```
_____(R
/___/ / ____/ / ____/
___/ / /___/ / /___/
Statistics/Data analysis
```

```
17.0
                                     MP-Parallel Edition
    Statistics and Data Science
                                     Copyright 1985-2021 StataCorp LLC
                                      StataCorp
                                      4905 Lakeway Drive
                                      College Station, Texas 77845 USA
                                      800-STATA-PC
                                                        https://www.stata.com
                                     979-696-4600
                                                         stata@stata.com
   Stata license: Single-user 8-core , expiring 1 Jan 2025
   Serial number: 501709301094
    Licensed to: Yugen Chen
   Notes:
         1. Unicode is supported; see <a href="help-unicode_advice">help-unicode_advice</a>.
         2. More than 2 billion observations are allowed; see <a href="help-obs_advice">help-obs_advice</a>.
         3. Maximum number of variables is set to 5,000; see <a href="help set maxvar">help set maxvar</a>.
   Running c:\ado\plus\profile.do ...
 1 . doedit "C:\Users\Administrator\Downloads\new downloads\RA for Tim\RDHonestStata\Version 2\Test_rdhonestV2.do"
 2 . do "C:\Users\Administrator\Downloads\new downloads\RA for Tim\RDHonestStata\Version 2\Test_rdhonestV2.do"
 3 . clear all
 4 .
 5 . adopath + "."
     [1] (BASE)
                      "E:\Stata 17\ado\base/"
     [2] (SITE)
[3] (PERSONAL)
                      "E:\Stata 17\ado\site/"
                      "C:\Users\Administrator\ado\personal/"
                      "c:\ado\plus/"
     [4] (PLUS)
     [5] (OLDPLACE)
                     "c:\ado/'
     [6]
7 . cap log close
 8 . log using "rdhonest.txt", replace
         name: <unnamed>
               C:\Users\Administrator\Downloads\new downloads\RA for Tim\RDHonestStata\Version 2\rdhonest.txt
         log:
     log type: smcl
    opened on: 11 Aug 2022, 15:12:16
11 . // 1. Lee08
12 . qui: use "./data/lee08.dta",clear
13 .
14 .
15 . // 1.1 uni kernel
17 . rdhonestV2 voteshare margin, m(0.1) kernel("uni") h(10)
```

Thursday August 11 15:17:29 2022 Page 2

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
6.0567735	1.7237683	1.190527	2.3747303	9.7388168

95% One-sided Conf. intervals:

(2.3747627, Inf), (-Inf, 9.7387844)

Bandwidth: **10** Kernel: **uni**

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 1209

Maximum leverage for estimated parameter: .00370338

Smootheness const. M: .1

18 .

19 . // 1.1.1 uni kernel + optimal h

20 . rdhonestV2 voteshare margin, m(0.1) kernel("uni")
 Generating initial variance estimates via RDPrelimVar
 Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
5.9739815	.85025952	1.4329988	2.7360189	9.2119441

95% One-sided Conf. intervals:

(2.7666487, Inf), (-Inf, 9.1813143)

Bandwidth: 6.9147587

Kernel: uni

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 843

Maximum leverage for estimated parameter: .00550335

Smootheness const. M: .1

21 . rdhonestV2 voteshare margin, m(0.1) kernel("uni") opt_criterion("OCI")
 Generating initial variance estimates via RDPrelimVar
 Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
4.8899892	.57247584	1.5521001	1.6519964	8.1279821

95% One-sided Conf. intervals:

(1.764536, Inf), (-Inf, 8.0154425)

Bandwidth: **5.7718009**

Kernel: uni

Optimisation criterion: OCI

OCI with beta .8

Std Error method: nn

Number of effective observations: 701

Maximum leverage for estimated parameter: .00701161

Thursday August 11 15:17:29 2022 Page 3

22 . rdhonestV2 voteshare margin, m(0.1) kernel("uni") opt_criterion("FLCI")
 Generating initial variance estimates via RDPrelimVar
 Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
5.5705547	.89055351	1.4221318	2.3159062	8.8252033

95% One-sided Conf. intervals:

(2.3408026, Inf), (-Inf, 8.8003069)

Bandwidth: 7.1062028

Kernel: uni

Optimisation criterion: FLCI

Std Error method: nn

Number of effective observations: 863

Maximum leverage for estimated parameter: .00534982

Smootheness const. M: .1

23

24 . // 1.1.2 uni kernel + optimal h + without M + est_w saved as wgt

25 . rdhonestV2 voteshare margin, kernel("uni") est_w("wgt")
Generating initial variance estimates via RDPrelimVar
Smoothing class constant M missing or invalid. Running MROT_fit
Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
4.7981699	.89121052	1.5714064	1.2829887	8.3133511

95% One-sided Conf. intervals:

(1.3222258, Inf), (-Inf, 8.274114)

Bandwidth: **6.0119957**

Kernel: **uni**

Optimisation criterion: MSE

Std Error method: $\,$ nn

Number of effective observations: 728

Maximum leverage for estimated parameter: .00642132

Smootheness const. M: .14281081

26

27 . // 1.2 tri kernel

28 . rdhonestV2 voteshare margin, m(0.1) kernel("tri") h(10)

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]	
5.936726	1.0560642	1.2330102	2.8478939	9.025558	

95% One-sided Conf. intervals:

(2.8525404, Inf), (-Inf, 9.0209115)

Bandwidth: 10 Kernel: tri

Optimisation criterion: MSE

Std Error method: $\,$ nn

Number of effective observations: 1003.3747

Maximum leverage for estimated parameter: .00724322

```
29 .
```

30 . // 1.2.1 tri kernel + optimal h

31 . rdhonestV2 voteshare margin, m(0.1) kernel("tri") Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

f(p) = 3.2843434f(p) = 3.2545513Iteration 0: Iteration 1: Iteration 2: f(p) = 3.2537915f(p) = 3.2537877Iteration 3: Iteration 4: f(p) = 3.2537877

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
5.9366538	.83226659	1.2944181	2.9548312	8.9184764

95% One-sided Conf. intervals:

(2.9752589, Inf), (-Inf, 8.8980486) Bandwidth: 8.8485517

Kernel: tri

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 889.05125

Maximum leverage for estimated parameter: .00823634

Smootheness const. M: .1

32 . rdhonestV2 voteshare margin, m(0.1) kernel("tri") opt criterion("OCI")

Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

Iteration 0: f(p) = 5.5819159Iteration 1: f(p) = 5.5410167Iteration 2: f(p) = 5.541015Iteration 3: f(p) = 5.541015

Dependent variable: voteshare Running variable:

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]	
5.8226504	.57582661	1.3820246	2.8946797	8.7506211	

95% One-sided Conf. intervals:

(2.9735957, Inf), (-Inf, **8.6717052**)

Bandwidth: **7.4293472**

Kernel: tri

Optimisation criterion: OCI

OCI with beta .8 Std Error method: nn

Number of effective observations: 737.59284

Maximum leverage for estimated parameter: .00997347

33 . rdhonestV2 voteshare margin, m(0.1) kernel("tri") opt_criterion("FLCI")

Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

Iteration 0: f(p) = 3.542463Iteration 1: f(p) = 3.5144537Iteration 2: f(p) = 3.5143254Iteration 3: f(p) = 3.5143252

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
5.9544571	.88348213	1.2787498	2.9527267	8.9561874

95% One-sided Conf. intervals:

(2.9676186, Inf), (-Inf, 8.9412955)

Bandwidth: **9.1115931**

Kernel: tri

Optimisation criterion: FLCI

Std Error method: nn

Number of effective observations: 917.82374

Maximum leverage for estimated parameter: .00798822

Smootheness const. M: .1

34 .

35 . // 1.2.2 tri kernel + optimal h + without M + est_w saved as wgt

36 . rdhonestV2 voteshare margin, kernel("tri") est_w("wgt")

Generating initial variance estimates via RDPrelimVar

Smoothing class constant M missing or invalid. Running MROT_fit

Bandwidth (h) missing or invalid. Running RDOptBW_fit

Iteration 0: f(p) = 3.8340891Iteration 1: f(p) = 3.781853Iteration 2: f(p) = 3.7816331Iteration 3: f(p) = 3.7816329

Dependent variable: voteshare Running variable: margin

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
5.8497322	.88800705	1.3658833	2.6944354	9.0050291

95% One-sided Conf. intervals:

(2.7150471, Inf), (-Inf, 8.9844174)

Bandwidth: 7.7150698

Kernel: **tri**

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 764.55959

Maximum leverage for estimated parameter: .00956087

First-stage estimate: .50198462

Smootheness const. M [first-stage,reduced-form]: [.4,4]

Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

47 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("uni") t0(0) opt_criterion("OCI")

```
Thursday August 11 15:17:29 2022
                                     Page 6
39 . // 2. rcp
40 . qui: use "./data/rcp.dta",clear
41 .
42 . // 2.1 uni kernel
43 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("uni") h(3) est_w("wgt")
   Dependent variable: cn
   Running variable: elig year
   Treatment variable:
                        retired
    Estimate
                Maximum Bias
                              Std. Error
                                            [95% Conf.
                                                          intervals]
   -6081.3279
                24908.345
                                            -36467.548
                                                          24304.892
                              3330.3115
   95% One-sided Conf. intervals:
    (-36467.548, Inf), (-Inf, 24304.892)
   Bandwidth: 3
   Kernel: uni
   Optimisation criterion: MSE
   Std Error method: nn
   Number of effective observations: 2859
   Maximum leverage for estimated parameter: .00114857
   First-stage estimate: .33065224
   Smootheness const. M [first-stage, reduced-form]: [.4,4]
44 .
45 . // 2.1.1 uni kernel + optimal h
46 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("uni") t0(0)
  Generating initial variance estimates via RDPrelimVar
  Bandwidth (h) missing or invalid. Running RDOptBW_fit
   Dependent variable:
   Running variable: elig_year
   Treatment variable: retired
    Estimate
                Maximum Bias
                              Std. Error
                                            [95% Conf.
                                                          intervals]
   -3041.9849
                119639.28
                              721.14217
                                            -123867.44
                                                          117783.47
   95% One-sided Conf. intervals:
    (-123867.44, Inf), (-Inf, 117783.47)
   Bandwidth: 15
   Kernel: uni
   Optimisation criterion: MSE
   Std Error method: nn
   Number of effective observations: 16531
   Maximum leverage for estimated parameter: .00027266
```

Thursday August 11 15:17:29 2022 Page 7

Dependent variable: cn
Running variable: elig_year
Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-2372.7534	82919.915	792.50394	-86596.222	81850.715

95% One-sided Conf. intervals:

(-86596.222, Inf), (-Inf, 81850.715)

Bandwidth: **14** Kernel: **uni**

Optimisation criterion: OCI

OCI with beta .8 Std Error method: nn

Number of effective observations: 14923

Maximum leverage for estimated parameter: .00030851

First-stage estimate: .47900876

Smootheness const. M [first-stage, reduced-form]: [.4,4]

48 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("uni") t0(0) opt_criterion("FLCI") Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: cn Running variable: elig_year Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-3273.6481	141925.17	702.84327	-146354.9	139807.6

95% One-sided Conf. intervals:

(-146354.9, Inf), (-Inf, 139807.6)

Bandwidth: **16** Kernel: **uni**

Optimisation criterion: FLCI

Std Error method: nn

Number of effective observations: 17524

Maximum leverage for estimated parameter: .00026001

First-stage estimate: .50047804

Smootheness const. M [first-stage,reduced-form]: [.4,4]

49 .

50 . // 2.1.2 uni kernel + optimal h + without M + est_w saved as wgt 51 . rdhonestV2 cn (retired=elig_year), kernel("uni") t0(0) est_w("wgt")

Generating initial variance estimates via RDPrelimVar

Smoothing class constant M missing or invalid. Running MROT_fit

Bandwidth (h) missing or invalid. Running RDOptBW_fit

Dependent variable: cn Running variable: elig_year Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-4101.283	2305.5557	2288.7447	-10174.282	1971.7156

95% One-sided Conf. intervals:

(-10171.489, Inf), (-Inf, 1968.9226)

Bandwidth: 5
Kernel: uni

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 5018

Maximum leverage for estimated parameter: .00076356

```
Thursday August 11 15:17:29 2022 Page 8
```

First-stage estimate: .32380997

Smootheness const. M [first-stage, reduced-form]: [.00817893,67.232053]

52 . 53 . // 2.2 tri kernel

54 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("tri") h(3)

Dependent variable: cn
Running variable: elig_year
Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-4623.8705	12711.567	5692.377	-26698.565	17450.824

95% One-sided Conf. intervals:

(-26698.565, Inf), (-Inf, 17450.824)

Bandwidth: 3 Kernel: tri

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 1867

Maximum leverage for estimated parameter: .0012858

First-stage estimate: .29163173

Smootheness const. M [first-stage,reduced-form]: [.4,4]

```
56 . // 2.2.1 tri kernel + optimal h
```

58 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("tri") t0(0)

Generating initial variance estimates via RDPrelimVar Bandwidth (h) missing or invalid. Running RDOptBW_fit

numerical derivatives are approximate flat or discontinuous region encountered

Iteration 0: f(p) = 2481787.2Iteration 1: f(p) = 484315.37

Iteration 2: f(p) = 484315.37 (backed up)

BFGS stepping has contracted, resetting BFGS Hessian

Iteration 3: f(p) = 484315.37 (backed up)

Iteration 4: f(p) = 405857.09Iteration 5: f(p) = 178973.06Iteration 6: f(p) = 171687.88

Iteration 7: f(p) = 158529.61Iteration 8: f(p) = 157387.12

Iteration 9: f(p) = 157373.97Iteration 10: f(p) = 157372.99Iteration 11: f(p) = 157372.99

Dependent variable: cn Running variable: elig_year Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-3265.4049	135894.95	738.63415	-140375.3	133844.49

95% One-sided Conf. intervals:

(-140375.3, Inf), (-Inf, 133844.49)

Bandwidth: 20.099852

Kernel: tri

Optimisation criterion: MSE

Std Error method: $\,$ nn

Number of effective observations: 17348.132

Maximum leverage for estimated parameter: .00039064

First-stage estimate: .47233987

Smootheness const. M [first-stage,reduced-form]: [.4,4]

```
59 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("tri")
                                                                opt_criterion("OCI") t0(0)
  Generating initial variance estimates via RDPrelimVar
  Bandwidth (h) missing or invalid. Running RDOptBW_fit
  numerical derivatives are approximate
  flat or discontinuous region encountered
                 f(p) = 3933.0647
  Iteration 0:
                 f(p) = 1785.8751
  Iteration 1:
                 f(p) = 1785.8751
  Iteration 2:
                                    (backed up)
  Iteration 3:
                 f(p) = 1255.8625
  Iteration 4:
                  f(p) = 1236.1203
                 f(p) = 1235.7964
  Iteration 5:
  Iteration 6:
                 f(p) = 1235.7961
  Iteration 7:
                 f(p) =
                         1235.796
   Dependent variable:
    Running variable: elig_year
   Treatment variable:
                         retired
    Estimate
                 Maximum Bias
                                Std. Error
                                                [95% Conf.
                                                              intervals]
   -2669.312
                 90025.25
                                               -94046,704
                                                              88708.08
                                822.04379
   95% One-sided Conf. intervals:
    (-94046.704, Inf),
                       (-Inf, 88708.08)
    Bandwidth: 17.472884
   Kernel: tri
   Optimisation criterion: OCI
   OCI with beta .8
   Std Error method: nn
   Number of effective observations: 15268.11
   Maximum leverage for estimated parameter: .00045141
   First-stage estimate: .45989058
   Smootheness const. M [first-stage,reduced-form]: [.4,4]
60 . rdhonestV2 cn (retired=elig_year), m(4 0.4) kernel("tri")
                                                                 opt_criterion("FLCI") t0(0)
  Generating initial variance estimates via RDPrelimVar
  Bandwidth (h) missing or invalid. Running RDOptBW_fit
  numerical derivatives are approximate
  flat or discontinuous region encountered
  Iteration 0:
                 f(p) = 3087.6663
  Iteration 1:
                 f(p) =
                          1363.993
  Iteration 2:
                 f(p) =
                          1363.993 (backed up)
  BFGS stepping has contracted, resetting BFGS Hessian
  Iteration 3:
                 f(p) =
                          1363.993 (backed up)
  Iteration 4:
                 f(p) =
                         998.52988
                         797.3846
  Iteration 5:
                 f(p) =
                          797.3846
  Iteration 6:
                 f(p) =
                                    (backed up)
  BFGS stepping has contracted, resetting BFGS Hessian
  Iteration 7:
                 f(p) = 797.3846 (backed up)
  Iteration 8:
                  f(p) = 771.17857
  Iteration 9:
                 f(p) = 771.10221
  Iteration 10:
                 f(p) =
                          770.8924
  Iteration 11: f(p) = 770.89237
```

Thursday August 11 15:17:29 2022 Page 10

Dependent variable: cn Running variable: elig_year Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]	
-3477.2608	154182.03	717.9896	-158840.28	151885.76	

95% One-sided Conf. intervals:

(-158840.28, Inf), (-Inf, 151885.76) Bandwidth: 20.851846

Kernel: **tri**

Optimisation criterion: FLCI

Std Error method: nn

Number of effective observations: 18111.213

Maximum leverage for estimated parameter: .00037476

First-stage estimate: .47480627

Smootheness const. M [first-stage, reduced-form]: [.4,4]

61 .

62 . // 2.2.1 tri kernel + optimal h + without M + est_w saved as wgt

63 . rdhonestV2 cn (retired=elig_year), kernel("tri") t0(0) est_w("wgt") Generating initial variance estimates via RDPrelimVar

Smoothing class constant M missing or invalid. Running MROT_fit

Bandwidth (h) missing or invalid. Running RDOptBW_fit

numerical derivatives are approximate flat or discontinuous region encountered

Iteration 0: f(p) = 2499803.8Iteration 1:

f(p) = 712295.26 f(p) = 712295.26Iteration 2: (backed up) f(p) = 712295.26 (backed up) Iteration 3:

Iteration 4: f(p) = 712295.26 (backed up)

 ${\tt BFGS}$ stepping has contracted, resetting ${\tt BFGS}$ Hessian

f(p) = 712295.26 (backed up) Iteration 5:

f(p) = 712295.26Iteration 6:

Iteration 7: f(p) = 712295.26 (backed up)

BFGS stepping has contracted, resetting BFGS Hessian

f(p) = 712295.26 (backed up) Iteration 8: Iteration 9: f(p) = 712295.26 (backed up)

Iteration 10: f(p) = 711712.78Iteration 11: f(p) = 711708.1Iteration 12: f(p) = 711707.39Iteration 13: f(p) = 711707.39

Dependent variable: Running variable: elig_year Treatment variable: retired

Estimate	Maximum Bias	Std. Error	[95% Conf.	intervals]
-4006.2949	2166.6097	2298.5236	-9958.2416	1945.6518

95% One-sided Conf. intervals:

(-9953.6396, Inf), (-Inf, 1941.0497)

Bandwidth: 6.5283045

Kernel: tri

Optimisation criterion: MSE

Std Error method: nn

Number of effective observations: 4968.8428

Maximum leverage for estimated parameter: .00107721

First-stage estimate: .31992201

Smootheness const. M [first-stage, reduced-form]: [.00817893,67.232053]

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Thursday August 11 15:17:29 2022 Page 11
```

64 . 65 . 66 . log close

name: <unnamed>

log: C:\Users\Administrator\Downloads\new downloads\RA for Tim\RDHonestStata\Version 2\rdhonest.txt log type: smcl closed on: 11 Aug 2022, 15:17:13

end of do-file

68 .