000
```

```
1010
1011
1012use congress_yearly.dta, clear

1013
1014*------------------------------------------------------------------------------*
1015*                                                    Switching behavior by quanti
  > les                                  *
1016*------------------------------------------------------------------------------*
1017
1018* Note that I care about the LANDING quantile of staffers, i.e. I want
1019* changes between year t and t+1 (instead of t-1 and t as in the main analysis).
1020
1021* We therefore need to redefine the treatment period (after HLOGA) and the switching
  >  indicator.
1022* Administrative staff is excluded since they have a cutoff different from the 75% (
  > see manuscript for details).
1023
1024gen posttreat2 = 0

1025replace posttreat2 = 1 if year>=2007
  (189,075 real changes made)

1026
1027xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit

1028gen switchtouncovered2 = F.switchtouncovered_treatment if nonadmin_everyear==1
  (99,515 missing values generated)

1029gen switchtocovered2 = F.switchtocovered_treatment if nonadmin_everyear==1
  (99,515 missing values generated)

1030
1031****************************************
1032* Quantiles for switchers into coverage
1033capture drop groups tocovered

1034xtile groups = percent_annualpay if percent_annualpay<=0.75 & switchtocovered2!=., n
  > (100)

1035
1036
1037****************************************
1038* Quantiles for switchers out of coverage
1039
1040capture drop groups2 touncovered

1041xtile groups2 = percent_annualpay if percent_annualpay>0.75 & switchtouncovered2!=.,
  >  n(11)

1042
1043
1044
1045************************************
1046** Switches to covered (right below)
1047
1048xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit
```

```
1049
1050reg switchtocovered2 posttreat2 if percent_annualpay<=0.75 & percent_annualpay>=0.65
  > , robust

  Linear regression                               Number of obs     =      9,751
                                                  F(1, 9749)        =      10.80
                                                  Prob > F          =     0.0010
                                                  R-squared         =     0.0011
                                                  Root MSE          =     .46605

------------------------------------------------------------------------------
             |               Robust
switchtoco~2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  posttreat2 |  -.0323905   .0098557    -3.29   0.001    -.0517096   -.0130714
       _cons |   .3399331    .007911    42.97   0.000     .3244259    .3554402
------------------------------------------------------------------------------

1051summarize switchtocovered2 if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
switchtoco~2 |      9,751    .3194544    .4662892          0          1

1052estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .31945441

1053est store mod1

1054
1055reg switchtocovered2 posttreat2 daysworked committeestaff_everyear personalstaff_eve
  > ryear senate_everyear dcoffice_everyear leaderofficestaff_everyear if percent_annual
  > pay<=0.75 & percent_annualpay>=0.65, robust

  Linear regression                               Number of obs     =      9,751
                                                  F(7, 9743)        =      12.61
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.0083
                                                  Root MSE          =     .46451

------------------------------------------------------------------------------
             |               Robust
switchtocovered2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Int
> erval]
-------------+----------------------------------------------------------------
  posttreat2 |  -.0282604   .0098496    -2.87   0.004    -.0475676   -.0
> 089532
  daysworked |   .0003187   .0000746     4.27   0.000     .0001725    .0
> 004649
committeestaff_everyear |   .0421748   .0161358     2.61   0.009     .0105454    .0
> 738043
personalstaff_everyear |  -.0315762   .0226095    -1.40   0.163    -.0758955    .0
> 127432
senate_everyear |  -.0217954   .0094654    -2.30   0.021    -.0403496   -.0
> 032413
dcoffice_everyear |   .0970866   .0168638     5.76   0.000     .0640301    .1
> 301432
leaderofficestaff_everyear |   .0361639   .0216207     1.67   0.094    -.0062172    .0
> 785451
       _cons |   .1847174   .0314564     5.87   0.000     .1230564    .2
> 463785
------------------------------------------------------------------------------
```

```
1056summarize switchtocovered2 if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
switchtoco~2	**9,751**	**.3194544**	**.4662892**	**0**	**1**

```
1057estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .31945441

1058est store mod2

1059estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1060
1061
1062
1063*************************************
1064** Switches to uncovered (right above)
1065
1066reg switchtouncovered2 posttreat2 if percent_annualpay>0.75 & percent_annualpay<=0.9
  > 0, robust

  Linear regression                               Number of obs     =     10,846
                                                  F(1, 10844)       =       5.70
                                                  Prob > F          =     0.0170
                                                  R-squared         =     0.0005
                                                  Root MSE          =     .27469
```

switchtoun~2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
posttreat2	**.0130061**	**.0054471**	**2.39**	**0.017**	**.0023288**	**.0236833**
_cons	**.073618**	**.0043206**	**17.04**	**0.000**	**.0651488**	**.0820871**

```
1067summarize switchtouncovered2 if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
switchtoun~2	**10,846**	**.0822423**	**.2747462**	**0**	**1**

```
1068estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .0822423

1069est store mod3

1070
1071reg switchtouncovered2 posttreat2 daysworked committeestaff_everyear personalstaff_e
  > veryear senate_everyear dcoffice_everyear leaderofficestaff_everyear if percent_annu
  > alpay>0.75 & percent_annualpay<=0.90, robust

  Linear regression                               Number of obs     =     10,846
                                                  F(7, 10838)       =      22.06
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.0262
                                                  Root MSE          =     .27121
```

```
------------------------------------------------------------------------------
switchtouncovered2 |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf. Int
> erval]
-------------------+----------------------------------------------------------
                   |
          posttreat2 |   .0144242   .0053734     2.68   0.007     .0038913    .0
> 249571
         daysworked |  -.0007727     .00008    -9.66   0.000    -.0009295   -.0
> 006159
 committeestaff_everyear |   .0233634   .0100364     2.33   0.020     .0036902    .0
> 430366
  personalstaff_everyear |   .0599015   .0170538     3.51   0.000     .0264729
> .09333
      senate_everyear |  -.0149605   .0053057    -2.82   0.005    -.0253607   -.0
> 045603
    dcoffice_everyear |  -.0110439   .0143442    -0.77   0.441    -.0391611    .0
> 170732
leaderofficestaff_everyear |    .059265   .0140546     4.22   0.000     .0317155    .0
> 868145
               _cons |   .3091301   .0307623    10.05   0.000     .2488304    .3
> 694297
------------------------------------------------------------------------------
```

```
1072summarize switchtouncovered2 if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
switchtoun~2	10,846	.0822423	.2747462	0	1

```
1073estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .0822423

1074est store mod4

1075estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1076
1077esttab mod1 mod2 mod3 mod4 using "TABLED2.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) keep(posttreat2) coeflabels(posttrea
  > t2 "After HLOGA") ///
  >         stats(fixed ymean N r2, fmt(0 3 0 3) labels("Controls" "Mean of DV" "Observa
  > tions" "R2")) ///
  >         label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels nonotes noconstant ///
  >         nomtitles mgroups("Switch to covered" "Switch to uncovered", pattern(1 0 1 0
  > ))
  (note: file TABLED2.csv not found)
  (output written to TABLED2.csv)

1078
  end of do-file
```

```
1079do TABLEE3.do

1080
1081/*******************************************************************************\
  > |    Title:              Table D3: Regression Models for Becoming Lobbyist -       |
  >                                          Main Specification
  >                                                 |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                  |
  > \*******************************************************************************/
1082
1083clear all

1084set more off, permanently
  (set more preference recorded)

1085numlabel, add
  (dataset has no value labels)

1086set maxvar 32000


1087
1088use congress_yearly.dta, clear

1089xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1090
1091*****************************************
1092** 2008-2016
1093
1094xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==1, fe vce(cl
  > uster stafferid)

  Fixed-effects (within) regression               Number of obs     =    143,745
  Group variable: stafferid                       Number of groups  =     37,744

  R-sq:                                           Obs per group:
       within  = 0.0137                                         min =          1
       between = 0.0162                                         avg =        3.8
       overall = 0.0003                                         max =          9

                                                  F(9,37743)        =     126.50
  corr(u_i, Xb)  = -0.1612                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 37,744 clusters in sta
  > fferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |   .0295081    .008833     3.34   0.001     .0121953
  > .046821
             |
                        year |
                        2009 |   .0123738   .0009947    12.44   0.000     .0104241    .
  > 0143235
                        2010 |   .0173314    .001109    15.63   0.000     .0151578
  > .019505
                        2011 |   .0287125   .0013439    21.37   0.000     .0260785    .
  > 0313465
                        2012 |   .0242138   .0012263    19.75   0.000     .0218103    .
  > 0266173
                        2013 |    .033533   .0013905    24.12   0.000     .0308077    .
```

```
> 0362583
                    2014 |   .0345415   .0013672    25.26   0.000     .0318617    .
> 0372213
                    2015 |   .0382672   .0014293    26.77   0.000     .0354658    .
> 0410687
                    2016 |   .0506081   .0017306    29.24   0.000      .047216    .
> 0540001
                         |
                   _cons |  -.0123456   .0008666   -14.25   0.000    -.0140442   -.
> 0106471
------------------------------------------------------------------------------
  _______

                 sigma_u |  .11383324
                 sigma_e |  .10609989
                     rho |  .53511885   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

1095summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

1096estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

1097est store model1

1098estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1099
1100
1101xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe clus
  > ter(stafferid)

  Fixed-effects (within) regression               Number of obs     =    143,745
  Group variable: stafferid                       Number of groups  =     37,744

  R-sq:                                           Obs per group:
       within  = 0.0556                                         min =          1
       between = 0.0057                                         avg =        3.8
       overall = 0.0342                                         max =          9

                                                  F(17,37743)       =      85.89
  corr(u_i, Xb)  = -0.0635                        Prob > F          =     0.0000

                                        (Std. Err. adjusted for 37,744 clusters in sta
  > fferid)
------------------------------------------------------------------------------
  _______

             lobbydirectafter |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------------------------+----------------------------------------------------------------
  _______

switchtouncovered_treatment |   .0193426    .008493     2.28   0.023     .0026961    .
> 0359891
                 daysworked |  -.0002568   7.74e-06   -33.19   0.000    -.0002719   -.
> 0002416
    committeestaff_everyear |  -.0051628    .002796    -1.85   0.065    -.0106429    .
> 0003174
     personalstaff_everyear |   -.010895   .0042787    -2.55   0.011    -.0192814   -.
> 0025086
           senate_everyear |  -.0001803   .0027428    -0.07   0.948    -.0055563    .
```

```
> 0051957
majority_everyear |  -.0032986   .0029908    -1.10   0.270    -.0091605    .
> 0025634
minority_everyear |  -.0107171   .0030576    -3.51   0.000    -.0167101   -
> .004724
dcoffice_everyear |   .0071815   .0014818     4.85   0.000     .0042772    .
> 0100859
 leaderofficestaff_everyear |    .000273   .0046906     0.06   0.954    -.0089207    .
> 0094666
                           |
                      year |
                      2009 |   .0034796    .000947     3.67   0.000     .0016234    .
> 0053357
                      2010 |   .0090655   .0010504     8.63   0.000     .0070068    .
> 0111243
                      2011 |   .0102524   .0011767     8.71   0.000     .0079461    .
> 0125587
                      2012 |   .0109109   .0011044     9.88   0.000     .0087462    .
> 0130755
                      2013 |   .0119769   .0011817    10.14   0.000     .0096608    .
> 0142931
                      2014 |   .0164736   .0011484    14.34   0.000     .0142226    .
> 0187246
                      2015 |   .0141393    .001152    12.27   0.000     .0118814    .
> 0163972
                      2016 |   .0195875   .0015713    12.47   0.000     .0165077    .
> 0226673
                           |
                     _cons |   .0951273   .0036729    25.90   0.000     .0879283    .
> 1023262
-----------------------------+------------------------------------------------------------------------------
  _______

                   sigma_u |  .11176395
                   sigma_e |  .10382516
                       rho |  .53677385   (fraction of variance due to u_i)
-----------------------------+------------------------------------------------------------------------------
  _______

1102summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

1103estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

1104est store model2

1105estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1106
1107
1108xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe clus
  > ter(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    128,067
  Group variable: stafferid                       Number of groups  =     34,438
```

R-sq:
within = **0.0588**
between = **0.0147**
overall = **0.0340**

Obs per group:
min = **1**
avg = **3.7**
max = **9**

F(**18,34437**) = **76.40**
corr(u_i, Xb) = **-0.1154** Prob > F = **0.0000**

(Std. Err. adjusted for **34,438** clusters in sta
> fferid)

| lobbydirectafter | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| switchtouncovered_treatment | **.022486** | **.0092623** | **2.43** | **0.015** | **.0043315** | **.
> 0406405** |
| daysworked | **-.0002711** | **8.49e-06** | **-31.92** | **0.000** | **-.0002877** | **-.
> 0002544** |
| experience_imp | **.0026819** | **.0003376** | **7.94** | **0.000** | **.0020202** | **.
> 0033436** |
| experience_sq | **9.96e-06** | **.0000151** | **0.66** | **0.510** | **-.0000197** | **.
> 0000396** |
| committeestaff_everyear | **-.0052232** | **.0029024** | **-1.80** | **0.072** | **-.010912** | **.
> 0004656** |
| personalstaff_everyear | **-.0138232** | **.0044786** | **-3.09** | **0.002** | **-.0226013** | **-.
> 0050451** |
| senate_everyear | **-.0011263** | **.0028411** | **-0.40** | **0.692** | **-.006695** | **.
> 0044425** |
| majority_everyear | **-.0018443** | **.0030911** | **-0.60** | **0.551** | **-.007903** | **.
> 0042144** |
| minority_everyear | **-.0085231** | **.0031431** | **-2.71** | **0.007** | **-.0146836** | **-.
> 0023626** |
| dcoffice_everyear | **.0080285** | **.0016031** | **5.01** | **0.000** | **.0048863** | **.
> 0111707** |
| leaderofficestaff_everyear | **6.27e-06** | **.0046848** | **0.00** | **0.999** | **-.0091761** | **.
> 0091886** |
| year | | | | | | |
| 2009 | **.0020858** | **.0010403** | **2.01** | **0.045** | **.0000469** | **.
> 0041248** |
| 2010 | **.0051949** | **.0011293** | **4.60** | **0.000** | **.0029815** | **.
> 0074084** |
| 2011 | **.0043472** | **.0013085** | **3.32** | **0.001** | **.0017824** | **.
> 0069119** |
| 2012 | **.0015789** | **.0012427** | **1.27** | **0.204** | **-.0008568** | **.
> 0040146** |
| 2013 | **.0004993** | **.0014092** | **0.35** | **0.723** | **-.0022627** | **.
> 0032614** |
| 2014 | **.0023233** | **.0014529** | **1.60** | **0.110** | **-.0005244** |
> **.005171** |
| 2015 | **-.003379** | **.001516** | **-2.23** | **0.026** | **-.0063505** | **-.
> 0004076** |
| 2016 | **0** | (omitted) | | | | |
| _cons | **.0926932** | **.0041927** | **22.11** | **0.000** | **.0844754** |
> **.100911** |

sigma_u	**.10995727**
sigma_e	**.10672906**
rho	**.5148948** (fraction of variance due to u_i)

```
1109summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**128,067**	**.0146017**	**.1199526**	**0**	**1**

```
1110estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01460173

1111est store model3

1112estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1113
1114
1115*****************************************
1116** 2007-2016
1117
1118
1119xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==1 | year==20
  > 07, fe cluster(stafferid)

  Fixed-effects (within) regression               Number of obs     =    159,890
  Group variable: stafferid                       Number of groups  =     41,264

  R-sq:                                           Obs per group:
       within  = 0.0122                                         min =          1
       between = 0.0225                                         avg =        3.9
       overall = 0.0000                                         max =         10

                                                  F(10,41263)       =     102.61
  corr(u_i, Xb)  = -0.1744                        Prob > F          =     0.0000

                                               (Std. Err. adjusted for 41,264 clusters in sta
  > fferid)
```

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. In
switchtouncovered_treatment	**.0319949**	**.008403**	**3.81**	**0.000**	**.0155249**
> 0484649					
year					
2008	**.0120709**	**.0011665**	**10.35**	**0.000**	**.0097846**
> 0143572					
2009	**.018041**	**.0012538**	**14.39**	**0.000**	**.0155836**
> 0204984					
2010	**.0208958**	**.0013021**	**16.05**	**0.000**	**.0183436**
> 0234479					
2011	**.0312933**	**.0015017**	**20.84**	**0.000**	**.0283499**
> 0342367					
2012	**.0259342**	**.0013794**	**18.80**	**0.000**	**.0232305**
> 0286378					
2013	**.0349301**	**.0015374**	**22.72**	**0.000**	**.0319167**
> 0379435					
2014	**.0356341**	**.0014932**	**23.86**	**0.000**	**.0327074**
> 0385607					
2015	**.0391592**	**.0015478**	**25.30**	**0.000**	**.0361255**
> 0421928					
2016	**.0513981**	**.0018339**	**28.03**	**0.000**	**.0478036**
> 0549925					
_cons	**-.0117588**	**.0010125**	**-11.61**	**0.000**	**-.0137434**
> 0097743					

```
------------------------------+----------------------------------------------------------------
  -------
                    sigma_u |  .12531552
                    sigma_e |  .10757815
                        rho |  .57572161   (fraction of variance due to u_i)
------------------------------+----------------------------------------------------------------
  -------

1120summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937          0          1

1121estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1122est store model1b

1123estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1124
1125xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe cluster(stafferid)

  Fixed-effects (within) regression               Number of obs     =    159,890
  Group variable: stafferid                       Number of groups  =     41,264

  R-sq:                                           Obs per group:
       within  = 0.0580                                         min =          1
       between = 0.0081                                         avg =        3.9
       overall = 0.0358                                         max =         10

                                                  F(18,41263)       =      89.15
  corr(u_i, Xb)  = -0.0639                        Prob > F          =     0.0000

                                         (Std. Err. adjusted for 41,264 clusters in sta
  > fferid)
------------------------------+----------------------------------------------------------------
  -------
                              |               Robust
           lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
------------------------------+----------------------------------------------------------------
  -------
  switchtouncovered_treatment |    .021076   .0080581     2.62   0.009     .0052819    .
  > 0368701
                  daysworked |  -.0002711   7.58e-06   -35.76   0.000    -.0002859   -.
  > 0002562
     committeestaff_everyear |  -.0077055   .0026579    -2.90   0.004    -.0129151    -
  > .002496
      personalstaff_everyear |  -.0134916   .0040135    -3.36   0.001    -.0213582    -
  > .005625
            senate_everyear |   .0004499   .0027101     0.17   0.868    -.0048619    .
  > 0057617
          majority_everyear |  -.0028747   .0028314    -1.02   0.310    -.0084242    .
  > 0026749
          minority_everyear |  -.0106374   .0028844    -3.69   0.000    -.0162909   -.
  > 0049839
          dcoffice_everyear |   .0072431     .00141     5.14   0.000     .0044794    .
  > 0100068
   leaderofficestaff_everyear |  -.0019075    .004362    -0.44   0.662    -.0104571
  > .006642
                              |
                         year |
```

```
                    2008 |   .0083154   .0011166     7.45   0.000     .0061267
> .010504
                    2009 |   .0077282   .0011832     6.53   0.000      .005409    .
> 0100473
                    2010 |   .0126581   .0012305    10.29   0.000     .0102463    .
> 0150699
                    2011 |   .0126811   .0013485     9.40   0.000     .0100379    .
> 0153243
                    2012 |   .0132778   .0012706    10.45   0.000     .0107874    .
> 0157682
                    2013 |   .0137167   .0013654    10.05   0.000     .0110405    .
> 0163928
                    2014 |   .0182721   .0013119    13.93   0.000     .0157007    .
> 0208436
                    2015 |   .0154942   .0013272    11.67   0.000     .0128928    .
> 0180955
                    2016 |   .0205494   .0016986    12.10   0.000     .0172201    .
> 0238787
                         |
                   _cons |    .100468   .0036029    27.88   0.000     .0934062    .
> 1075299
------------------------------------------------------------------------------
  _______

                 sigma_u |   .1226566
                 sigma_e |  .10505643
                     rho |  .57683201   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

1126summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937         0          1

1127estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1128est store model2b

1129estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1130
1131
1132xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    140,194
  Group variable: stafferid                       Number of groups  =     36,921

  R-sq:                                           Obs per group:
       within  = 0.0614                                         min =          1
       between = 0.0178                                         avg =        3.8
       overall = 0.0379                                         max =         10

                                                  F(19,36920)       =      79.21
  corr(u_i, Xb)  = -0.0971                        Prob > F          =     0.0000
```

(Std. Err. adjusted for **36,921** clusters in sta
> fferid)

| lobbydirectafter | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| switchtouncovered_treatment | **.0217179** | **.0087302** | **2.49** | **0.013** | **.0046064** | **.**
> **0388294** |
| daysworked | **-.000286** | **8.38e-06** | **-34.13** | **0.000** | **-.0003025** | **-.**
> **0002696** |
| experience_imp | **.0029973** | **.0003152** | **9.51** | **0.000** | **.0023795** | **.**
> **0036152** |
| experience_sq | **-.0000124** | **.000014** | **-0.89** | **0.376** | **-.0000398** |
> **.000015** |
| committeestaff_everyear | **-.0074704** | **.0027627** | **-2.70** | **0.007** | **-.0128854** | **-.**
> **0020553** |
| personalstaff_everyear | **-.0164459** | **.004219** | **-3.90** | **0.000** | **-.0247152** | **-.**
> **0081766** |
| senate_everyear | **-.0006105** | **.002791** | **-0.22** | **0.827** | **-.0060809** | **.**
> **0048599** |
| majority_everyear | **-.0009194** | **.0029322** | **-0.31** | **0.754** | **-.0066667** | **.**
> **0048278** |
| minority_everyear | **-.0081563** | **.0029755** | **-2.74** | **0.006** | **-.0139885** | **-.**
> **0023242** |
| dcoffice_everyear | **.008182** | **.0015344** | **5.33** | **0.000** | **.0051746** | **.**
> **0111894** |
| leaderofficestaff_everyear | **-.0028144** | **.0043187** | **-0.65** | **0.515** | **-.0112791** | **.**
> **0056503** |
| year | | | | | | |
| 2008 | **.0073519** | **.0012485** | **5.89** | **0.000** | **.0049048** |
> **.009799** |
| 2009 | **.0052823** | **.0012794** | **4.13** | **0.000** | **.0027746** | **.**
> **0077901** |
| 2010 | **.0075694** | **.0012879** | **5.88** | **0.000** | **.0050451** | **.**
> **0100937** |
| 2011 | **.0055834** | **.0014335** | **3.90** | **0.000** | **.0027737** |
> **.008393** |
| 2012 | **.0027641** | **.001335** | **2.07** | **0.038** | **.0001476** | **.**
> **0053807** |
| 2013 | **.0011182** | **.001484** | **0.75** | **0.451** | **-.0017906** |
> **.004027** |
| 2014 | **.0030763** | **.0014922** | **2.06** | **0.039** | **.0001515** |
> **.006001** |
| 2015 | **-.0030358** | **.0015365** | **-1.98** | **0.048** | **-.0060475** | **-.**
> **0000242** |
| 2016 | **0** | (omitted) | | | | |
| _cons | **.0980009** | **.0040991** | **23.91** | **0.000** | **.0899665** | **.**
> **1060352** |

sigma_u	**.11697141**	
sigma_e	**.10808499**	
rho	**.53942386**	(fraction of variance due to u_i)

```
1133summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**140,194**	**.0153716**	**.1230259**	**0**	**1**

```
1134estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01537156

1135est store model3b

1136estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1137
1138
1139esttab model1 model2 model3 model1b model2b model3b using "TABLED3.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2008-2016" "2007-2016", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment "Switch to uncovered" daysworked "Day
  > s worked" experience_imp "Hill experience" experience_sq "Hill experience sq." commi
  > tteestaff_everyear "Committee staff" personalstaff_everyear "Personal staff" senate_
  > everyear "Senate staff" majority_everyear "Majority party staff" minority_everyear "
  > Minority party staff" dcoffice_everyear "DC office staff" leaderofficestaff_everyear
  >  "Leadership office staff") //
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED3.csv not found)
  (output written to TABLED3.csv)

1140
1141
  end of do-file

1142do TABLEE4.do

1143
1144/*****************************************************************************\
  > |    Title:              Table D4: Regression Models for Switching Below Threshold |
  >                                                  and Demotions in Rank
  >                                                 |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
1145
1146clear all

1147set more off, permanently
  (set more preference recorded)

1148numlabel, add
  (dataset has no value labels)
```

```
1149set maxvar 32000


1150
1151use congress_yearly.dta, clear

1152
1153* Now analyze whether they are more likely to see demotions
1154* A lower rank measures more senior positions in Ritchie and You (2021)
1155xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1156sort stafferid year

1157gen demotion = max_rank[_n-1] < max_rank & stafferid[_n-1]==stafferid & year[_n-1]==
  > year-1

1158replace demotion = . if max_rank==.
  (44,117 real changes made, 44,117 to missing)

1159
1160bysort stafferid: egen temp = total(switchtouncovered_treatment) if posttreat==1 //
  > only switchers after HLOGA
  (135,889 missing values generated)

1161
1162* regression of demotion on switching
1163xtreg demotion switchtouncovered_treatment if temp>0, fe cluster(stafferid)

  Fixed-effects (within) regression               Number of obs     =     84,303
  Group variable: stafferid                       Number of groups  =     27,162

  R-sq:                                           Obs per group:
       within  = 0.0024                                         min =          1
       between = 0.0009                                         avg =        3.1
       overall = 0.0029                                         max =         15

                                                  F(1,27161)        =      35.90
  corr(u_i, Xb)  = 0.0102                         Prob > F          =     0.0000

                                        (Std. Err. adjusted for 27,162 clusters in sta
  > fferid)
------------------------------------------------------------------------------
             |               Robust
    demotion |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |   .0636267   .0106198     5.99   0.000     .0428114    .
  > 0844421
               _cons |   .0211714    .000133   159.15   0.000     .0209106    .
  > 0214321
-------------+----------------------------------------------------------------
             sigma_u |  .09092628
             sigma_e |  .15032063
                 rho |  .26787265   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
1164summarize demotion if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
    demotion |     84,303    .0219684    .1465811          0          1

1165estadd scalar ymean = r(mean)

  added scalar:
               e(ymean) =  .02196838

1166est store mod1

1167estadd local fixed "Yes" , replace

  added macro:
               e(fixed) : "Yes"

1168
1169xtreg demotion switchtouncovered_treatment i.year if temp>0, fe cluster(stafferid)

  Fixed-effects (within) regression               Number of obs     =     84,303
  Group variable: stafferid                       Number of groups  =     27,162

  R-sq:                                           Obs per group:
       within  = 0.0060                                         min =          1
       between = 0.0009                                         avg =        3.1
       overall = 0.0051                                         max =         15

                                                  F(15,27161)       =      13.39
  corr(u_i, Xb)  = -0.0020                        Prob > F          =     0.0000

                                         (Std. Err. adjusted for 27,162 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------------
  _______
                                 |               Robust
                        demotion |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------------
  _______
  switchtouncovered_treatment |   .0623304   .0107788     5.78   0.000     .0412035    .
  > 0834574
                                 |
                           year |
                           2003 |   .0112996   .0018814     6.01   0.000     .0076119    .
  > 0149873
                           2004 |  -.0014069   .0016931    -0.83   0.406    -.0047255    .
  > 0019116
                           2005 |   .0072917   .0019336     3.77   0.000     .0035018    .
  > 0110816
                           2006 |   .0001132   .0018067     0.06   0.950     -.003428    .
  > 0036544
                           2007 |   .0180998   .0022635     8.00   0.000     .0136633    .
  > 0225363
                           2008 |   -.014359   .0088617    -1.62   0.105    -.0317284    .
  > 0030104
                           2009 |   .0391291   .0138243     2.83   0.005     .0120329    .
  > 0662254
                           2010 |  -.0036803   .0090781    -0.41   0.685    -.0214738    .
  > 0141133
                           2011 |   .0217272   .0132112     1.64   0.100    -.0041674    .
  > 0476217
                           2012 |  -.0244613   .0090425    -2.71   0.007    -.0421851   -.
  > 0067375
                           2013 |   .0106326   .0125381     0.85   0.396    -.0139429
  > .035208
                           2014 |   .0026427   .0130244     0.20   0.839    -.0228858    .
  > 0281712
                           2015 |    .000928   .0132377     0.07   0.944    -.0250185    .
  > 0268746
                           2016 |   .0021675   .0151939     0.14   0.887    -.0276133    .
```

```
> 0319484
                       _cons |   .0153248   .0012189    12.57   0.000     .0129358    .
> 0177138
-----------------------------+------------------------------------------------------------
  -------

                     sigma_u |  .09098353
                     sigma_e |  .15006656
                         rho |  .26878401   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  -------

1170summarize demotion if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
    demotion |     84,303    .0219684    .1465811          0          1

1171estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02196838

1172est store mod2

1173estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1174
1175esttab mod* using "TABLED4.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         nomtitles ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED4.csv not found)
  (output written to TABLED4.csv)

1176
  end of do-file

1177do TABLEE5.do

1178
1179/*****************************************************************************\
  > |    Title:              Table D5: Intraclass Correlation Coefficients for Staffer |
  >                                          Random Intercepts on Annual Salary
  >                                  |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                     |
  > \*****************************************************************************/
1180
1181clear all

1182set more off, permanently
  (set more preference recorded)
```

```
1183 numlabel, add
  (dataset has no value labels)

1184 set maxvar 32000


1185
1186 use congress_yearly.dta, clear

1187
1188 mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==1

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -60589.956
  Iteration 1:   log likelihood = -60589.901
  Iteration 2:   log likelihood = -60589.901

  Computing standard errors:

  Mixed-effects ML regression                     Number of obs     =      4,978
  Group variable: stafferid                       Number of groups  =      1,362

                                                  Obs per group:
                                                                min =          1
                                                                avg =        3.7
                                                                max =          9

                                                  Wald chi2(0)      =          .
  Log likelihood = -60589.901                     Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	128225.1	915.171	140.11	0.000	126431.4	130018.8

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity				
var(_cons)	5.25e+08	4.76e+07	4.39e+08	6.27e+08
var(Residual)	1.82e+09	4.33e+07	1.74e+09	1.91e+09

```
  LR test vs. linear model: chibar2(01) = 263.76        Prob >= chibar2 = 0.0000

1189 estat icc

  Intraclass correlation
```

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	.2236908	.0175675	.1911485	.2599925

```
1190 scalar icc21 = r(icc2)
```

```
1191 scalar seicc1 = r(se2)

1192
1193 mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==2

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -31188.082
  Iteration 1:   log likelihood =  -31188.08

  Computing standard errors:

  Mixed-effects ML regression                     Number of obs     =      2,563
  Group variable: stafferid                       Number of groups  =        975

                                                  Obs per group:
                                                                min =          1
                                                                avg =        2.6
                                                                max =          9

                                                  Wald chi2(0)      =          .
  Log likelihood =  -31188.08                     Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	108027.3	1327.799	81.36	0.000	105424.8	110629.7

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity				
var(_cons)	9.59e+08	7.99e+08	8.15e+08	1.13e+09
var(Residual)	1.55e+09	5.44e+07	1.45e+09	1.66e+09

```
  LR test vs. linear model: chibar2(01) = 358.58        Prob >= chibar2 = 0.0000

1194 estat icc

  Intraclass correlation
```

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	.3819146	.023512	.3370095	.428932

```
1195 scalar icc22 = r(icc2)

1196 scalar seicc2 = r(se2)

1197
1198 mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==3

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -72372.933
  Iteration 1:   log likelihood = -72372.933

  Computing standard errors:

  Mixed-effects ML regression                     Number of obs     =      6,139
  Group variable: stafferid                       Number of groups  =      1,738
```

```
                                                Obs per group:
                                                              min =          1
                                                              avg =        3.5
                                                              max =          9

                                                Wald chi2(0)      =          .
Log likelihood = -72372.933                     Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	**71745.03**	**729.2424**	**98.38**	**0.000**	**70315.74**	**73174.32**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity var(_cons)	**6.55e+08**	**3.10e+07**	**5.96e+08**	**7.18e+08**
var(Residual)	**6.95e+08**	**1.47e+07**	**6.67e+08**	**7.25e+08**

LR test vs. linear model: chibar2(01) = **1849.02** Prob >= chibar2 = **0.0000**

```
1199 estat icc

  Intraclass correlation
```

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	**.484947**	**.0136893**	**.4581854**	**.5117951**

```
1200 scalar icc23 = r(icc2)

1201 scalar seicc3 = r(se2)

1202
1203 mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==4

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -47695.087
  Iteration 1:   log likelihood = -47695.087

  Computing standard errors:

  Mixed-effects ML regression                   Number of obs     =      4,017
  Group variable: stafferid                     Number of groups  =      1,566

                                                Obs per group:
                                                              min =          1
                                                              avg =        2.6
                                                              max =          9

                                                Wald chi2(0)      =          .
  Log likelihood = -47695.087                   Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	**86561.19**	**864.0482**	**100.18**	**0.000**	**84867.69**	**88254.69**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity var(_cons)	**7.83e+08**	**4.31e+07**	**7.03e+08**	**8.72e+08**
var(Residual)	**7.55e+08**	**2.15e+07**	**7.14e+08**	**7.99e+08**

LR test vs. linear model: chibar2(01) = **906.45** Prob >= chibar2 = **0.0000**

```
1204 estat icc
```

Intraclass correlation

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	**.5089411**	**.0170044**	**.4756227**	**.5421803**

```
1205 scalar icc24 = r(icc2)

1206 scalar seicc4 = r(se2)

1207
1208 mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==5
```

Performing EM optimization:

Performing gradient-based optimization:

Iteration 0: log likelihood = **-86102.219**
Iteration 1: log likelihood = **-86102.219**

Computing standard errors:

Mixed-effects ML regression — Number of obs = **7,290**
Group variable: **stafferid** — Number of groups = **2,410**

Obs per group:
min = **1**
avg = **3.0**
max = **9**

Wald chi2(**0**) = **.**
Log likelihood = **-86102.219** — Prob > chi2 = **.**

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	**60535.48**	**619.0134**	**97.79**	**0.000**	**59322.23**	**61748.72**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity var(_cons)	**6.13e+08**	**2.53e+07**	**5.65e+08**	**6.65e+08**
var(Residual)	**7.20e+08**	**1.42e+07**	**6.93e+08**	**7.48e+08**

LR test vs. linear model: chibar2(01) = **2089.92** Prob >= chibar2 = **0.0000**

```
1209estat icc
```

Intraclass correlation

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	**.4598169**	**.0120309**	**.436344**	**.4834695**

```
1210scalar icc25 = r(icc2)

1211scalar seicc5 = r(se2)

1212
1213mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==6
```

Performing EM optimization:

Performing gradient-based optimization:

Iteration 0: log likelihood = **-301751.28**
Iteration 1: log likelihood = **-301751.28**

Computing standard errors:

Mixed-effects ML regression — Number of obs = **25,409**
Group variable: **stafferid** — Number of groups = **8,499**

Obs per group:
min = **1**
avg = **3.0**
max = **9**

Wald chi2(**0**) = **.**
Log likelihood = **-301751.28** — Prob > chi2 = **.**

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	**65402.41**	**408.009**	**160.30**	**0.000**	**64602.72**	**66202.09**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity var(_cons)	**1.09e+09**	**2.11e+07**	**1.05e+09**	**1.13e+09**
var(Residual)	**7.11e+08**	**7598744**	**6.96e+08**	**7.26e+08**

LR test vs. linear model: chibar2(01) = **12322.80** Prob >= chibar2 = **0.0000**

```
1214estat icc
```

Intraclass correlation

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	**.6052213**	**.0055316**	**.5943294**	**.6160098**

```
1215scalar icc26 = r(icc2)

1216scalar seicc6 = r(se2)

1217
1218mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==7

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -159191.49
  Iteration 1:   log likelihood = -159191.49

  Computing standard errors:

  Mixed-effects ML regression                     Number of obs     =     13,980
  Group variable: stafferid                       Number of groups  =      6,446

                                                  Obs per group:
                                                               min =          1
                                                               avg =        2.2
                                                               max =          9

                                                  Wald chi2(0)      =          .
  Log likelihood = -159191.49                     Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	38734.54	266.3952	145.40	0.000	38212.41	39256.66

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity				
var(_cons)	3.02e+08	7414331	2.88e+08	3.17e+08
var(Residual)	2.68e+08	4072510	2.60e+08	2.76e+08

```
  LR test vs. linear model: chibar2(01) = 5756.57       Prob >= chibar2 = 0.0000

1219estat icc

  Intraclass correlation
```

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	.5299963	.0076759	.514929	.545009

```
1220scalar icc27 = r(icc2)

1221scalar seicc7 = r(se2)

1222
1223mixed adjannual_pay || stafferid: if posttreat==1 & max_rank==8

  Performing EM optimization:

  Performing gradient-based optimization:

  Iteration 0:   log likelihood = -942022.79
  Iteration 1:   log likelihood = -942022.79

  Computing standard errors:

  Mixed-effects ML regression                     Number of obs     =     81,510
  Group variable: stafferid                       Number of groups  =     24,217
```

```
                                                Obs per group:
                                                              min =          1
                                                              avg =        3.4
                                                              max =          9

                                                Wald chi2(0)      =          .
Log likelihood = -942022.79                     Prob > chi2       =          .
```

adjannual_pay	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_cons	**44022.71**	**200.5212**	**219.54**	**0.000**	**43629.69**	**44415.72**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
stafferid: Identity var(_cons)	**8.26e+08**	**8637760**	**8.09e+08**	**8.43e+08**
var(Residual)	**3.50e+08**	**2043617**	**3.46e+08**	**3.54e+08**

LR test vs. linear model: chibar2(01) = **59088.50** Prob >= chibar2 = **0.0000**

```
1224estat icc
```

Intraclass correlation

Level	ICC	Std. Err.	[95% Conf.	Interval]
stafferid	**.7026382**	**.0025723**	**.6975721**	**.707655**

```
1225scalar icc28 = r(icc2)

1226scalar seicc8 = r(se2)

1227
1228
1229matrix RESULTS = (icc21 , seicc1 \ icc22, seicc2 \ icc23, seicc3 \ icc24, seicc4 \ i
  > cc25, seicc5 \ icc26, seicc6 \ icc27, seicc7 \ icc28, seicc8)

1230
1231putexcel set TABLED5, replace
  Note: file will be replaced when the first putexcel command is issued

1232putexcel A1="Rank"
  file TABLED5.xlsx saved

1233putexcel A2="Rank 1"
  file TABLED5.xlsx saved

1234putexcel A3="Rank 2"
  file TABLED5.xlsx saved

1235putexcel A4="Rank 3"
  file TABLED5.xlsx saved

1236putexcel A5="Rank 4"
  file TABLED5.xlsx saved
```

```
1237putexcel A6="Rank 5"
  file TABLED5.xlsx saved

1238putexcel A7="Rank 6"
  file TABLED5.xlsx saved

1239putexcel A8="Rank 7"
  file TABLED5.xlsx saved

1240putexcel A9="Rank 8"
  file TABLED5.xlsx saved

1241putexcel B1="Title Group"
  file TABLED5.xlsx saved

1242putexcel B2="Chief of Staff"
  file TABLED5.xlsx saved

1243putexcel B3="Deputy Chief of Staff"
  file TABLED5.xlsx saved

1244putexcel B4="State/District Director"
  file TABLED5.xlsx saved

1245putexcel B5="Legislative Director"
  file TABLED5.xlsx saved

1246putexcel B6="Communications Director"
  file TABLED5.xlsx saved

1247putexcel B7="Legislative Assistant"
  file TABLED5.xlsx saved

1248putexcel B8="Legislative Correspondent/ Deputy Press Secretary/Specials Director/ De
  > puty State/District Director"
  file TABLED5.xlsx saved

1249putexcel B9="Executive Assistant/ Office Manager/Caseworker/ Staff Assistant"
  file TABLED5.xlsx saved

1250
1251putexcel C1="ICC estimate"
  file TABLED5.xlsx saved

1252putexcel D1="ICC standard error"
  file TABLED5.xlsx saved

1253putexcel C2=matrix(RESULTS)
  file TABLED5.xlsx saved

1254
1255* NOTE (July 2023): a prior version of the manuscript had a mistake in the standard
  > error of the ICC of rank 1 (corrected in final version following conditional accepta
  > nce)
1256
1257
1258
1259
  end of do-file
```

```
1260do TABLEE6.do

1261
1262/*******************************************************************************\
  > |    Title:              TABLED6: Regression Models for Lobbying Revenue
  >    |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*******************************************************************************/
1263
1264
1265clear all

1266set more off, permanently
  (set more preference recorded)

1267numlabel, add
  (dataset has no value labels)

1268set maxvar 32000


1269
1270
1271use lobbyist_yearly.dta, clear

1272
1273reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving if posttreat==1, cluster(staffe
  > rid)
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      2,200
                                                  F(21, 456)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.0419
                                                  Root MSE          =     2.0264

                                       (Std. Err. adjusted for 457 clusters in staff
  > erid)
  ------------------------------------------------------------------------------
    _____
               |               Robust
  log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Inte
  > rval]
  -------------------------------------------------------------------------------
    _____
        1.switcher |   .9361576   .3122809     3.00   0.003     .3224695    1.5
  > 49846
                   |
    yearsinceleaving |
                   1 |   .6341623    .135242     4.69   0.000     .3683873    .89
  > 99373
                   2 |   1.066261   .1595277     6.68   0.000       .75276    1.3
  > 79761
                   3 |    1.21958   .1613062     7.56   0.000     .9025841    1.5
  > 36575
                   4 |   1.300388   .1771747     7.34   0.000     .9522082    1.6
  > 48568
                   5 |   1.218643   .1986692     6.13   0.000     .8282226    1.6
  > 09064
                   6 |   1.139097   .2381546     4.78   0.000     .6710802    1.6
  > 07114
                   7 |   1.309378   .2039104     6.42   0.000     .9086569    1.7
  > 10098
                   8 |    1.22608   .2574964     4.76   0.000     .7200537    1.7
  > 32107
                   9 |   .9165933    .447645     2.05   0.041     .0368904    1.7
  > 96296
                  10 |    .824578   .5623369     1.47   0.143    -.2805152    1.9
  > 29671
```

```
                     11 |   1.939093   .2527232     7.67   0.000     1.442446     2.
> 43574
                        |
  switcher#yearsinceleaving |
                   1  1 |  -.2511209   .3158762    -0.79   0.427    -.8718744    .36
> 96326
                   1  2 |   -.613618   .4134781    -1.48   0.138    -1.426177    .19
> 89409
                   1  3 |  -.7573175   .3251107    -2.33   0.020    -1.396219   -.11
> 84164
                   1  4 |  -.6403976   .3579733    -1.79   0.074     -1.34388    .06
> 30844
                   1  5 |  -.7055236   .4538366    -1.55   0.121    -1.597394     .1
> 86347
                   1  6 |  -.5162864   .5134078    -1.01   0.315    -1.525225    .49
> 26524
                   1  7 |  -.8702492    .587906    -1.48   0.139     -2.02559    .28
> 50919
                   1  8 |  -.3304585   .5365502    -0.62   0.538    -1.384876    .72
> 39593
                   1  9 |  -.2063026   .7080281    -0.29   0.771    -1.597705     1
> .1851
                   1 10 |   .7778304   .6247358     1.25   0.214    -.4498878    2.0
> 05549
                   1 11 |          0  (empty)
                        |
                   _cons |   11.51471   .1531252    75.20   0.000     11.21379    11.
> 81563
------------------------+------------------------------------------------------------
  _____

1274summarize log_adjlobrev if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
  log_adjlob~v |      2,200    13.56952    2.383141          0   16.49321

1275estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  13.569519

1276est store model1

1277estadd local fixed "No" , replace

  added macro:
              e(fixed) : "No"

1278
1279reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving i.year if posttreat==1, cluster
  > (stafferid)
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      2,200
                                                  F(32, 456)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.0465
                                                  Root MSE          =     2.0266

                                               (Std. Err. adjusted for 457 clusters in staff
  > erid)
------------------------+------------------------------------------------------------
  _____

                        |               Robust
       log_adjlobrev_wgt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Inte
  > rval]
------------------------+------------------------------------------------------------
  _____

            1.switcher |   .9215112   .3063081     3.01   0.003     .3195606    1.5
> 23462
                        |
```

yearsinceleaving						
	1	.6719594	.1439786	4.67	0.000	.3890156	.95
> 49033
	2	1.090096	.1951172	5.59	0.000	.7066559	1.4
> 73537
	3	1.246516	.1954986	6.38	0.000	.8623259	1.6
> 30706
	4	1.312087	.2133295	6.15	0.000	.8928558	1.7
> 31317
	5	1.201043	.2491426	4.82	0.000	.7114328	1.6
> 90653
	6	1.126154	.3048432	3.69	0.000	.5270821	1.7
> 25226
	7	1.240974	.3022512	4.11	0.000	.6469962	1.8
> 34952
	8	1.145817	.356146	3.22	0.001	.4459261	1.8
> 45708
	9	.8655805	.5444038	1.59	0.113	-.204271	1.9
> 35432
	10	.7523157	.6916123	1.09	0.277	-.6068268	2.1
> 11458
	11	1.777748	.33768	5.26	0.000	1.114146	2.
> 44135
switcher#yearsinceleaving						
1	1	-.2329222	.3207943	-0.73	0.468	-.8633407	.39
> 74962
1	2	-.625694	.4110401	-1.52	0.129	-1.433462	.18
> 20737
1	3	-.7398715	.3318165	-2.23	0.026	-1.391951	-.08
> 77924
1	4	-.6176233	.3585656	-1.72	0.086	-1.322269	.08
> 70227
1	5	-.6572619	.4552729	-1.44	0.150	-1.551955	.23
> 74313
1	6	-.5045186	.514202	-0.98	0.327	-1.515018	.50
> 59808
1	7	-.9209662	.6008206	-1.53	0.126	-2.101687	.25
> 97544
1	8	-.1998304	.5371493	-0.37	0.710	-1.255425	.85
> 57645
1	9	-.2440846	.7282664	-0.34	0.738	-1.675259	1.
> 18709
1	10	.7033942	.6318963	1.11	0.266	-.5383958	1.9
> 45184
1	11	0	(empty)				
year						
2008		1.046374	.5706969	1.83	0.067	-.075148	2.1
> 67896
2009		.6042563	.5313565	1.14	0.256	-.4399549	1.6
> 48467
2010		.421631	.4958936	0.85	0.396	-.5528891	1.3
> 96151
2011		.3758308	.484984	0.77	0.439	-.57725	1.3
> 28912
2012		.37805	.4684497	0.81	0.420	-.542538	1.2
> 98638
2013		.3446376	.472522	0.73	0.466	-.5839532	1.2
> 73228
2014		.4659673	.4658111	1.00	0.318	-.4494354	1.
> 38137
2015		.6881776	.4595598	1.50	0.135	-.2149401	1.5
> 91295
2016		.6009996	.4657881	1.29	0.198	-.3143579	1.5
> 16357
2017		.4627932	.4765789	0.97	0.332	-.4737701	1.3
> 99356
2018		.6944079	.4858061	1.43	0.154	-.2602884	1.6
> 49104
_cons		10.98164	.4251409	25.83	0.000	10.14617	11.

```
> 81712
```

```
1280summarize log_adjlobrev if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
log_adjlob~v	**2,200**	**13.56952**	**2.383141**	**0**	**16.49321**

```
1281estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  13.569519

1282est store model2

1283estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1284
1285reg log_adjlobrev_wgt i.switcher##i.yearsinceleaving experience_imp daysworked commi
  > tteestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority
  > _everyear dcoffice_everyear leaderofficestaff_everyear log_max_adjannual_pay i.year
  > if posttreat==1, cluster(stafferid)
  note: 1.switcher#10.yearsinceleaving identifies no observations in the sample
  note: 1.switcher#11.yearsinceleaving identifies no observations in the sample

  Linear regression                               Number of obs     =      1,950
                                                  F(41, 404)        =          .
                                                  Prob > F          =          .
                                                  R-squared         =     0.1056
                                                  Root MSE          =     1.9734

                                                (Std. Err. adjusted for 405 clusters in staf
  > ferid)
```

log_adjlobrev_wgt	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Int
1.switcher	**.7743821**	**.310327**	**2.50**	**0.013**	**.1643247**	**1.**
> 384439						
yearsinceleaving						
1	**.7652152**	**.1393602**	**5.49**	**0.000**	**.4912536**	**1.**
> 039177						
2	**1.132831**	**.1965511**	**5.76**	**0.000**	**.7464407**	**1.**
> 519222						
3	**1.310675**	**.1950058**	**6.72**	**0.000**	**.9273225**	**1.**
> 694028						
4	**1.400068**	**.203687**	**6.87**	**0.000**	**.9996493**	**1.**
> 800487						
5	**1.298969**	**.2417884**	**5.37**	**0.000**	**.8236486**	**1**
> .77429						
6	**1.268645**	**.2991897**	**4.24**	**0.000**	**.6804821**	**1.**
> 856808						
7	**1.307849**	**.2963251**	**4.41**	**0.000**	**.725317**	**1.**
> 890381						
8	**1.14263**	**.3954257**	**2.89**	**0.004**	**.3652807**	**1.**
> 919979						
9	**.6826737**	**.645468**	**1.06**	**0.291**	**-.5862216**	**1.**
> 951569						
10	**.6351896**	**.8001693**	**0.79**	**0.428**	**-.9378259**	**2.**
> 208205						
11	**1.696582**	**.3649839**	**4.65**	**0.000**	**.9790775**	**2.**
> 414087						

switcher#yearsinceleaving						
1 1	-.1244956	.308952	-0.40	0.687	-.7318498	.4
> 828586						
1 2	-.6354567	.4523677	-1.40	0.161	-1.524745	.2
> 538318						
1 3	-.7426255	.3773962	-1.97	0.050	-1.484531	-.0
> 007199						
1 4	-.6386081	.4171402	-1.53	0.127	-1.458645	.1
> 814284						
1 5	-.6719665	.581302	-1.16	0.248	-1.814721	.4
> 707878						
1 6	-.7665104	.6583614	-1.16	0.245	-2.060752	.5
> 277316						
1 7	-1.505617	.8471414	-1.78	0.076	-3.170972	.
> 159739						
1 8	-.8125771	.6226187	-1.31	0.193	-2.036554	
> .4114						
1 9	-1.044144	.7319449	-1.43	0.154	-2.48304	.3
> 947527						
1 10	0	(empty)				
1 11	0	(empty)				
experience_imp	.0042582	.0134941	0.32	0.753	-.0222693	.0
> 307856						
daysworked	-.00041	.0006009	-0.68	0.495	-.0015914	.0
> 007713						
committeestaff_everyear	.1280155	.2315481	0.55	0.581	-.3271742	.5
> 832051						
personalstaff_everyear	-3.861265	1.845046	-2.09	0.037	-7.488355	-.2
> 341751						
senate_everyear	.2231129	.1964682	1.14	0.257	-.1631148	.6
> 093406						
majority_everyear	.3000865	.2839505	1.06	0.291	-.2581185	.8
> 582914						
minority_everyear	-.2098195	.314078	-0.67	0.504	-.8272508	.4
> 076118						
dcoffice_everyear	4.152848	1.818205	2.28	0.023	.5785231	7.
> 727173						
leaderofficestaff_everyear	.9176968	.3068637	2.99	0.003	.3144478	1.
> 520946						
log_max_adjannual_pay	.4677493	.2878962	1.62	0.105	-.0982124	1.
> 033711						
year						
2008	1.094117	.84951	1.29	0.199	-.5758948	2.
> 764129						
2009	.7818297	.8512573	0.92	0.359	-.8916173	2.
> 455277						
2010	.6040316	.8268525	0.73	0.465	-1.021439	2.
> 229502						
2011	.5690361	.8044738	0.71	0.480	-1.012441	2.
> 150514						
2012	.6477616	.7940539	0.82	0.415	-.9132318	2.
> 208755						
2013	.6027523	.8016062	0.75	0.453	-.9730879	2.
> 178592						
2014	.6779792	.7960367	0.85	0.395	-.8869121	2.
> 242871						
2015	.8488974	.8035123	1.06	0.291	-.7306898	2.
> 428485						
2016	.7637775	.8106912	0.94	0.347	-.8299225	2.
> 357477						
2017	.6644946	.8203156	0.81	0.418	-.9481255	2.
> 277115						
2018	.9557598	.8350274	1.14	0.253	-.6857816	2.
> 597301						
_cons	4.730959	3.504232	1.35	0.178	-2.157846	11
> .61976						

```
1286summarize log_adjlobrev if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
log_adjlob~v	**1,950**	**13.6105**	**2.374695**	**0**	**16.49321**

```
1287estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  13.610497

1288est store model3

1289estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1290* NOTE (July 2023): a prior version of the manuscript had slightly different results
  >  in Column 3 because one variable had not yet been added to the equation (following
  > a reviewer comment); this has been changed after conditional acceptance
1291
1292esttab model1 model2 model3 using "TABLED6.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(ymean N r2, fmt(3 0 3) labels("Mean of DV"  "Observations" "R2"))  ///
  >         coeflabels(1.switcher "Switcher" 2.yearsinceleaving "Year since leaving Cong
  > ress = 2" 3.yearsinceleaving "Year since leaving Congress = 3" 4.yearsinceleaving "Y
  > ear since leaving Congress = 4" 5.yearsinceleaving "Year since leaving Congress = 5"
  >  6.yearsinceleaving "Year since leaving Congress = 6" 7.yearsinceleaving "Year since
  >  leaving Congress = 7" 8.yearsinceleaving "Year since leaving Congress = 8" 9.yearsi
  > nceleaving "Year since leaving Congress = 9" 10.yearsinceleaving "Year since leaving
  >  Congress = 10" 11.yearsinceleaving "Year since leaving Congress = 11" 12.yearsincel
  > eaving "Year since leaving Congress = 12" 1.switcher#2.yearsinceleaving "Switcher x
  > Year since leaving Congress = 2" 1.switcher#3.yearsinceleaving "Switcher x Year sinc
  > e leaving Congress = 3" 1.switcher#4.yearsinceleaving "Switcher x Year since leaving
  >  Congress = 4" 1.switcher#5.yearsinceleaving "Switcher x Year since leaving Congress
  >  = 5" 1.switcher#6.yearsinceleaving "Switcher x Year since leaving Congress = 6" 1.s
  > witcher#7.yearsinceleaving "Switcher x Year since leaving Congress = 7" 1.switcher#8
  > .yearsinceleaving "Switcher x Year since leaving Congress = 8" 1.switcher#9.yearsinc
  > eleaving "Switcher x Year since leaving Congress = 9" 1.switcher#10.yearsinceleaving
  >  "Switcher x Year since leaving Congress = 10" 1.switcher#11.yearsinceleaving "Switc
  > her x Year since leaving Congress = 11" 1.switcher#12.yearsinceleaving "Switcher x Y
  > ear since leaving Congress = 12" daysworked "Days worked" experience_imp "Hill exper
  > ience" experience_sq "Hill experience sq." committeestaff2_everyear "Committee staff
  > " personalstaff_everyear "Personal staff" senate_everyear "Senate staff" majority_ev
  > eryear "Majority party staff" minority_everyear "Minority party staff" dcoffice_ever
  > year "DC office staff" leaderofficestaff_everyear "Leadership office staff" log_max_
  > adjannual_pay "Log max pay in Congress") ///
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED6.csv not found)
  (output written to TABLED6.csv)

1293
1294
  end of do-file

1295do TABLEE7.do

1296
```

```
1297/*****************************************************************************\
  > |    Title:              TABLED7: Regression Models for Becoming a Lobbyist -      |
  >                                          Switching staffers only
  >                                         |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
1298
1299
1300clear all

1301set more off, permanently
  (set more preference recorded)

1302numlabel, add
  (dataset has no value labels)

1303set maxvar 32000


1304
1305use congress_yearly.dta, clear

1306xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1307
1308* switchers only: define a subset who switch at least once during their time in Cong
  > ress
1309
1310bysort stafferid: egen switchsum = sum(switchtouncovered_treatment)

1311gen switcher = switchsum >=1

1312
1313*****************************************
1314** 2008-2016
1315
1316xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==1 &  switche
  > r==1, fe nonest vce(cluster stafferid)

  Fixed-effects (within) regression               Number of obs      =      5086
  Group variable: stafferid                       Number of groups   =       928

  R-sq:  within  = 0.0261                         Obs per group: min =         1
         between = 0.0130                                        avg =       5.5
         overall = 0.0087                                        max =         9

                                                  F(9,927)           =      7.04
  corr(u_i, Xb)  = -0.0931                        Prob > F           =    0.0000

                                               (Std. Err. adjusted for 928 clusters in sta
  > fferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment |   .0289265   .0087502     3.31   0.001     .0117541
  > .046099
             |
        year |
        2009 |   .0114417   .0050695     2.26   0.024     .0014926    .
  > 0213908
        2010 |   .0160122   .0058069     2.76   0.006     .0046161    .
  > 0274083
```

```
                    2011 |   .0265926   .0070405     3.78   0.000     .0127755    .
> 0404097
                    2012 |   .0246232   .0069398     3.55   0.000     .0110038    .
> 0382427
                    2013 |   .0388446   .0082473     4.71   0.000     .0226591    .
> 0550301
                    2014 |   .0417199   .0081896     5.09   0.000     .0256475    .
> 0577923
                    2015 |   .0507125   .0094462     5.37   0.000      .032174
> .069251
                    2016 |   .0680724   .0114414     5.95   0.000     .0456184    .
> 0905264
                         |
                   _cons |  -.0091312   .0046543    -1.96   0.050    -.0182655    3
> .03e-06
-------------------------+------------------------------------------------------
  _______

                 sigma_u |  .14534826
                 sigma_e |  .13274642
                     rho |  .54522206   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
  _______

1317summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |      5,086    .0224145    .1480418         0          1

1318estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02241447

1319est store model1

1320estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1321
1322xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 & switch
  > er==1, fe nonest cluster(stafferid)

  Fixed-effects (within) regression               Number of obs      =      5086
  Group variable: stafferid                       Number of groups   =       928

  R-sq:  within  = 0.0887                         Obs per group: min =         1
         between = 0.0550                                        avg =       5.5
         overall = 0.0684                                        max =         9

                                                  F(17,927)          =      5.43
  corr(u_i, Xb)  = -0.0327                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 928 clusters in sta
  > fferid)
-------------------------------------------------------------------------------
  _______

                             |               Robust
          lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-----------------------------+-------------------------------------------------
  _______

switchtouncovered_treatment |   .0123501    .008028     1.54   0.124     -.003405    .
> 0281053
                daysworked |  -.0003843   .0000456    -8.43   0.000    -.0004737   -.
> 0002948
   committeestaff_everyear |  -.0061029   .0092302    -0.66   0.509    -.0242173    .
> 0120115
```

```
     personalstaff_everyear |   .0161949   .0196501     0.82   0.410     -.022369    .
> 0547588
        senate_everyear |  -.0125199   .0130919    -0.96   0.339    -.0382132    .
> 0131734
       majority_everyear |  -.0129257   .0152878    -0.85   0.398    -.0429284    .
> 0170771
       minority_everyear |  -.0108886   .0160865    -0.68   0.499    -.0424589    .
> 0206816
       dcoffice_everyear |   -.008969   .0097343    -0.92   0.357    -.0280729    .
> 0101349
 leaderofficestaff_everyear |  -.0099846   .0148384    -0.67   0.501    -.0391054    .
> 0191361
                        |
                   year |
                   2009 |  -.0001033   .0048302    -0.02   0.983    -.0095827    .
> 0093762
                   2010 |   .0044341    .005624     0.79   0.431    -.0066031    .
> 0154713
                   2011 |   .0070701   .0064284     1.10   0.272    -.0055458
> .019686
                   2012 |   .0132046   .0064369     2.05   0.041      .000572    .
> 0258372
                   2013 |   .0130272   .0074134     1.76   0.079    -.0015217    .
> 0275761
                   2014 |   .0221682   .0074689     2.97   0.003     .0075102    .
> 0368262
                   2015 |   .0235683   .0085134     2.77   0.006     .0068604    .
> 0402761
                   2016 |   .0332047   .0106222     3.13   0.002     .0123583
> .054051
                        |
                  _cons |   .1442912   .0178513     8.08   0.000     .1092575    .
> 1793248
------------------------+------------------------------------------------------------
> -------

                sigma_u |   .1391626
                sigma_e |  .12853713
                    rho |  .53962932   (fraction of variance due to u_i)
------------------------+------------------------------------------------------------
> -------
```

1323 `summarize lobbydirectafter if e(sample)==1`

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	5,086	.0224145	.1480418	0	1

1324 `estadd scalar ymean = r(mean)`

```
  added scalar:
              e(ymean) =  .02241447
```

1325 `est store model2`

1326 `estadd local fixed "Yes" , replace`

```
  added macro:
              e(fixed) : "Yes"
```

1327

```
1328xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 &  switc
  > her==1, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =      4440
  Group variable: stafferid                       Number of groups   =       790

  R-sq:  within  = 0.0953                         Obs per group: min =         1
         between = 0.0459                                        avg =       5.6
         overall = 0.0572                                        max =         9

                                                  F(18,789)          =      4.66
  corr(u_i, Xb)  = -0.1730                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 790 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------
               |               Robust
  lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  -------------+----------------------------------------------------------------
  switchtouncovered_treatment |   .0158562     .00874     1.81   0.070    -.0013003    .
  > 0330126
                daysworked |  -.0004054   .0000511    -7.94   0.000    -.0005057   -.
  > 0003051
            experience_imp |   .0070734   .0026475     2.67   0.008     .0018765    .
  > 0122703
             experience_sq |  -.0001008   .0000764    -1.32   0.187    -.0002508    .
  > 0000491
    committeestaff_everyear |  -.0050579   .0099032    -0.51   0.610    -.0244976    .
  > 0143818
     personalstaff_everyear |   .0041104   .0199795     0.21   0.837    -.0351089    .
  > 0433296
           senate_everyear |  -.0166046    .013949    -1.19   0.234    -.0439861    .
  > 0107768
         majority_everyear |  -.0111861   .0156427    -0.72   0.475    -.0418924    .
  > 0195201
         minority_everyear |  -.0089003   .0163809    -0.54   0.587    -.0410556
  > .023255
         dcoffice_everyear |  -.0029764   .0102442    -0.29   0.771    -.0230856    .
  > 0171328
 leaderofficestaff_everyear |  -.0009204   .0140907    -0.07   0.948    -.0285801    .
  > 0267394
                           |
                      year |
                      2009 |  -.0055458   .0050027    -1.11   0.268    -.0153659    .
  > 0042743
                      2010 |  -.0068063   .0063038    -1.08   0.281    -.0191805    .
  > 0055679
                      2011 |  -.0094979   .0076045    -1.25   0.212    -.0244254    .
  > 0054295
                      2012 |  -.0070749   .0083191    -0.85   0.395     -.023405    .
  > 0092553
                      2013 |  -.0089366   .0102544    -0.87   0.384    -.0290658    .
  > 0111926
                      2014 |  -.0045977   .0109796    -0.42   0.676    -.0261505
  > .016955
                      2015 |  -.0091529   .0127999    -0.72   0.475    -.0342788
  > .015973
                      2016 |          0  (omitted)
                           |
                     _cons |   .1123422   .0246172     4.56   0.000     .0640193    .
  > 1606652
  -------------+----------------------------------------------------------------
               |
             sigma_u |  .13034096
             sigma_e |  .13064398
```

```
                          rho |  .49883895   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

1329summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |      4,440    .0225225    .1483921          0          1

1330estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02252252

1331est store model3

1332estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1333
1334
1335*****************************************
1336** 2007-2016
1337
1338xtreg lobbydirectafter switchtouncovered_treatment i.year if (posttreat==1 | year==2
  > 007) &  switcher==1, fe nonest vce(cluster stafferid)

  Fixed-effects (within) regression               Number of obs      =      5815
  Group variable: stafferid                       Number of groups   =      1011

  R-sq:  within  = 0.0238                         Obs per group: min =         1
         between = 0.0183                                        avg =       5.8
         overall = 0.0076                                        max =        10

                                                  F(10,1010)         =      5.72
  corr(u_i, Xb)  = -0.0893                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 1,011 clusters in sta
  > fferid)
------------------------------------------------------------------------------
  _______
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
-------------+----------------------------------------------------------------
  _______
switchtouncovered_treatment |   .0316451   .0083655     3.78   0.000     .0152294    .
  > 0480607
             |
                        year |
                        2008 |   .0130627   .0061341     2.13   0.033     .0010257    .
  > 0250998
                        2009 |   .0165561   .0063483     2.61   0.009     .0040988    .
  > 0290134
                        2010 |   .0189382   .0064783     2.92   0.004     .0062258    .
  > 0316506
                        2011 |   .0282112   .0079413     3.55   0.000      .012628    .
  > 0437945
                        2012 |   .0257942   .0073514     3.51   0.000     .0113685
  >  .04022
                        2013 |   .0389439   .0090668     4.30   0.000      .021152    .
  > 0567358
                        2014 |    .040781    .008846     4.61   0.000     .0234223    .
  > 0581397
                        2015 |   .0486956   .0095358     5.11   0.000     .0299832    .
  > 0674079
                        2016 |   .0669642   .0119897     5.59   0.000     .0434366    .
  > 0904919
             |
```

```
                     _cons |  -.0078872   .0050992    -1.55   0.122    -.0178933
> .002119
------------------------------+------------------------------------------------
  _______

                   sigma_u |  .15759561
                   sigma_e |  .13354127
                       rho |   .5820619   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _______

1339summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |      5,815    .0232158    .1506013          0          1

1340estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02321582

1341est store model1b

1342estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1343
1344xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if (posttreat==1 | year=
  > =2007)  & switcher==1, fe nonest cluster(stafferid)

Fixed-effects (within) regression               Number of obs      =      5815
Group variable: stafferid                       Number of groups   =      1011

R-sq:  within  = 0.0878                         Obs per group: min =         1
       between = 0.0517                                        avg =       5.8
       overall = 0.0715                                        max =        10

                                                F(18,1010)         =      5.66
corr(u_i, Xb)  = -0.0249                        Prob > F           =    0.0000

                                              (Std. Err. adjusted for 1,011 clusters in sta
> fferid)
------------------------------+------------------------------------------------
  _______

                              |               Robust
           lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
> terval]
------------------------------+------------------------------------------------
  _______

switchtouncovered_treatment |    .014217     .00757     1.88   0.061    -.0006377    .
> 0290718
                 daysworked |  -.0003948   .0000428    -9.23   0.000    -.0004787   -.
> 0003109
    committeestaff_everyear |  -.0072655   .0088316    -0.82   0.411     -.024596
> .010065
     personalstaff_everyear |   .0209246   .0181953     1.15   0.250    -.0147804    .
> 0566295
           senate_everyear |  -.0040813   .0127257    -0.32   0.748    -.0290531    .
> 0208906
         majority_everyear |  -.0103268   .0139856    -0.74   0.460     -.037771    .
> 0171174
         minority_everyear |  -.0123728   .0147717    -0.84   0.402    -.0413596
> .016614
         dcoffice_everyear |   -.007896   .0089639    -0.88   0.379    -.0254861
> .009694
 leaderofficestaff_everyear |  -.0101076   .0131054    -0.77   0.441    -.0358246    .
> 0156094
                           |
```

```
                year |
                2008 |   .0119326   .0057647     2.07   0.039     .0006204    .
> 0232449
                2009 |   .0055863    .005968     0.94   0.349    -.0061247    .
> 0172974
                2010 |   .0095902   .0062784     1.53   0.127    -.0027301    .
> 0219105
                2011 |   .0111818   .0073577     1.52   0.129    -.0032564    .
> 0256199
                2012 |   .0175116   .0068556     2.55   0.011     .0040587    .
> 0309645
                2013 |    .015854    .008272     1.92   0.056    -.0003782    .
> 0320863
                2014 |   .0242744   .0081316     2.99   0.003     .0083176    .
> 0402313
                2015 |   .0242446   .0087442     2.77   0.006     .0070858    .
> 0414035
                2016 |   .0348291   .0110741     3.15   0.002     .0130981    .
> 0565601
                     |
               _cons |   .1386596   .0161796     8.57   0.000     .1069101    .
> 1704092
-------------------------------------------------------------------------------
------

             sigma_u |    .151046
             sigma_e |  .12919855
                 rho |  .57748759   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
------

1345summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |      5,815    .0232158    .1506013          0          1

1346estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02321582

1347est store model2b

1348estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1349
1350xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if (posttreat==1 | year=
  > =2007)  &  switcher==1, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =      5014
  Group variable: stafferid                       Number of groups   =       835

  R-sq:  within  = 0.0924                         Obs per group: min =         1
         between = 0.0543                                        avg =       6.0
         overall = 0.0651                                        max =        10

                                                  F(19,834)          =      4.74
  corr(u_i, Xb)  = -0.1276                        Prob > F           =    0.0000
```

(Std. Err. adjusted for **835** clusters in sta
> fferid)

| lobbydirectafter | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| switchtouncovered_treatment | **.0155808** | **.0081941** | **1.90** | **0.058** | **-.0005027** | **.**
> **0316644** |
| daysworked | **-.0004132** | **.0000482** | **-8.58** | **0.000** | **-.0005077** | **-.**
> **0003187** |
| experience_imp | **.0069232** | **.0022357** | **3.10** | **0.002** | **.0025349** | **.**
> **0113114** |
| experience_sq | **-.0001197** | **.000067** | **-1.79** | **0.074** | **-.0002511** | **.**
> **0000118** |
| committeestaff_everyear | **-.0078963** | **.0095971** | **-0.82** | **0.411** | **-.0267336** | **.**
> **0109411** |
| personalstaff_everyear | **.0065694** | **.018569** | **0.35** | **0.724** | **-.029878** | **.**
> **0430168** |
| senate_everyear | **-.003396** | **.013095** | **-0.26** | **0.795** | **-.029099** | **.**
> **0223069** |
| majority_everyear | **-.0090689** | **.0146114** | **-0.62** | **0.535** | **-.0377485** | **.**
> **0196106** |
| minority_everyear | **-.0115182** | **.0153027** | **-0.75** | **0.452** | **-.0415545** | **.**
> **0185182** |
| dcoffice_everyear | **.0000387** | **.0094729** | **0.00** | **0.997** | **-.0185549** | **.**
> **0186323** |
| leaderofficestaff_everyear | **-.0045655** | **.0128202** | **-0.36** | **0.722** | **-.0297293** | **.**
> **0205982** |
| year | | | | | | |
| 2008 | **.0043943** | **.0059531** | **0.74** | **0.461** | **-.0072904** | **.**
> **0160791** |
| 2009 | **-.0054726** | **.0063517** | **-0.86** | **0.389** | **-.0179398** | **.**
> **0069947** |
| 2010 | **-.0066521** | **.0070274** | **-0.95** | **0.344** | **-.0204455** | **.**
> **0071414** |
| 2011 | **-.0094334** | **.0085428** | **-1.10** | **0.270** | **-.0262013** | **.**
> **0073345** |
| 2012 | **-.006556** | **.0088089** | **-0.74** | **0.457** | **-.0238462** | **.**
> **0107342** |
| 2013 | **-.0090833** | **.0108495** | **-0.84** | **0.403** | **-.0303789** | **.**
> **0122123** |
| 2014 | **-.0054596** | **.0113029** | **-0.48** | **0.629** | **-.027645** | **.**
> **0167258** |
| 2015 | **-.0107423** | **.0129045** | **-0.83** | **0.405** | **-.0360715** | **.**
> **0145868** |
| 2016 | **0** | (omitted) | | | | |
| _cons | **.1138427** | **.0208923** | **5.45** | **0.000** | **.0728351** | **.**
> **1548504** |
| sigma_u | **.12743033** | | | | | |
| sigma_e | **.13071563** | | | | | |
| rho | **.48727554** | (fraction of variance due to u_i) | | | | |

```
1351summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**5,014**	**.0223375**	**.1477933**	**0**	**1**

```
1352estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .02233746

1353est store model3b

1354estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1355
1356
1357esttab model1 model2 model3 model1b model2b model3b using "TABLED7.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2008-2016" "2007-2016", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment "Switch to uncovered" daysworked "Day
  > s worked" experience_imp "Hill experience" experience_sq "Hill experience sq." commi
  > tteestaff2_everyear "Committee staff" personalstaff_everyear "Personal staff" senate
  > _everyear "Senate staff" majority_everyear "Majority party staff" minority_everyear
  > "Minority party staff" dcoffice_everyear "DC office staff" leaderofficestaff_everyea
  > r "Leadership office staff") //
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED7.csv not found)
  (output written to TABLED7.csv)

1358
1359
1360
1361
  end of do-file

1362do TABLEE8.do

1363
1364/*****************************************************************************\
  > |    Title:              TABLED8: Event History Analysis
  >                    |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
1365
1366
1367clear all

1368set more off, permanently
  (set more preference recorded)
```

```
1369numlabel, add
  (dataset has no value labels)

1370set maxvar 32000


1371
1372use congress_yearly.dta, clear

1373xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1374
1375*******************************************
1376** 2008-2016
1377
1378xtreg lobbydirectafter switchtouncovered_treatment daysworked  committeestaff_everye
  > ar personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.experience_imp i.year if post
  > treat==1, fe nonest cluster(stafferid)
  note: 51.experience_imp omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    128067
  Group variable: stafferid                       Number of groups   =     34438

  R-sq:  within  = 0.0601                         Obs per group: min =         1
         between = 0.0128                                        avg =       3.7
         overall = 0.0355                                        max =         9

                                                  F(57,34437)        =         .
  corr(u_i, Xb)  = -0.1049                        Prob > F           =         .

                                       (Std. Err. adjusted for 34,438 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------------
    _______
                                |               Robust
            lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------------
    _______
  switchtouncovered_treatment |   .0219666   .0092427     2.38   0.017     .0038505    .
  > 0400827
                   daysworked |  -.0002768   8.67e-06   -31.93   0.000    -.0002938   -.
  > 0002598
      committeestaff_everyear |  -.0052297   .0029033    -1.80   0.072    -.0109202    .
  > 0004608
       personalstaff_everyear |  -.0134495   .0044793    -3.00   0.003    -.0222291   -.
  > 0046699
             senate_everyear |  -.0015091     .00284    -0.53   0.595    -.0070756    .
  > 0040574
           majority_everyear |  -.0018205   .0030929    -0.59   0.556    -.0078826    .
  > 0042416
           minority_everyear |  -.0080961   .0031444    -2.57   0.010    -.0142592    -
  > .001933
           dcoffice_everyear |   .0077256   .0016101     4.80   0.000     .0045698    .
  > 0108815
   leaderofficestaff_everyear |   .0000778   .0046781     0.02   0.987    -.0090915    .
  > 0092471
                             |
              experience_imp |
                          2  |  -.0054616   .0012828    -4.26   0.000    -.0079759   -.
  > 0029473
                          3  |  -.0039922   .0021299    -1.87   0.061    -.0081669    .
  > 0001825
                          4  |  -.0031168   .0030258    -1.03   0.303    -.0090475    .
  > 0028139
                          5  |   .0030969   .0039652     0.78   0.435     -.004675    .
  > 0108688
                          6  |   .0058665   .0048467     1.21   0.226    -.0036332    .
```

> 0153663
> 0202297
> .02817
> 0302369
> 0369374
> 0469564
> 0452796
> 0475077
> .058056
> 0612102
> 0572475
> 0657904
> 0713953
> 0784607
> 0846502
> 0831281
> 0823198
> 0964185
> 0911134
> 0958472
> 1083544
> .10702
> 1115611
> 1172257
> 1291632
> 1123766
> 1215596
> 1484671
> 1124792
> 1197236
> 1414308
> 1259089
> 1325894
> 1072114
> 0940517
> 2944425

7	.008959	.0057503	1.56	0.119	-.0023118	.
8	.0150094	.0067145	2.24	0.025	.0018487	
9	.0153491	.0075957	2.02	0.043	.0004613	.
10	.0202389	.0085195	2.38	0.018	.0035404	.
11	.0283141	.0095112	2.98	0.003	.0096719	.
12	.0250063	.0103434	2.42	0.016	.004733	.
13	.0254637	.0112468	2.26	0.024	.0034197	.
14	.033973	.0122871	2.76	0.006	.0098899	
15	.0354381	.0131488	2.70	0.007	.009666	.
16	.0298662	.0139698	2.14	0.033	.002485	.
17	.0362011	.0150963	2.40	0.016	.0066118	.
18	.0400713	.0159814	2.51	0.012	.0087473	.
19	.0451045	.0170182	2.65	0.008	.0117483	.
20	.0492851	.0180431	2.73	0.006	.01392	.
21	.0462719	.0188039	2.46	0.014	.0094157	.
22	.0440031	.019549	2.25	0.024	.0056865	.
23	.0558358	.0207051	2.70	0.007	.0152532	.
24	.0486688	.021655	2.25	0.025	.0062243	.
25	.0521771	.0222803	2.34	0.019	.008507	.
26	.0619317	.0236847	2.61	0.009	.0155089	.
27	.0591375	.0244294	2.42	0.015	.011255	
28	.0613284	.0256284	2.39	0.017	.0110958	.
29	.0655045	.0263879	2.48	0.013	.0137833	.
30	.0751255	.0275698	2.72	0.006	.0210877	.
31	.0578777	.0278051	2.08	0.037	.0033788	.
32	.0661759	.0282565	2.34	0.019	.0107923	.
33	.0869891	.0313658	2.77	0.006	.0255111	.
34	.0548584	.0293979	1.87	0.062	-.0027625	.
35	.0605275	.0302016	2.00	0.045	.0013315	.
36	.0739649	.0344208	2.15	0.032	.0064989	.
37	.052127	.0376432	1.38	0.166	-.0216548	.
38	.0653842	.0342878	1.91	0.057	-.001821	.
39	.0586853	.0247578	2.37	0.018	.0101591	.
40	.0407017	.0272189	1.50	0.135	-.0126483	.
41	.1466345	.075411	1.94	0.052	-.0011736	.
42	.0548562	.0101295	5.42	0.000	.035002	.

> 0747104
> 0916453
> 0904291
> 0872604
> 0908264
> 0592224
> 0543487
> 0502909
> 0425016
> 0060306
> .010234
> 0116183
> 0099384
> 0112221
> 0144698
> 0112055
> 0172396
> 1109425

43	.0766314	.00766	10.00	0.000	.0616175	.
44	.0768033	.0069518	11.05	0.000	.0631774	.
45	.0752576	.0061238	12.29	0.000	.0632549	.
46	.0802064	.0054183	14.80	0.000	.0695864	.
47	.0509293	.0042311	12.04	0.000	.0426363	.
48	.0473838	.0035534	13.33	0.000	.0404189	.
49	.0445759	.0029157	15.29	0.000	.038861	.
50	.0385898	.0019958	19.34	0.000	.034678	.
51	0	(omitted)				
year						
2009	.0032687	.0014091	2.32	0.020	.0005068	.
2010	.0060766	.0021211	2.86	0.004	.0019192	
2011	.0057871	.002975	1.95	0.052	-.000044	.
2012	.0025787	.0037549	0.69	0.492	-.004781	.
2013	.00213	.0046387	0.46	0.646	-.006962	.
2014	.0036757	.0055071	0.67	0.504	-.0071184	.
2015	-.0012731	.0063665	-0.20	0.842	-.0137517	.
2016	.0028143	.0073597	0.38	0.702	-.011611	.
_cons	.1024701	.0043226	23.71	0.000	.0939977	.

sigma_u	.11016184	
sigma_e	.10668456	
rho	.51603155	(fraction of variance due to u_i)

1379 summarize lobbydirectafter if e(sample)==1

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	128,067	.0146017	.1199526	0	1

1380 estadd scalar ymean = r(mean)

added scalar:
e(ymean) = .01460173

1381 est store model1

```
1382estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1383
1384*****************************************
1385** 2007-2016
1386
1387xtreg lobbydirectafter switchtouncovered_treatment daysworked  committeestaff_everye
  > ar personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.experience_imp i.year if post
  > treat==1 | year==2007, fe nonest cluster(stafferid)
  note: 51.experience_imp omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    140194
  Group variable: stafferid                       Number of groups   =     36921

  R-sq:  within  = 0.0626                         Obs per group: min =         1
         between = 0.0149                                        avg =       3.8
         overall = 0.0393                                        max =        10

                                                  F(61,36920)        =         .
  corr(u_i, Xb)  = -0.0865                        Prob > F           =         .

                                        (Std. Err. adjusted for 36,921 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------
    _______
               |               Robust
  lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------
    _______
  switchtouncovered_treatment |    .020898   .0087106     2.40   0.016     .0038249    .
  > 0379711
                  daysworked |  -.0002917   8.57e-06   -34.05   0.000    -.0003085   -.
  > 0002749
     committeestaff_everyear |  -.0074912   .0027622    -2.71   0.007    -.0129051   -.
  > 0020773
      personalstaff_everyear |  -.0159745   .0042175    -3.79   0.000    -.0242409   -.
  > 0077081
           senate_everyear |   -.000935   .0027884    -0.34   0.737    -.0064005    .
  > 0045304
         majority_everyear |  -.0009715    .002934    -0.33   0.741    -.0067223    .
  > 0047792
         minority_everyear |  -.0078448   .0029769    -2.64   0.008    -.0136796
  > -.00201
         dcoffice_everyear |   .0078897   .0015401     5.12   0.000      .004871    .
  > 0109083
  leaderofficestaff_everyear |   -.002717   .0043125    -0.63   0.529    -.0111696    .
  > 0057356
                |
            experience_imp |
                         2 |  -.0053532   .0011004    -4.86   0.000    -.0075101   -.
  > 0031963
                         3 |  -.0036061   .0017194    -2.10   0.036    -.0069763    -
  > .000236
                         4 |  -.0021924   .0023765    -0.92   0.356    -.0068503    .
  > 0024655
                         5 |   .0039497   .0030842     1.28   0.200    -.0020954    .
  > 0099947
                         6 |   .0069943   .0037403     1.87   0.061    -.0003367    .
  > 0143253
                         7 |   .0094165   .0043995     2.14   0.032     .0007934    .
  > 0180395
                         8 |    .014553   .0051244     2.84   0.005      .004509    .
  > 0245969
                         9 |    .015194   .0057873     2.63   0.009     .0038507    .
  > 0265373
                        10 |   .0200703   .0064745     3.10   0.002     .0073802    .
  > 0327604
```

11	.0271056	.0072589	3.73	0.000	.0128779	.
12	.0226407	.0078233	2.89	0.004	.0073068	.
13	.0227355	.0085149	2.67	0.008	.0060461	.
14	.0310944	.009319	3.34	0.001	.0128289	.
15	.0316453	.0099555	3.18	0.001	.0121323	.
16	.0240643	.010536	2.28	0.022	.0034133	.
17	.0319895	.0114867	2.78	0.005	.0094752	.
18	.0335884	.0121224	2.77	0.006	.0098282	.
19	.0382498	.0128763	2.97	0.003	.013012	.
20	.0431201	.0136332	3.16	0.002	.0163987	.
21	.0375149	.0142536	2.63	0.008	.0095775	.
22	.0388042	.0146098	2.66	0.008	.0101685	.
23	.0461505	.0157555	2.93	0.003	.0152692	.
24	.0387872	.0164736	2.35	0.019	.0064985	.
25	.045219	.016993	2.66	0.008	.0119123	.
26	.0535374	.0180874	2.96	0.003	.0180856	.
27	.0498289	.0185279	2.69	0.007	.0135138	
28	.0541895	.0195484	2.77	0.006	.0158741	.
29	.0575576	.0200004	2.88	0.004	.0183563	.
30	.0606655	.0210027	2.89	0.004	.0194996	.
31	.0488596	.0205239	2.38	0.017	.0086322	
32	.0566022	.021504	2.63	0.008	.0144537	.
33	.0709719	.0240562	2.95	0.003	.0238211	.
34	.0444771	.0214092	2.08	0.038	.0025145	.
35	.048072	.0219586	2.19	0.029	.0050326	.
36	.0554237	.0292091	1.90	0.058	-.0018269	.
37	.0400786	.0296503	1.35	0.176	-.0180368	
38	.0594461	.0235178	2.53	0.011	.0133504	.
39	.0451897	.0183791	2.46	0.014	.0091661	.
40	.0274241	.0250792	1.09	0.274	-.0217318	
41	.1319038	.0789552	1.67	0.095	-.0228506	.
42	.0395727	.0115668	3.42	0.001	.0169014	
43	.0627391	.0057527	10.91	0.000	.0514637	.
44	.0633314	.0053042	11.94	0.000	.0529349	.
45	.061479	.0046947	13.10	0.000	.0522772	.
46	.0627425	.0051731	12.13	0.000	.0526032	.

> 0413333
> 0379746
> 0394249
> 0493599
> 0511583
> 0447152
> 0545037
> 0573485
> 0634877
> 0698415
> 0654523
> 0674399
> 0770318
> 0710758
> 0785258
> 0889892
> .086144
> 0925049
> 0967589
> 1018314
> .089087
> 0987507
> 1181228
> 0864397
> 0911114
> 1126743
> .098194
> 1055417
> 0812134
> .07658
> 2866582
> .062244
> 0740146
> 0737279
> 0706807
> 0728819

```
                      47 |   .0401798   .0046929     8.56   0.000     .0309815    .
> 0493781
                      48 |   .0486161   .0030209    16.09   0.000     .0426951    .
> 0545371
                      49 |    .046537     .00262    17.76   0.000     .0414018    .
> 0516723
                      50 |    .040945   .0018985    21.57   0.000      .037224    .
> 0446661
                      51 |          0  (omitted)
                         |
                    year |
                    2008 |   .0071378   .0014859     4.80   0.000     .0042253    .
> 0100503
                    2009 |   .0062681   .0019304     3.25   0.001     .0024845    .
> 0100517
                    2010 |   .0083472   .0024268     3.44   0.001     .0035906    .
> 0131038
                    2011 |    .007066   .0030478     2.32   0.020     .0010922    .
> 0130397
                    2012 |   .0039653     .00357     1.11   0.267     -.003032    .
> 0109626
                    2013 |   .0030813   .0042214     0.73   0.465    -.0051928    .
> 0113555
                    2014 |   .0049338   .0048448     1.02   0.309    -.0045622    .
> 0144298
                    2015 |   -.000259   .0054529    -0.05   0.962    -.0109469    .
> 0104289
                    2016 |    .003618   .0062472     0.58   0.563    -.0086267    .
> 0158627
                         |
                   _cons |    .108499   .0041717    26.01   0.000     .1003224    .
> 1166756
------------------------+----------------------------------------------------------
  -------
                 sigma_u |  .11727016
                 sigma_e |  .10804445
                     rho |  .54087735   (fraction of variance due to u_i)
------------------------+----------------------------------------------------------
  -------
```

```
1388summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	140,194	.0153716	.1230259	0	1

```
1389estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01537156

1390est store model2

1391estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1392
1393
```

```
1394
1395esttab model* using "TABLED8.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2001-2007" "2001-2006", pattern(1 1)) ///
  >         coeflabels(switchtouncovered_treatment "Switch to uncovered" daysworked "Day
  > s worked" experience_imp "Hill experience" experience_sq "Hill experience sq." commi
  > tteestaff2_everyear "Committee staff" personalstaff_everyear "Personal staff" senate
  > _everyear "Senate staff" majority_everyear "Majority party staff" minority_everyear
  > "Minority party staff" dcoffice_everyear "DC office staff" leaderofficestaff_everyea
  > r "Leadership office staff") ///
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year" "Duration FE = *.ex
  > perience_imp") nonotes noconstant
  (note: file TABLED8.csv not found)
  (output written to TABLED8.csv)

1396
  end of do-file

1397do TABLEE9.do

1398
1399/*******************************************************************************\
  > |    Title:              TABLED9: Placebo Regressions for Becoming Lobbyist
  >    |
  > |    Date:               July 2023
  >       |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*******************************************************************************/
1400
1401
1402clear all

1403set more off, permanently
  (set more preference recorded)

1404numlabel, add
  (dataset has no value labels)

1405set maxvar 32000


1406
1407use congress_yearly.dta, clear

1408xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1409
1410
1411xtreg lobbydirectafter switchtouncovered_treatment i.year if posttreat==0 & year!=20
  > 07, fe nonest cluster(stafferid)

  Fixed-effects (within) regression               Number of obs      =     80797
  Group variable: stafferid                       Number of groups   =     29056

  R-sq:  within  = 0.0155                         Obs per group: min =         1
         between = 0.0097                                        avg =       2.8
         overall = 0.0007                                        max =         5

                                                  F(5,29055)         =    141.33
  corr(u_i, Xb)  = -0.1290                        Prob > F           =    0.0000
```

(Std. Err. adjusted for **29,056** clusters in stafferid)

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]
switchtouncovered_treatment	**.0150918**	**.0136493**	**1.11**	**0.269**	**-.0116614** **.041845**
year					
2003	**.014363**	**.0010138**	**14.17**	**0.000**	**.0123758** **.0163502**
2004	**.0198267**	**.0011445**	**17.32**	**0.000**	**.0175834** **.02207**
2005	**.030144**	**.0013643**	**22.10**	**0.000**	**.02747** **.032818**
2006	**.0354531**	**.001451**	**24.43**	**0.000**	**.0326091** **.038297**
_cons	**-.0078647**	**.0007837**	**-10.04**	**0.000**	**-.0094008** **-.0063287**
sigma_u	**.10028044**				
sigma_e	**.09877262**				
rho	**.50757451**	(fraction of variance due to u_i)			

```
1412summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**80,797**	**.0120301**	**.109021**	**0**	**1**

```
1413estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01203015

1414est store model1

1415estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1416
1417xtreg lobbydirectafter switchtouncovered_treatment daysworked committeestaff_everyea
  > r personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==0 & year!=
  > 2007, fe nonest cluster(stafferid)

  Fixed-effects (within) regression               Number of obs      =     80797
  Group variable: stafferid                       Number of groups   =     29056

  R-sq:  within  = 0.0666                         Obs per group: min =         1
         between = 0.0069                                        avg =       2.8
         overall = 0.0351                                        max =         5

                                                  F(13,29055)        =     59.62
  corr(u_i, Xb)  = -0.1028                        Prob > F           =    0.0000
```

(Std. Err. adjusted for **29,056** clusters in sta
> fferid)

| lobbydirectafter | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. In
> terval] |
|---|---|---|---|---|---|
| switchtouncovered_treatment | **.0097489** | **.0130161** | **0.75** | **0.454** | **-.0157632**
> **.035261** |
| daysworked | **-.0002856** | **.000012** | **-23.75** | **0.000** | **-.0003092** | **-
> .000262** |
| committeestaff_everyear | **-.0038764** | **.0037562** | **-1.03** | **0.302** | **-.0112388**
> **.003486** |
| personalstaff_everyear | **-.0139295** | **.0058513** | **-2.38** | **0.017** | **-.0253983** | **-.
> 0024607** |
| senate_everyear | **.0010282** | **.0045893** | **0.22** | **0.823** | **-.0079671** | **.
> 0100235** |
| majority_everyear | **.0032641** | **.0046443** | **0.70** | **0.482** | **-.005839** | **.
> 0123672** |
| minority_everyear | **.0031634** | **.0046608** | **0.68** | **0.497** | **-.0059719** | **.
> 0122987** |
| dcoffice_everyear | **-.0067363** | **.0011675** | **-5.77** | **0.000** | **-.0090245** | **-
> .004448** |
| leaderofficestaff_everyear | **-.0052372** | **.0057366** | **-0.91** | **0.361** | **-.0164811** | **.
> 0060068** |
| year | | | | | |
| 2003 | **.0022232** | **.0009742** | **2.28** | **0.023** | **.0003136** | **.
> 0041327** |
| 2004 | **.0073427** | **.0009987** | **7.35** | **0.000** | **.0053852** | **.
> 0093001** |
| 2005 | **.0114094** | **.0010545** | **10.82** | **0.000** | **.0093425** | **.
> 0134762** |
| 2006 | **.0150489** | **.0010509** | **14.32** | **0.000** | **.012989** | **.
> 0171088** |
| _cons | **.1080493** | **.005639** | **19.16** | **0.000** | **.0969965**
> **.119102** |
| sigma_u | **.09968674** | | | | |
| sigma_e | **.09618333** | | | | |
| rho | **.51788063** | (fraction of variance due to u_i) | | | |

1418 summarize lobbydirectafter if e(sample)==1

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**80,797**	**.0120301**	**.109021**	**0**	**1**

1419 estadd scalar ymean = r(mean)

added scalar:
e(ymean) = **.01203015**

1420 est store model2

```
1421estadd local fixed "Yes" , replace

  added macro:
                e(fixed) : "Yes"

1422
1423
1424xtreg lobbydirectafter switchtouncovered_treatment daysworked experience_imp experie
  > nce_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_every
  > ear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==0 & year!=
  > 2007, fe nonest cluster(stafferid)
  note: 2006.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =     41776
  Group variable: stafferid                       Number of groups   =     16278

  R-sq:  within  = 0.1114                         Obs per group: min =         1
         between = 0.0208                                        avg =       2.6
         overall = 0.0372                                        max =         5

                                                  F(14,16277)        =     38.09
  corr(u_i, Xb)  = -0.4039                        Prob > F           =    0.0000

                                         (Std. Err. adjusted for 16,278 clusters in sta
  > fferid)
  ------------------------------------------------------------------------------------
    -------
                                |               Robust
            lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf. In
  > terval]
  ------------------------------------------------------------------------------------
    -------
  switchtouncovered_treatment |   .0393704   .0208678     1.89   0.059    -.0015328    .
  > 0802736
                  daysworked |  -.0004839   .0000243   -19.93   0.000    -.0005315   -.
  > 0004363
              experience_imp |   .0052359   .0007792     6.72   0.000     .0037086    .
  > 0067632
               experience_sq |   .0001666   .0000479     3.48   0.001     .0000727    .
  > 0002605
     committeestaff_everyear |   .0000294   .0051181     0.01   0.995    -.0100027    .
  > 0100616
      personalstaff_everyear |  -.0049384   .0079788    -0.62   0.536    -.0205778    .
  > 0107009
             senate_everyear |   .0030011    .006456     0.46   0.642    -.0096535    .
  > 0156556
           majority_everyear |   .0014163   .0068804     0.21   0.837      -.01207    .
  > 0149027
           minority_everyear |   .0022601   .0066413     0.34   0.734    -.0107575    .
  > 0152778
           dcoffice_everyear |  -.0071975   .0016608    -4.33   0.000    -.0104528   -.
  > 0039423
   leaderofficestaff_everyear |  -.0097781   .0083039    -1.18   0.239    -.0260546    .
  > 0064985
                             |
                        year |
                       2003  |   .0132377   .0018282     7.24   0.000     .0096543    .
  > 0168211
                       2004  |   .0109375   .0016228     6.74   0.000     .0077567    .
  > 0141183
                       2005  |   .0056949   .0016242     3.51   0.000     .0025113    .
  > 0088785
                       2006  |          0  (omitted)
                             |
                       _cons |   .1400453   .0094259    14.86   0.000     .1215695    .
  > 1585212
  ------------------------------------------------------------------------------------
    -------
                     sigma_u |   .1096963
                     sigma_e |   .1054058
                         rho |  .51993842   (fraction of variance due to u_i)
```

```
1425summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |     41,776     .014482     .119468          0          1

1426estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .014482

1427est store model3

1428estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1429
1430
1431esttab model* using "TABLED9.csv", replace ///
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2001-2007" "2001-2006", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment "Switch to uncovered" daysworked "Day
  > s worked" experience_imp "Hill experience" experience_sq "Hill experience sq." commi
  > tteestaff2_everyear "Committee staff" personalstaff_everyear "Personal staff" senate
  > _everyear "Senate staff" majority_everyear "Majority party staff" minority_everyear
  > "Minority party staff" dcoffice_everyear "DC office staff" leaderofficestaff_everyea
  > r "Leadership office staff") //
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED9.csv not found)
  (output written to TABLED9.csv)

1432
  end of do-file

1433do TABLEE10.do

1434
1435/*****************************************************************************\
  > |    Title:              TABLED10: Alternative Treatment Coding: Incorporate Days  |
  >                                                    Covered
  >                                                              |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                  |
  > \*****************************************************************************/
1436
1437
1438clear all

1439set more off, permanently
  (set more preference recorded)
```

```
1440numlabel, add
  (dataset has no value labels)

1441set maxvar 32000


1442
1443use congress_yearly.dta, clear

1444xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1445
1446*****************************************
1447** 2008-2016
1448
1449xtreg lobbydirectafter switchtouncovered_treatment60 i.year if posttreat==1, fe none
  > st vce(cluster stafferid)

  Fixed-effects (within) regression               Number of obs      =    143745
  Group variable: stafferid                       Number of groups   =     37744

  R-sq:  within  = 0.0183                         Obs per group: min =         1
         between = 0.0077                                        avg =       3.8
         overall = 0.0028                                        max =         9

                                                  F(9,37743)         =    128.19
  corr(u_i, Xb)  = -0.1259                        Prob > F           =    0.0000

                                               (Std. Err. adjusted for 37,744 clusters in s
  > tafferid)
------------------------------------------------------------------------------
  _________
             lobbydirectafter |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf.
  > Interval]
-------------------------------------------------------------------------------
  _________
switchtouncovered_treatment60 |   .0641926   .0062503    10.27   0.000     .0519419
  >   .0764433
                              |
                         year |
                         2009 |   .0115457   .0009899    11.66   0.000     .0096056
  >   .0134859
                         2010 |   .0167022   .0011033    15.14   0.000     .0145396
  >   .0188647
                         2011 |   .0270101   .0013264    20.36   0.000     .0244102
  >   .0296099
                         2012 |   .0232198   .0012161    19.09   0.000     .0208362
  >   .0256035
                         2013 |   .0321819   .0013742    23.42   0.000     .0294884
  >   .0348753
                         2014 |   .0335606   .0013528    24.81   0.000     .0309091
  >    .036212
                         2015 |   .0367148   .0013974    26.27   0.000     .0339759
  >   .0394537
                         2016 |   .0492426   .0017097    28.80   0.000     .0458914
  >   .0525937
                              |
                        _cons |  -.0120818   .0008584   -14.07   0.000    -.0137643
  > -.0103993
-------------------------------------------------------------------------------
  _________
                      sigma_u |  .11332824
                      sigma_e |  .10584811
                          rho |  .53408868   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _________
```

```
1450summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**143,745**	**.0140527**	**.1177085**	**0**	**1**

```
1451estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

1452est store model1

1453estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1454
1455xtreg lobbydirectafter switchtouncovered_treatment60 daysworked committeestaff_every
  > ear personalstaff_everyear senate_everyear majority_everyear minority_everyear dcoff
  > ice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe nonest cluster(st
  > afferid)

  Fixed-effects (within) regression               Number of obs      =    143745
  Group variable: stafferid                       Number of groups   =     37744

  R-sq:  within  = 0.0570                         Obs per group: min =         1
         between = 0.0072                                        avg =       3.8
         overall = 0.0362                                        max =         9

                                                  F(17,37743)        =     86.22
  corr(u_i, Xb)  = -0.0574                        Prob > F           =    0.0000

                                                 (Std. Err. adjusted for 37,744 clusters in s
  > tafferid)
```

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
switchtouncovered_treatment60	.036397	.0060176	6.05	0.000	.0246024	.0481915
daysworked	-.0002493	7.61e-06	-32.75	0.000	-.0002642	-.0002344
committeestaff_everyear	-.0056201	.0027972	-2.01	0.045	-.0111027	-.0001376
personalstaff_everyear	-.0106642	.0042803	-2.49	0.013	-.0190538	-.0022747
senate_everyear	-.0000945	.0027403	-0.03	0.972	-.0054655	.0052766
majority_everyear	-.0034235	.002991	-1.14	0.252	-.009286	.002439
minority_everyear	-.0108423	.0030592	-3.54	0.000	-.0168384	-.0048463
dcoffice_everyear	.0069162	.0014797	4.67	0.000	.0040161	.0098164
leaderofficestaff_everyear	-.0003344	.0046828	-0.07	0.943	-.0095128	.0088439
year						
2009	.0032782	.0009471	3.46	0.001	.0014219	.0051345
2010	.0089415	.0010495	8.52	0.000	.0068844	.0109986
2011	.0098619	.0011774	8.38	0.000	.0075542	.0121697
2012	.0107448	.0011042	9.73	0.000	.0085805	.0129092
2013	.0118708	.0011819	10.04	0.000	.0095542	

```
> .0141874
                    2014 |   .0164531   .0011481    14.33   0.000     .0142028
> .0187034
                    2015 |    .013991   .0011501    12.17   0.000     .0117368
> .0162452
                    2016 |   .0197304   .0015708    12.56   0.000     .0166516
> .0228092
                         |
                   _cons |   .0925634   .0036471    25.38   0.000     .0854149
> .0997118
------------------------------------------------------------------------------
  ________

                 sigma_u |  .11154229
                 sigma_e |  .10374723
                     rho |  .53615993   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  ________

1456summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

1457estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

1458est store model2

1459estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1460
1461xtreg lobbydirectafter switchtouncovered_treatment60 daysworked experience_imp exper
  > ience_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_eve
  > ryear minority_everyear dcoffice_everyear leaderofficestaff_everyear i.year if postt
  > reat==1, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    128067
  Group variable: stafferid                       Number of groups   =     34438

  R-sq:  within  = 0.0604                         Obs per group: min =         1
         between = 0.0165                                        avg =       3.7
         overall = 0.0356                                        max =         9

                                                  F(18,34437)        =     76.70
  corr(u_i, Xb)  = -0.1127                        Prob > F           =    0.0000

                                                 (Std. Err. adjusted for 34,438 clusters in s
  > tafferid)
------------------------------------------------------------------------------
  ________

                             |               Robust
           lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
  > Interval]
-----------------------------+------------------------------------------------
  ________

switchtouncovered_treatment60 |   .0404209   .0066884     6.04   0.000     .0273114
> .0535305
                  daysworked |  -.0002633   8.35e-06   -31.54   0.000    -.0002797
> -.000247
               experience_imp |   .0027542   .0003355     8.21   0.000     .0020965
> .0034118
                experience_sq |   6.45e-06    .000015     0.43   0.666    -.0000229
> .0000358
   committeestaff_everyear |  -.0057516    .002904    -1.98   0.048    -.0114434
> -.0000597
```

```
       personalstaff_everyear |  -.0136015   .0044804    -3.04   0.002    -.0223833
> -.0048197
          senate_everyear |  -.0009962   .0028374    -0.35   0.726    -.0065577
>  .0045652
        majority_everyear |  -.0019924   .0030899    -0.64   0.519    -.0080487
>  .0040639
        minority_everyear |  -.0086916   .0031433    -2.77   0.006    -.0148526
> -.0025307
        dcoffice_everyear |   .0077818   .0016008     4.86   0.000     .0046441
>  .0109194
  leaderofficestaff_everyear |  -.0005767   .0046786    -0.12   0.902    -.0097469
>  .0085934
                           |
                      year |
                      2009 |   .0018479   .0010399     1.78   0.076    -.0001903
>  .0038861
                      2010 |   .0049948    .001128     4.43   0.000      .002784
>  .0072057
                      2011 |   .0038265   .0013095     2.92   0.003     .0012598
>  .0063932
                      2012 |   .0013225   .0012419     1.06   0.287    -.0011117
>  .0037567
                      2013 |   .0002911    .001408     0.21   0.836    -.0024686
>  .0030507
                      2014 |   .0021857   .0014518     1.51   0.132    -.0006598
>  .0050313
                      2015 |  -.0036647   .0015131    -2.42   0.015    -.0066304
>  -.000699
                      2016 |          0  (omitted)
                           |
                     _cons |   .0899476   .0041606    21.62   0.000     .0817927
>  .0981024
-------------------------------------------------------------------------------
                   sigma_u |  .10977278
                   sigma_e |  .10663979
                       rho |  .51447392   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
```

```
1462summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	128,067	.0146017	.1199526	0	1

```
1463estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01460173

1464est store model3

1465estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1466
1467****************************************
```

```
1468** 2007-2016
1469
1470xtreg lobbydirectafter switchtouncovered_treatment60 i.year if posttreat==1 | year==
  > 2007, fe nonest cluster(stafferid)

  Fixed-effects (within) regression               Number of obs      =    159890
  Group variable: stafferid                       Number of groups   =     41264

  R-sq:  within  = 0.0170                         Obs per group: min =         1
         between = 0.0093                                        avg =       3.9
         overall = 0.0018                                        max =        10

                                                  F(10,41263)        =    105.29
  corr(u_i, Xb)  = -0.1313                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 41,264 clusters in s
  > tafferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
  > Interval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment60 |   .0663606   .0060205    11.02   0.000     .0545604
  >   .0781609
             |
                        year |
                        2008 |   .0119096   .0011631    10.24   0.000     .0096298
  >   .0141893
                        2009 |    .017105   .0012473    13.71   0.000     .0146603
  >   .0195496
                        2010 |   .0202452   .0012959    15.62   0.000     .0177052
  >   .0227852
                        2011 |    .029562   .0014834    19.93   0.000     .0266544
  >   .0324696
                        2012 |   .0249662   .0013689    18.24   0.000     .0222832
  >   .0276493
                        2013 |   .0336149   .0015224    22.08   0.000      .030631
  >   .0365987
                        2014 |   .0347041    .001481    23.43   0.000     .0318012
  >    .037607
                        2015 |    .037648   .0015202    24.77   0.000     .0346684
  >   .0406277
                        2016 |   .0500958   .0018141    27.61   0.000     .0465401
  >   .0536515
             |
                       _cons |  -.0116466    .001008   -11.55   0.000    -.0136224
  > -.0096709
------------------------------------------------------------------------------
             |
                     sigma_u |  .12463446
                     sigma_e |  .10731552
                         rho |  .57425273   (fraction of variance due to u_i)
------------------------------------------------------------------------------

1471summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937         0          1
```

```
1472estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1473est store model1b

1474estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1475
1476xtreg lobbydirectafter switchtouncovered_treatment60 daysworked committeestaff_every
  > ear personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe nonest cluster(stafferid)

  Fixed-effects (within) regression               Number of obs      =    159890
  Group variable: stafferid                       Number of groups   =     41264

  R-sq:  within  = 0.0594                         Obs per group: min =         1
         between = 0.0102                                        avg =       3.9
         overall = 0.0380                                        max =        10

                                                  F(18,41263)        =     89.54
  corr(u_i, Xb)  = -0.0577                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 41,264 clusters in s
  > tafferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
  > Interval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment60 |   .0365876   .005779     6.33   0.000     .0252605
  >  .0479146
                  daysworked |  -.0002636   7.47e-06   -35.30   0.000    -.0002782
  > -.0002489
      committeestaff_everyear |  -.0081085   .0026602    -3.05   0.002    -.0133226
  > -.0028944
       personalstaff_everyear |  -.0132229   .0040137    -3.29   0.001    -.0210899
  > -.0053559
         senate_everyear |   .0005523   .0027068     0.20   0.838    -.0047532
  >  .0058577
        majority_everyear |   -.002957   .0028321    -1.04   0.296    -.0085079
  >   .002594
        minority_everyear |  -.0107292    .002887    -3.72   0.000    -.0163879
  > -.0050706
        dcoffice_everyear |    .006996   .001407     4.97   0.000     .0042383
  >  .0097536
   leaderofficestaff_everyear |  -.0024879   .0043487    -0.57   0.567    -.0110114
  >  .0060355
             |
                      year |
                      2008 |   .0083204   .001116     7.46   0.000      .006133
  >  .0105078
                      2009 |   .0074969   .0011835    6.33   0.000     .0051773
  >  .0098166
                      2010 |    .012509   .0012297   10.17   0.000     .0100987
  >  .0149193
                      2011 |   .0122716   .0013478    9.11   0.000       .00963
  >  .0149133
                      2012 |   .0130953   .0012699   10.31   0.000     .0106062
  >  .0155843
                      2013 |   .0136035   .0013655    9.96   0.000     .0109272
  >  .0162799
                      2014 |   .0182394   .0013126   13.90   0.000     .0156666
  >  .0208121
                      2015 |   .0153361   .0013253   11.57   0.000     .0127384
```

```
> .0179338
                        2016 |   .0206917   .0016982    12.18   0.000     .0173631
> .0240202
                             |
                       _cons |   .0978101    .003582    27.31   0.000     .0907894
> .1048309
-----------------------------+------------------------------------------------------------
------------

                     sigma_u |  .12240109
                     sigma_e |  .10498056
                         rho |  .57616654   (fraction of variance due to u_i)
-----------------------------+------------------------------------------------------------
------------

1477summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937         0          1

1478estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1479est store model2b

1480estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1481
1482xtreg lobbydirectafter switchtouncovered_treatment60 daysworked experience_imp exper
  > ience_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_eve
  > ryear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    140194
  Group variable: stafferid                       Number of groups   =     36921

  R-sq:  within  = 0.0628                         Obs per group: min =         1
         between = 0.0205                                        avg =       3.8
         overall = 0.0397                                        max =        10

                                                  F(19,36920)        =     79.53
  corr(u_i, Xb)  = -0.0936                        Prob > F           =    0.0000

                                                (Std. Err. adjusted for 36,921 clusters in s
  > tafferid)
-----------------------------+------------------------------------------------------------
------------

                             |               Robust
             lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
  > Interval]
-----------------------------+------------------------------------------------------------
------------
switchtouncovered_treatment60 |   .0387622   .0064771     5.98   0.000     .0260668
> .0514575
                  daysworked |  -.0002786   8.26e-06   -33.73   0.000    -.0002948
> -.0002624
               experience_imp |   .0030511    .000314     9.72   0.000     .0024356
> .0036665
                experience_sq |  -.0000151   .0000139    -1.09   0.277    -.0000423
> .0000121
     committeestaff_everyear |  -.0079447    .002766    -2.87   0.004    -.0133662
> -.0025232
      personalstaff_everyear |  -.0161747   .0042197    -3.83   0.000    -.0244454
> -.007904
           senate_everyear |  -.0004453   .0027887    -0.16   0.873    -.0059113
```

```
> .0050207
          majority_everyear |  -.0010558   .0029321    -0.36   0.719    -.0068027
> .0046911
          minority_everyear |  -.0083079   .0029772    -2.79   0.005    -.0141432
> -.0024726
          dcoffice_everyear |   .0079473   .0015312     5.19   0.000     .0049462
> .0109484
   leaderofficestaff_everyear |   -.003299   .0043152    -0.76   0.445    -.0117569
> .0051589
                             |
                        year |
                        2008 |   .0073275   .0012483     5.87   0.000     .0048807
> .0097742
                        2009 |   .0049988   .0012797     3.91   0.000     .0024905
>  .007507
                        2010 |   .0073309   .0012872     5.70   0.000     .0048079
> .0098538
                        2011 |   .0050436   .0014338     3.52   0.000     .0022333
> .0078539
                        2012 |   .0024847   .0013341     1.86   0.063    -.0001302
> .0050995
                        2013 |   .0008937   .0014825     0.60   0.547     -.002012
> .0037995
                        2014 |   .0029252   .0014914     1.96   0.050     2.00e-06
> .0058484
                        2015 |  -.0033226   .0015339    -2.17   0.030     -.006329
> -.0003162
                        2016 |          0  (omitted)
                             |
                       _cons |   .0953563   .0040746    23.40   0.000        .08737
> .1033425
-----------------------------+------------------------------------------------------------------------------
  _________

                     sigma_u |  .11670705
                     sigma_e |  .10800472
                         rho |  .53866865   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  _________

1483summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    140,194    .0153716    .1230259          0          1

1484estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01537156

1485est store model3b

1486estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1487
1488
1489esttab model1 model2 model3 model1b model2b model3b using "TABLED10.csv", replace //
  > /
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2001-2007" "2001-2006", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment60 "Switch to uncovered (inc. days)" d
  > aysworked "Days worked" experience_imp "Hill experience" experience_sq "Hill experie
  > nce sq." committeestaff2_everyear "Committee staff" personalstaff_everyear "Personal
  >  staff" senate_everyear "Senate staff" majority_everyear "Majority party staff" mino
  > rity_everyear "Minority party staff" dcoffice_everyear "DC office staff" leaderoffic
  > estaff_everyear "Leadership office staff") ///
  >     label parentheses nogaps nolines noeqlines ///
```

```
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED10.csv not found)
  (output written to TABLED10.csv)

1490
  end of do-file

1491do TABLEE11.do

1492
1493/*****************************************************************************\
  > |    Title:              TABLED11: Alternative Treatment Coding: Incorporate       |
  >                                                 December Previous Year
  >                                                |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
1494
1495
1496clear all

1497set more off, permanently
  (set more preference recorded)

1498numlabel, add
  (dataset has no value labels)

1499set maxvar 32000


1500
1501use congress_yearly.dta, clear

1502xtset stafferid year
         panel variable:  stafferid (unbalanced)
          time variable:  year, 2001 to 2016, but with gaps
                  delta:  1 unit

1503
1504*****************************************
1505** 2008-2016
1506
1507xtreg lobbydirectafter switchtouncovered_treatment_dec i.year if posttreat==1, fe no
  > nest vce(cluster stafferid)

  Fixed-effects (within) regression               Number of obs      =    143745
  Group variable: stafferid                       Number of groups   =     37744

  R-sq:  within  = 0.0133                         Obs per group: min =         1
         between = 0.0173                                        avg =       3.8
         overall = 0.0002                                        max =         9

                                                  F(9,37743)         =    126.48
  corr(u_i, Xb)  = -0.1651                        Prob > F           =    0.0000

                                             (Std. Err. adjusted for 37,744 clusters in
  >  stafferid)
  ------------------------------------------------------------------------------------
    ___________
                                  |               Robust
                lobbydirectafter  |      Coef.   Std. Err.      t    P>|t|     [95% Conf
  > . Interval]
  ------------------------------------------------------------------------------------
    ___________
  switchtouncovered_treatment_dec |    .012423   .0059644     2.08   0.037     .0007326
  >    .0241134
                                  |
                             year |
                            2009  |   .0124113   .0009954    12.47   0.000     .0104603
  >    .0143623
```

```
                        2010 |   .0173033   .0011086    15.61   0.000     .0151304
>    .0194761
                        2011 |   .0288355   .0013446    21.45   0.000        .0262
>     .031471
                        2012 |    .024223   .0012262    19.75   0.000     .0218196
>    .0266263
                        2013 |   .0336975   .0013937    24.18   0.000     .0309658
>    .0364291
                        2014 |   .0345608   .0013683    25.26   0.000     .0318789
>    .0372427
                        2015 |    .038373   .0014323    26.79   0.000     .0355657
>    .0411803
                        2016 |   .0506935   .0017331    29.25   0.000     .0472966
>    .0540904
                             |
                       _cons |  -.0123209   .0008656   -14.23   0.000    -.0140175
>   -.0106243
------------------------------+---------------------------------------------------
                     sigma_u |  .11388955
                     sigma_e |  .10611707
                         rho |  .53528437   (fraction of variance due to u_i)
------------------------------------------------------------------------------

1508summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    143,745    .0140527    .1177085          0          1

1509estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01405266

1510est store model1

1511estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1512
1513
1514xtreg lobbydirectafter switchtouncovered_treatment_dec daysworked committeestaff_eve
  > ryear personalstaff_everyear senate_everyear majority_everyear minority_everyear dco
  > ffice_everyear leaderofficestaff_everyear i.year if posttreat==1, fe nonest cluster(
  > stafferid)

  Fixed-effects (within) regression               Number of obs      =    143745
  Group variable: stafferid                       Number of groups   =     37744

  R-sq:  within  = 0.0554                         Obs per group: min =         1
         between = 0.0055                                        avg =       3.8
         overall = 0.0340                                        max =         9

                                                  F(17,37743)        =     85.82
  corr(u_i, Xb)  = -0.0640                        Prob > F           =    0.0000

                                                 (Std. Err. adjusted for 37,744 clusters in
  >  stafferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf
> . Interval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment_dec |   .0082199   .0057287     1.43   0.151    -.0030085
>    .0194482
                  daysworked |  -.0002572   7.75e-06   -33.21   0.000    -.0002724
```

```
>   -.0002421
        committeestaff_everyear |  -.0050261   .0027961    -1.80   0.072    -.0105065
>    .0004543
         personalstaff_everyear |  -.0108807   .0042838    -2.54   0.011    -.0192771
>   -.0024843
                senate_everyear |  -.0001912    .002744    -0.07   0.944    -.0055694
>    .0051871
              majority_everyear |  -.0031867   .0029935    -1.06   0.287    -.0090541
>    .0026806
              minority_everyear |  -.0106135   .0030609    -3.47   0.001     -.016613
>    -.004614
              dcoffice_everyear |    .007216    .001482     4.87   0.000     .0043113
>    .0101208
     leaderofficestaff_everyear |   .0002584   .0047018     0.05   0.956    -.0089572
>     .009474
                                |
                           year |
                           2009 |   .0034856   .0009469     3.68   0.000     .0016297
>    .0053416
                           2010 |   .0090334   .0010501     8.60   0.000      .006975
>    .0110917
                           2011 |   .0102958   .0011761     8.75   0.000     .0079905
>     .012601
                           2012 |   .0108937   .0011044     9.86   0.000     .0087291
>    .0130583
                           2013 |   .0120427   .0011823    10.19   0.000     .0097255
>    .0143599
                           2014 |   .0164546   .0011483    14.33   0.000     .0142039
>    .0187053
                           2015 |   .0141622   .0011522    12.29   0.000     .0119039
>    .0164205
                           2016 |   .0195894    .001571    12.47   0.000     .0165101
>    .0226687
                                |
                          _cons |   .0952029   .0036724    25.92   0.000     .0880048
>    .1024009
------------------------------+------------------------------------------------------------
  ___________
                        sigma_u |  .11179166
                        sigma_e |  .10383264
                            rho |  .53686128   (fraction of variance due to u_i)
------------------------------+------------------------------------------------------------
  ___________
```

1515summarize lobbydirectafter if e(sample)==1

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	143,745	.0140527	.1177085	0	1

1516estadd scalar ymean = r(mean)

```
added scalar:
              e(ymean) =  .01405266
```

1517est store model2

1518estadd local fixed "Yes" , replace

```
added macro:
              e(fixed) : "Yes"
```

```
1519
1520
1521xtreg lobbydirectafter switchtouncovered_treatment_dec daysworked experience_imp exp
  > erience_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_e
  > veryear minority_everyear dcoffice_everyear leaderofficestaff_everyear i.year if pos
  > ttreat==1, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    128067
  Group variable: stafferid                       Number of groups   =     34438

  R-sq:  within  = 0.0586                         Obs per group: min =         1
         between = 0.0145                                        avg =       3.7
         overall = 0.0338                                        max =         9

                                                  F(18,34437)        =     76.35
  corr(u_i, Xb)  = -0.1157                        Prob > F           =    0.0000

                                                 (Std. Err. adjusted for 34,438 clusters in
  >  stafferid)
  ------------------------------------------------------------------------------
               |               Robust
  lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf
  > . Interval]
  -------------+----------------------------------------------------------------
  switchtouncovered_treatment_dec |   .0116929   .0062979     1.86   0.063    -.0006511
  >    .0240369
                   daysworked |  -.0002716   8.50e-06   -31.94   0.000    -.0002883
  >   -.0002549
                experience_imp |   .0026679    .000338     7.89   0.000     .0020054
  >    .0033304
                 experience_sq |   .0000108   .0000152     0.71   0.477    -.0000189
  >    .0000405
           committeestaff_everyear |  -.0050626   .0029029    -1.74   0.081    -.0107523
  >    .0006271
            personalstaff_everyear |  -.0138134   .0044843    -3.08   0.002    -.0226028
  >    -.005024
              senate_everyear |   -.001144   .0028421    -0.40   0.687    -.0067145
  >    .0044265
          majority_everyear |  -.0016921   .0030932    -0.55   0.584    -.0077547
  >    .0043706
          minority_everyear |   -.008392    .003146    -2.67   0.008    -.0145583
  >   -.0022257
          dcoffice_everyear |   .0080648   .0016031     5.03   0.000     .0049226
  >    .0112069
     leaderofficestaff_everyear |   .0000132   .0046961     0.00   0.998    -.0091914
  >    .0092177
               |
                      year |
                      2009 |   .0020899   .0010402     2.01   0.045     .0000511
  >    .0041286
                      2010 |   .0051496   .0011293     4.56   0.000     .0029362
  >     .007363
                      2011 |   .0043896   .0013077     3.36   0.001     .0018264
  >    .0069529
                      2012 |   .0015395   .0012426     1.24   0.215    -.0008962
  >    .0039751
                      2013 |   .0005548   .0014093     0.39   0.694    -.0022075
  >    .0033171
                      2014 |   .0022943   .0014531     1.58   0.114    -.0005537
  >    .0051424
                      2015 |   -.003359   .0015166    -2.21   0.027    -.0063315
  >   -.0003864
                      2016 |          0  (omitted)
                           |
                     _cons |   .0927747   .0041937    22.12   0.000     .0845548
  >    .1009945
  -------------+----------------------------------------------------------------
                   sigma_u |  .10997207
```

```
                     sigma_e |  .10673734
                         rho |  .51492325   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
1522summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    128,067    .0146017    .1199526          0          1

1523estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01460173

1524est store model3

1525estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1526
1527*****************************************
1528** 2007-2016
1529
1530xtreg lobbydirectafter switchtouncovered_treatment_dec i.year if posttreat==1 | year
  > ==2007, fe nonest cluster(stafferid)

Fixed-effects (within) regression               Number of obs      =    159890
Group variable: stafferid                       Number of groups   =     41264

R-sq:  within  = 0.0118                         Obs per group: min =         1
       between = 0.0237                                        avg =       3.9
       overall = 0.0000                                        max =        10

                                                F(10,41263)        =    102.44
corr(u_i, Xb)  = -0.1790                        Prob > F           =    0.0000

                                              (Std. Err. adjusted for 41,264 clusters in
>  stafferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf
> . Interval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment_dec |   .0114072   .0057462     1.99   0.047     .0001444
>    .0226699
             |
                        year |
                        2008 |   .0120878   .0011669    10.36   0.000     .0098007
>    .0143748
                        2009 |   .0180866    .001255    14.41   0.000     .0156268
>    .0205464
                        2010 |   .0208662   .0013031    16.01   0.000     .0183121
>    .0234202
                        2011 |   .0314229    .001502    20.92   0.000     .0284789
>    .0343669
                        2012 |   .0259439   .0013803    18.80   0.000     .0232385
>    .0286493
                        2013 |   .0350977   .0015398    22.79   0.000     .0320798
>    .0381157
                        2014 |   .0356463    .001495    23.84   0.000     .0327162
>    .0385764
                        2015 |   .0392599   .0015504    25.32   0.000     .0362212
>    .0422987
                        2016 |   .0514811   .0018367    28.03   0.000     .0478812
>     .055081
             |
```

```
                       _cons |  -.0117047   .0010122   -11.56   0.000    -.0136886
>   -.0097209
------------------------------+---------------------------------------------------
                     sigma_u |  .12536762
                     sigma_e |  .10760033
                         rho |  .57582392   (fraction of variance due to u_i)
------------------------------------------------------------------------------

1531summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937          0          1

1532estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1533est store model1b

1534estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1535
1536xtreg lobbydirectafter switchtouncovered_treatment_dec daysworked committeestaff_eve
  > ryear personalstaff_everyear senate_everyear majority_everyear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe nonest cluster(stafferid)

Fixed-effects (within) regression               Number of obs      =    159890
Group variable: stafferid                       Number of groups   =     41264

R-sq:  within  = 0.0578                         Obs per group: min =         1
       between = 0.0080                                        avg =       3.9
       overall = 0.0356                                        max =        10

                                                F(18,41263)        =     89.09
corr(u_i, Xb)  = -0.0643                        Prob > F           =    0.0000

                                              (Std. Err. adjusted for 41,264 clusters in
>  stafferid)
------------------------------------------------------------------------------
             |               Robust
lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [95% Conf
> . Interval]
-------------+----------------------------------------------------------------
switchtouncovered_treatment_dec |   .0068629   .0055103     1.25   0.213    -.0039375
>    .0176633
                  daysworked |  -.0002716   7.59e-06   -35.79   0.000    -.0002865
>   -.0002568
      committeestaff_everyear |  -.0075675   .0026593    -2.85   0.004    -.0127798
>   -.0023551
       personalstaff_everyear |  -.0134541   .0040187    -3.35   0.001    -.0213309
>   -.0055772
         senate_everyear |   .0004426   .0027104     0.16   0.870    -.0048699
>    .0057551
        majority_everyear |  -.0027797   .0028339    -0.98   0.327    -.0083342
>    .0027748
        minority_everyear |  -.0105394   .0028878    -3.65   0.000    -.0161995
>   -.0048792
        dcoffice_everyear |   .0072814   .0014101     5.16   0.000     .0045176
>    .0100453
     leaderofficestaff_everyear |  -.0019014   .0043703    -0.44   0.664    -.0104673
>    .0066644
                           |
```

```
                          year |
                          2008 |   .0083263    .001117     7.45   0.000     .0061368
>    .0105157
                          2009 |   .0077407   .0011838     6.54   0.000     .0054204
>    .0100611
                          2010 |   .0126325   .0012314    10.26   0.000     .0102189
>    .0150461
                          2011 |    .012732   .0013482     9.44   0.000     .0100895
>    .0153745
                          2012 |   .0132707   .0012717    10.44   0.000     .0107781
>    .0157633
                          2013 |   .0137885   .0013661    10.09   0.000     .0111109
>    .0164662
                          2014 |   .0182552   .0013131    13.90   0.000     .0156815
>    .0208289
                          2015 |   .0155161    .001328    11.68   0.000     .0129131
>    .0181191
                          2016 |   .0205511   .0016996    12.09   0.000     .0172199
>    .0238823
                               |
                         _cons |   .1005806    .003603    27.92   0.000     .0935185
>    .1076426
------------------------------+----------------------------------------------------------
  ___________
                       sigma_u |   .1226802
                       sigma_e |  .10506658
                           rho |  .57687878   (fraction of variance due to u_i)
------------------------------+----------------------------------------------------------
  ___________

1537summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    159,890    .0150353    .1216937          0          1

1538estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01503534

1539est store model2b

1540estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1541
1542
1543xtreg lobbydirectafter switchtouncovered_treatment_dec daysworked experience_imp exp
  > erience_sq committeestaff_everyear personalstaff_everyear senate_everyear majority_e
  > veryear minority_everyear ///
  >         dcoffice_everyear leaderofficestaff_everyear i.year if posttreat==1 | year==
  > 2007, fe nonest cluster(stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =    140194
  Group variable: stafferid                       Number of groups   =     36921

  R-sq:  within  = 0.0613                         Obs per group: min =         1
         between = 0.0176                                        avg =       3.8
         overall = 0.0377                                        max =        10

                                                  F(19,36920)        =     79.17
  corr(u_i, Xb)  = -0.0973                        Prob > F           =    0.0000
```

(Std. Err. adjusted for **36,921** clusters in stafferid)

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]
switchtouncovered_treatment_dec	.0094328	.0060594	1.56	0.120	-.0024437 .0213094
daysworked	-.0002866	8.39e-06	-34.14	0.000	-.000303 -.0002701
experience_imp	.0029841	.0003156	9.46	0.000	.0023655 .0036027
experience_sq	-.0000117	.000014	-0.83	0.404	-.0000392 .0000158
committeestaff_everyear	-.0073227	.0027648	-2.65	0.008	-.0127419 -.0019036
personalstaff_everyear	-.0164243	.0042247	-3.89	0.000	-.0247048 -.0081437
senate_everyear	-.000622	.0027909	-0.22	0.824	-.0060922 .0048483
majority_everyear	-.0007895	.0029341	-0.27	0.788	-.0065405 .0049615
minority_everyear	-.0080329	.0029785	-2.70	0.007	-.0138709 -.0021949
dcoffice_everyear	.0082156	.0015343	5.35	0.000	.0052083 .0112228
leaderofficestaff_everyear	-.0027832	.0043266	-0.64	0.520	-.0112635 .005697
year					
2008	.0073517	.0012483	5.89	0.000	.004905 .0097985
2009	.005284	.0012795	4.13	0.000	.0027761 .0077919
2010	.0075286	.0012887	5.84	0.000	.0050027 .0100544
2011	.0056227	.0014324	3.93	0.000	.0028152 .0084302
2012	.002732	.001335	2.05	0.041	.0001153 .0053487
2013	.0011694	.0014838	0.79	0.431	-.0017388 .0040777
2014	.0030499	.0014925	2.04	0.041	.0001246 .0059752
2015	-.0030197	.001537	-1.96	0.049	-.0060323 -7.13e-06
2016	0	(omitted)			
_cons	.0981118	.0041009	23.92	0.000	.0900739 .1061498
sigma_u	.11698839				
sigma_e	.1080942				
rho	.53945362	(fraction of variance due to u_i)			

```
1544summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**140,194**	**.0153716**	**.1230259**	**0**	**1**

```
1545estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01537156

1546est store model3b

1547estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1548
1549
1550esttab model1 model2 model3 model1b model2b model3b using "TABLED11.csv", replace //
  > /
  >         b(3) se(3) star(* .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles mgroups("2001-2007" "2001-2006", pattern(1 0 0 1 0 0)) ///
  >         coeflabels(switchtouncovered_treatment_dec "Switch to uncovered (adj)" daysw
  > orked "Days worked" experience_imp "Hill experience" experience_sq "Hill experience
  > sq." committeestaff2_everyear "Committee staff" personalstaff_everyear "Personal sta
  > ff" senate_everyear "Senate staff" majority_everyear "Majority party staff" minority
  > _everyear "Minority party staff" dcoffice_everyear "DC office staff" leaderofficesta
  > ff_everyear "Leadership office staff") //
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED11.csv not found)
  (output written to TABLED11.csv)

1551
1552
  end of do-file

1553do TABLEE12.do

1554
1555/*****************************************************************************\
  > |    Title:              TABLED12: Regression Models for Becoming Lobbyist -       |
  > |                                              DiD Specification
  >                                                      |
  > |    Date:               July 2023
  >        |
  > |    Author:         Elisa Wirsching
  >                    |
  > \*****************************************************************************/
1556
1557
1558clear all

1559set more off, permanently
  (set more preference recorded)
```

```
numlabel, add
  (dataset has no value labels)

set maxvar 32000


use congress_yearly.dta, clear

xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit

xtset stafferid year
        panel variable:  stafferid (unbalanced)
         time variable:  year, 2001 to 2016, but with gaps
                 delta:  1 unit

* include 2007 already in treatment period for DiD
gen posttreat2 = 0

replace posttreat2 = 1 if year>=2007
  (189,075 real changes made)

* no FE
reg lobbydirectafter i.switchtouncovered_treatment##i.posttreat2, vce(cluster staffe
  > rid)

  Linear regression                               Number of obs     =    240,687
                                                  F(3, 55603)       =      27.79
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.0009
                                                  Root MSE          =     .11755

                                                     (Std. Err. adjusted for 55,604 clus
  > ters in stafferid)
  ----------------------------------------------------------------------------------------
                                                  |               Robust
                                 lobbydirectafter |      Coef.   Std. Err.      t    P>|t|      [9
  > 5% Con
  >       f. Interval]
  ----------------------------------------------------------------------------------------
         1.switchtouncovered_treatment |   .0382777   .0122343     3.13   0.002     .0
  > 142983
  >           .0622571
                          1.posttreat2 |   .0028773   .0004831     5.96   0.000     .0
  > 019304
  >           .0038242
                                        |
  switchtouncovered_treatment#posttreat2 |
                                    1 1 |   .0109131    .014684     0.74   0.457    -.0
  > 178676
  >           .0396937
                                        |
                                  _cons |    .011879   .0003806    31.21   0.000      .
  > 011133
  >            .012625
  ----------------------------------------------------------------------------------------
```

```
1574summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**240,687**	**.0140265**	**.1176003**	**0**	**1**

```
1575estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01402652

1576est store model1

1577estadd local fixed "No" , replace

  added macro:
              e(fixed) : "No"

1578
1579
1580* staffer FE
1581xtreg lobbydirectafter i.switchtouncovered_treatment##i.posttreat2 i.year, fe vce(cl
  > uster stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    240,687
  Group variable: stafferid                       Number of groups  =     55,604

  R-sq:                                           Obs per group:
       within  = 0.0131                                         min =          1
       between = 0.0055                                         avg =        4.3
       overall = 0.0005                                         max =         15

                                                  F(16,55603)       =     114.51
  corr(u_i, Xb)  = -0.2117                        Prob > F          =     0.0000

                                                     (Std. Err. adjusted for 55,604 clus
  > ters in stafferid)
```

lobbydirectafter	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]
1.switchtouncovered_treatment	.0121161	.0121595	1.00	0.319	-.0117167 .0359489
1.posttreat2	.0657149	.0018385	35.74	0.000	.0621113 .0693184
switchtouncovered_treatment#posttreat2 1 1	.0278302	.0148538	1.87	0.061	-.0012834 .0569438
year 2003	.0128688	.0010296	12.50	0.000	.0108507 .0148868
2004	.0162509	.0011502	14.13	0.000	.0139965 .0185052
2005	.0250076	.0013493	18.53	0.000	.022363 .0276523
2006	.027856	.0013698	20.34	0.000	.0251711 .0305409
2007	-.0245127	.0018777	-13.05	0.000	-.

```
> 028193
>          -.0208324
                                2008 |  -.0295757   .0017431   -16.97   0.000    -.0
> 329922
>          -.0261591
                                2009 |  -.0277704    .001717   -16.17   0.000    -.0
> 311358
>           -.024405
                                2010 |  -.0268886   .0016779   -16.02   0.000    -.0
> 301774
>          -.0235999
                                2011 |   -.017622   .0017463   -10.09   0.000    -.0
> 210448
>          -.0141991
                                2012 |  -.0237785   .0016322   -14.57   0.000    -.0
> 269777
>          -.0205793
                                2013 |  -.0154027   .0016862    -9.13   0.000    -.0
> 187077
>          -.0120978
                                2014 |  -.0152704   .0015912    -9.60   0.000    -.0
> 183892
>          -.0121516
                                2015 |  -.0120098    .001558    -7.71   0.000    -.0
> 150636
>          -.0089561
                                2016 |          0  (omitted)
                                     |
                               _cons |  -.0222948    .000993   -22.45   0.000    -.0
> 242412
>          -.0203485
-------------------------------------+----------------------------------------------
  ------------------

                             sigma_u |  .09908884
                             sigma_e |  .11082374
                                 rho |  .44427042   (fraction of variance due to u_i
> )
-------------------------------------+----------------------------------------------
  ------------------

1582summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    240,687    .0140265    .1176003          0          1

1583estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01402652

1584est store model2

1585estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1586
1587
```

```
1588* no days worked
1589xtreg lobbydirectafter i.switchtouncovered_treatment##i.posttreat2 committeestaff_ev
  > eryear personalstaff_everyear senate_everyear majority_everyear minority_everyear dc
  > office_everyear leaderofficestaff_everyear i.year, fe vce(cluster stafferid)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    240,687
  Group variable: stafferid                       Number of groups  =     55,604

  R-sq:                                           Obs per group:
       within  = 0.0142                                         min =          1
       between = 0.0057                                         avg =        4.3
       overall = 0.0002                                         max =         15

                                                  F(23,55603)       =      80.45
  corr(u_i, Xb)  = -0.2551                        Prob > F          =     0.0000

                                                     (Std. Err. adjusted for 55,604 clus
  > ters in stafferid)
  ------------------------------------------------------------------------------------
    ------------------
                                                |               Robust
                       lobbydirectafter |      Coef.   Std. Err.      t    P>|t|     [9
  > 5% Con
  >       f. Interval]
  ------------------------------------------------------------------------------------
    ------------------
          1.switchtouncovered_treatment |   .0127943   .0121713     1.05   0.293    -.0
  > 110615
  >           .0366502
                           1.posttreat2 |   .0648909   .0018387    35.29   0.000     .0
  > 612871
  >           .0684947
                                        |
  switchtouncovered_treatment#posttreat2 |
                                   1 1  |   .0276665   .0148641     1.86   0.063    -.0
  > 014672
  >           .0568002
                                        |
                 committeestaff_everyear |   -.012106   .0020658    -5.86   0.000    -.0
  > 161551
  >           -.008057
                  personalstaff_everyear |  -.0210146    .003146    -6.68   0.000    -.0
  > 271808
  >          -.0148483
                        senate_everyear |   .0004169   .0019946     0.21   0.834    -.0
  > 034926
  >           .0043264
                      majority_everyear |  -.0070859   .0022637    -3.13   0.002    -.0
  > 115227
  >          -.0026491
                      minority_everyear |  -.0086149   .0022913    -3.76   0.000    -.0
  > 131059
  >          -.0041239
                      dcoffice_everyear |   .0053988   .0008937     6.04   0.000     .0
  > 036472
  >           .0071504
             leaderofficestaff_everyear |  -.0050036   .0033089    -1.51   0.130    -.0
  > 114892
  >           .0014819
                                        |
                                   year |
                                  2003  |    .013109   .0010312    12.71   0.000     .0
  > 110879
  >           .0151302
                                  2004  |   .0161012   .0011501    14.00   0.000      .
  > 013847
  >           .0183553
                                  2005  |    .024449   .0013715    17.83   0.000     .0
  > 217609
  >           .0271371
                                  2006  |   .0276627   .0013691    20.20   0.000     .0
```

```
> 249792
>           .0303461
                                2007 |  -.0236618   .0018757   -12.61   0.000    -.0
> 273382
>          -.0199854
                                2008 |  -.0291231   .0017431   -16.71   0.000    -.0
> 325396
>          -.0257067
                                2009 |  -.0271613   .0017146   -15.84   0.000    -.0
> 305218
>          -.0238007
                                2010 |  -.0266578   .0016775   -15.89   0.000    -.0
> 299457
>            -.02337
                                2011 |  -.0169305   .0017434    -9.71   0.000    -.0
> 203475
>          -.0135134
                                2012 |  -.0235204   .0016302   -14.43   0.000    -.0
> 267155
>          -.0203252
                                2013 |  -.0148749   .0016855    -8.83   0.000    -.0
> 181784
>          -.0115713
                                2014 |  -.0150873   .0015905    -9.49   0.000    -.0
> 182048
>          -.0119698
                                2015 |  -.0114958   .0015598    -7.37   0.000    -.0
> 145531
>          -.0084385
                                2016 |          0  (omitted)
                                     |
                               _cons |  -.0024513   .0021125    -1.16   0.246    -.0
> 065919
>           .0016893
-------------------------------------+----------------------------------------------
                             sigma_u |  .09928103
                             sigma_e |   .1107668
                                 rho |   .4454813   (fraction of variance due to u_i
> )
-------------------------------------+----------------------------------------------
```

```
1590summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	240,687	.0140265	.1176003	0	1

```
1591estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01402652

1592est store model3

1593estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"
```

```
1594
1595* days worked
1596xtreg lobbydirectafter i.switchtouncovered_treatment##i.posttreat2 daysworked commit
  > teestaff_everyear personalstaff_everyear senate_everyear majority_everyear minority_
  > everyear dcoffice_everyear leaderofficestaff_everyear i.year, fe vce(cluster staffer
  > id)
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    240,687
  Group variable: stafferid                       Number of groups  =     55,604

  R-sq:                                           Obs per group:
       within  = 0.0641                                         min =          1
       between = 0.0010                                         avg =        4.3
       overall = 0.0371                                         max =         15

                                                  F(24,55603)       =     108.55
  corr(u_i, Xb)  = -0.1112                        Prob > F          =     0.0000

                                                     (Std. Err. adjusted for 55,604 clus
  > ters in stafferid)
  ------------------------------------------------------------------------------------
    ------------------
                                                |               Robust
                       lobbydirectafter         |      Coef.   Std. Err.      t    P>|t|     [9
  > 5% Con
  >       f. Interval]
  ------------------------------------------------------------------------------------
    ------------------
          1.switchtouncovered_treatment         |   .0089175   .0116487     0.77   0.444     -.
  > 013914
  >           .0317491
                           1.posttreat2         |   .0248883   .0016563    15.03   0.000     .0
  > 216418
  >           .0281347
                                                |
  switchtouncovered_treatment#posttreat2        |
                                    1 1         |   .0174977   .0142281     1.23   0.219    -.0
  > 103895
  >            .045385
                                                |
                             daysworked         |  -.0002887   6.27e-06   -46.04   0.000     -.
  > 000301
  >          -.0002764
                 committeestaff_everyear        |   -.003769    .002004    -1.88   0.060    -.0
  > 076969
  >           .0001588
                  personalstaff_everyear        |  -.0161082   .0030837    -5.22   0.000    -.0
  > 221523
  >           -.010064
                        senate_everyear         |   .0011898   .0019523     0.61   0.542    -.0
  > 026367
  >           .0050163
                      majority_everyear         |  -.0011637   .0022192    -0.52   0.600    -.0
  > 055134
  >            .003186
                      minority_everyear         |  -.0079551   .0022472    -3.54   0.000    -.0
  > 123595
  >          -.0035506
                      dcoffice_everyear         |   .0061687   .0009217     6.69   0.000      .
  > 004362
  >           .0079753
             leaderofficestaff_everyear         |   .0012031   .0032297     0.37   0.710    -.0
  > 051271
  >           .0075333
                                                |
                                     year       |
                                    2003        |   .0012252    .001015     1.21   0.227    -.0
  > 007643
  >           .0032147
                                    2004        |    .005533   .0011112     4.98   0.000     .0
  > 033551
```

```
> .007711
                                2005 |  .0076234   .0012941     5.89   0.000      .
> 005087
>  .0101597
                                2006 |     .0126   .0012907     9.76   0.000     .0
> 100703
>  .0151298
                                2007 | -.0068191   .0018471    -3.69   0.000    -.0
> 104393
> -.0031988
                                2008 | -.0060284   .0017204    -3.50   0.000    -.0
> 094004
> -.0026564
                                2009 |  -.009592   .0016976    -5.65   0.000    -.0
> 129194
> -.0062647
                                2010 | -.0049906   .0016685    -2.99   0.003    -.0
> 082608
> -.0017204
                                2011 | -.0064805   .0017364    -3.73   0.000    -.0
> 098839
> -.0030771
                                2012 |  -.005256   .0016329    -3.22   0.001    -.0
> 084565
> -.0020556
                                2013 | -.0058725   .0016822    -3.49   0.000    -.0
> 091696
> -.0025754
                                2014 | -.0011586    .001605    -0.72   0.470    -.0
> 043044
>  .0019871
                                2015 | -.0045956   .0015621    -2.94   0.003    -.0
> 076572
> -.0015339
                                2016 |         0  (omitted)
                                     |
                               _cons |  .1023233   .0029051    35.22   0.000     .0
> 966293
>  .1080173
-------------------------------------+----------------------------------------------
------------------

                           sigma_u |  .09853117
                           sigma_e |  .10792535
                               rho |  .45459205   (fraction of variance due to u_i
> )
-------------------------------------+----------------------------------------------
------------------
```

```
1597summarize lobbydirectafter if e(sample)==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lobbydirec~r	**240,687**	**.0140265**	**.1176003**	**0**	**1**

```
1598estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01402652

1599est store model3b
```

```
1600estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1601
1602
1603xtreg lobbydirectafter i.switchtouncovered_treatment##i.posttreat2 daysworked experi
  > ence_imp  experience_sq committeestaff_everyear personalstaff_everyear senate_everye
  > ar majority_everyear minority_everyear dcoffice_everyear leaderofficestaff_everyear
  > i.year, fe vce(cluster stafferid)
  note: 2015.year omitted because of collinearity
  note: 2016.year omitted because of collinearity

  Fixed-effects (within) regression               Number of obs     =    181,970
  Group variable: stafferid                       Number of groups  =     42,707

  R-sq:                                           Obs per group:
       within  = 0.0736                                         min =          1
       between = 0.0077                                         avg =        4.3
       overall = 0.0369                                         max =         15

                                                  F(25,42706)       =      89.91
  corr(u_i, Xb)  = -0.2294                        Prob > F          =     0.0000

                                                     (Std. Err. adjusted for 42,707 clus
  > ters in stafferid)
------------------------------------------------------------------------------
  ------------------
                     lobbydirectafter |      Coef.   Robust Std. Err.      t    P>|t|     [9
  > 5% Con
  >       f. Interval]
-------------------------------------+----------------------------------------------------
  ------------------
       1.switchtouncovered_treatment |   .0383434    .016917     2.27   0.023     .0
  > 051857
  >           .0715012
                      1.posttreat2 |  -.0180657   .0222769    -0.81   0.417    -.0
  > 617289
  >           .0255975
                                   |
  switchtouncovered_treatment#posttreat2
                                 1 1 |  -.0142611   .0190381    -0.75   0.454    -.0
  > 515761
  >           .0230539
                                   |
                        daysworked |  -.0003291   7.86e-06   -41.87   0.000    -.0
  > 003446
  >          -.0003137
                    experience_imp |   .0056619   .0016748     3.38   0.001     .0
  > 023792
  >           .0089446
                     experience_sq |  -.0000521   9.42e-06    -5.53   0.000    -.0
  > 000706
  >          -.0000336
            committeestaff_everyear |  -.0034446   .0022339    -1.54   0.123    -.0
  > 078231
  >           .0009339
             personalstaff_everyear |  -.0195458   .0034897    -5.60   0.000    -.0
  > 263856
  >           -.012706
                senate_everyear |  -.0004972   .0021475    -0.23   0.817    -.0
  > 047064
  >            .003712
               majority_everyear |   .0009327   .0024977     0.37   0.709    -.0
  > 039628
  >           .0058282
               minority_everyear |  -.0058959    .002522    -2.34   0.019    -.0
  > 108391
  >          -.0009527
               dcoffice_everyear |   .0088441   .0011223     7.88   0.000     .0
```

```
> 066444
>           .0110437
leaderofficestaff_everyear |  -.0004936   .0036687    -0.13   0.893    -.0
> 076842
>            .006697
                           |
                      year |
                      2003 |   .0156518   .0027135     5.77   0.000     .0
> 103333
>           .0209702
                      2004 |   .0162675   .0039739     4.09   0.000     .0
> 084785
>           .0240565
                      2005 |   .0151256   .0055076     2.75   0.006     .0
> 043307
>           .0259206
                      2006 |   .0161322   .0070748     2.28   0.023     .0
> 022654
>            .029999
                      2007 |   .0350936   .0139085     2.52   0.012     .0
> 078327
>           .0623544
                      2008 |   .0327306   .0122127     2.68   0.007     .0
> 087934
>           .0566678
                      2009 |   .0249721   .0105707     2.36   0.018     .0
> 042534
>           .0456908
                      2010 |   .0248532   .0088956     2.79   0.005     .0
> 074177
>           .0422886
                      2011 |   .0183513   .0072892     2.52   0.012     .0
> 040642
>           .0326383
                      2012 |   .0145078   .0056055     2.59   0.010     .0
> 035209
>           .0254946
                      2013 |   .0089742   .0040313     2.23   0.026     .0
> 010727
>           .0168757
                      2014 |   .0093876   .0024293     3.86   0.000     .0
> 046262
>            .014149
                      2015 |          0  (omitted)
                      2016 |          0  (omitted)
                           |
                     _cons |   .1007257   .0046984    21.44   0.000     .0
> 915167
>           .1099346
-------------------------------------------------------------------------
  ------------------

                   sigma_u |  .10018458
                   sigma_e |  .11239554
                       rho |  .44274721   (fraction of variance due to u_i
> )
-------------------------------------------------------------------------
  ------------------

1604        summarize lobbydirectafter if e(sample)==1

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
lobbydirec~r |    181,970    .0151673    .1222185         0          1
```

```
1605estadd scalar ymean = r(mean)

  added scalar:
              e(ymean) =  .01516734

1606est store model4

1607estadd local fixed "Yes" , replace

  added macro:
              e(fixed) : "Yes"

1608
1609
1610esttab model* using "TABLED12.csv", replace ///
  >         b(3) se(3) star(^$ 0.1 * .05 ** .01 *** 0.001) ///
  >         stats(fixed ymean N N_g r2, fmt(0 3 0 0 3) labels("Staffer FE" "Mean of DV"
  >  "Observations" "Number of staffers" "R2"))  ///
  >         nomtitles ///
  >         order(1.switchtouncovered_treatment#1.posttreat2) ///
  >         coeflabels(1.switchtouncovered_treatment "Switch to uncovered" 1.posttreat2
  > "Post-HLOGA" 1.switchtouncovered_treatment#1.posttreat2 "Switch to uncovered \times
  > Post-HLOGA" daysworked "Days worked" experience_imp "Hill experience" experience_sq
  > "Hill experience sq." committeestaff2_everyear "Committee staff" personalstaff_every
  > ear "Personal staff" senate_everyear "Senate staff" majority_everyear "Majority part
  > y staff" minority_everyear "Minority party staff" dcoffice_everyear "DC office staff
  > " leaderofficestaff_everyear "Leadership office staff") ///
  >     label parentheses nogaps nolines noeqlines ///
  >     noomitted nodepvars nobaselevels indicate("Year FE = *.year") nonotes noconstant
  (note: file TABLED12.csv not found)
  (output written to TABLED12.csv)

1611
1612
1613
1614
  end of do-file

1615
1616log close
       name:  <unnamed>
        log:  C:\Users\elisa\Dropbox\PhD\Research\Cooling off periods and selection of
  > public officials\HLOGA and strategic behavior of staffers\Data\_replication_final\lo
  > gfile.smcl
    log type:  smcl
   closed on:   3 Apr 2024, 15:58:38
-------------------------------------------------------------------------------
```