Statistics/Data Analysis

```
      name:  <unnamed>
       log:  C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconom
> etrics\fdimatching_clean\03_log\04a_Robustness.smcl
  log type:  smcl
 opened on:  30 Mar 2020, 09:59:51

1 .
2 .                         do $scripts\04a_Robustness

3 . /*******************************************************************************
  >                                                    ROBUSTNESS CHECKS DO-FILE
  > *******************************************************************************
  >
  >                         Applied Microeconometrics
  >
  >                                        Empirical Project
  >
  >                                                    Do-File 04a
  >
  >         PURPOSE:        Perform robustness checks
  >
  >         OUTLINE:        PART 1: Treatment effects for different TECH-levels (TFP)
  >                                 PART 2: Treatment effects for different TECH-levels
  > (wages)
  >
  >
  >
  > *******************************************************************************
  >                         PART 1: Treatment effects for different TECH-levels (TFP)
  > *******************************************************************************/
4 . /*
  >                 - All models use probit and nneigghbor (3) and no interactions
  >                 - with nn5 and caliper .05 would need to drop too many variables
  >                 --> in general not useful to divide into TECH subsamples
  >             */
5 .
6 . *------------------------------------------------------------------------------*
7 . *       PART 1.1: Probit w/o TECH, using 5NN and Caliper
8 . *------------------------------------------------------------------------------*
9 .
10. ** TECH==1
11. *----------
12.         cap drop osa1

13.         cap drop p1*

14.         teffects psmatch (TFP2017) ///
  >                                         (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                          logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==1,  ///
  >                                          nneighbor(3) osample(osa1) generate(p1)

Treatment-effects estimation                   Number of obs      =      4,194
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                  min =          3
Treatment model: probit                                    max =          3
------------------------------------------------------------------------------
             |               AI Robust
     TFP2017 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ATE          |
      FDI2016 |
    (1 vs 0) |   .1382817   .2687846     0.51   0.607    -.3885264    .6650898
------------------------------------------------------------------------------
```

```
15.
16.         teffects overlap, ptlevel(1) saving($results\04_Robustness\TFP_5NNCal_TECH1.
  > gph, replace)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH1.gph saved)

17.         graph export $results\04_Robustness\TFP_5NNCal_TECH1.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH1.pdf written in PDF forma
  > t)

18.         // bad overlap
19.
20.         tebalance summarize

    Covariate balance summary
                                                  Raw              Matched
    ------------------------------------------------------------------------
    Number of obs =                         4,194                    8,388
    Treated obs   =                         2,325                    4,194
    Control obs   =                         1,869                    4,194
    ------------------------------------------------------------------------

    ------------------------------------------------------------------------
                        |  Standardized differences      Variance ratio
                        |        Raw     Matched           Raw     Matched
    --------------------+---------------------------------------------------
                    OWN |
      Subsidiaries      |    .0299781   -.1459848       1.036398   .8303704
       Independent      |    .0057604    .0429751       1.001373   .9957807
             State      |   -.0250578    .0944441       .9786308    1.12783
                        |
              PORT      |    .0611895   -.0226083       .9611867   1.002617
       logwages2015     |   -.0219915   -.0878341       1.012966   1.352237
            TFP2015     |    .0072539   -.0904062       .9676072   1.231927
          logemp2015    |    .1323588   -.4324184       .8437902   .9971546
         DEBTS2015      |   -.0474876     .199643       1.031416   1.028165
           EXP2015      |    1.557713    .2879349       1.954182   2.432269
            RD2015      |    .0165825   -.4523663       1.041031    .466799
    ------------------------------------------------------------------------

21.         // SD very bad
22.
23. ** TECH==2
24. *----------
25.         cap drop osa1

26.         cap drop p1*

27.         cap teffects psmatch (TFP2017) ///
  >                                         (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                          logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==2,  ///
  >                                          nneighbor(3) osample(osa1) generate(p1)

28.         teffects psmatch (TFP2017) ///
  >                                         (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                          logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==2 & osa1==0,        ///
  >                                          nneighbor(3) generate(p1)
```

```
Treatment-effects estimation                    Number of obs      =      1,679
Estimator      : propensity-score matching      Matches: requested =          3
Outcome model  : matching                                      min =          3
Treatment model: probit                                        max =          3
```

TFP2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	**.8852078**	**.4098126**	**2.16**	**0.031**	**.0819899**	**1.688426**

```
29.
30.
31.         teffects overlap, ptlevel(1) saving($results\04_Robustness\TFP_5NNCal_TECH2.
  > gph, replace)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH2.gph saved)

32.         graph export $results\04_Robustness\TFP_5NNCal_TECH2.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH2.pdf written in PDF forma
  > t)

33.         // bad overlap
34.
35.         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**1,679**	**3,358**
Treated obs =	**778**	**1,679**
Control obs =	**901**	**1,679**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	**-.0793954**	**-.2257361**	**.9050206**	**.7147904**
Independent	**.0335636**	**.5374598**	**1.014469**	**1.136939**
State	**.0928413**	**-.3390481**	**1.080196**	**.7563372**
PORT	**.1821758**	**-.3342938**	**1.433746**	**.584444**
logwages2015	**-.0292601**	**.0725108**	**.9177524**	**2.013748**
TFP2015	**-.1473483**	**.3176451**	**.9349423**	**.7690033**
logemp2015	**.5931748**	**-.3958534**	**.7079079**	**.4281975**
DEBTS2015	**-.0381321**	**-.0708779**	**.9517235**	**.7109844**
EXP2015	**1.70664**	**.1010007**	**1.63636**	**1.068403**
RD2015	**.0199144**	**.2775455**	**1.045988**	**1.822982**

```
36.         // SD very bad
37.
38.
39. ** TECH==3
40. *----------
```

```
41.         cap drop osa1

42.         cap drop p1*

43.         cap teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==3,  ///
  >                                       nneighbor(3) osample(osa1) generate(p1)

44.         teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==3 & osa1==0,        ///
  >                                       nneighbor(3) generate(p1)

Treatment-effects estimation                   Number of obs      =      3,205
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                      min =          3
Treatment model: probit                                        max =          3
```

TFP2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	**1.711486**	**.3041076**	**5.63**	**0.000**	**1.115446**	**2.307526**

```
45.
46.         teffects overlap, ptlevel(1) saving($results\04_Robustness\TFP_5NNCal_TECH3.
  > gph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH3.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH3.gph saved)

47.         graph export $results\04_Robustness\TFP_5NNCal_TECH3.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH3.pdf written in PDF forma
  > t)

48.         // bad overlap
49.
50.         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**3,205**	**6,410**
Treated obs =	**1,093**	**3,205**
Control obs =	**2,112**	**3,205**

	Standardized differences Raw	Matched	Variance ratio Raw	Matched
OWN				
Subsidiaries	**-.1234736**	**.1209775**	**.8498094**	**1.17212**
Independent	**.0029747**	**-.2869497**	**1.001282**	**.8317982**
State	**.1397257**	**.1863583**	**1.132847**	**1.091034**
PORT	**.26598**	**.2930677**	**1.508242**	**1.264622**
logwages2015	**.0173021**	**-.1495607**	**.9932722**	**.9224528**
TFP2015	**-.190123**	**.5556515**	**.9260253**	**2.005478**
logemp2015	**.7811806**	**-.3235282**	**.6931161**	**.3796084**
DEBTS2015	**-.0437663**	**.3089159**	**1.057607**	**1.47068**
EXP2015	**1.701486**	**.6923078**	**1.304434**	**.7575751**
RD2015	**.0664698**	**-.2207988**	**1.152626**	**.6186661**

```
51.         // SD very bad
52.
53.
54. ** TECH==4
55. *----------
56.         cap drop osa1

57.         cap drop p1*

58.         cap teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==4,  ///
  >                                       nneighbor(3) osample(osa1) generate(p1)

59.         teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit)if TECH==4 & osa1==0,        ///
  >                                       nneighbor(3) generate(p1)
  note: variance correction results in a negative variance estimate; ignoring the
        correction term

  Treatment-effects estimation                   Number of obs      =      1,264
  Estimator      : propensity-score matching     Matches: requested =          3
  Outcome model  : matching                                      min =          3
  Treatment model: probit                                        max =          3
  ------------------------------------------------------------------------------
               |               AI Robust
       TFP2017 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
  -------------+----------------------------------------------------------------
  ATE          |
       FDI2016 |
      (1 vs 0) |  -.3133928   .2715818    -1.15   0.249    -.8456834    .2188977
  ------------------------------------------------------------------------------

60.
61.         teffects overlap, ptlevel(1) saving($results\04_Robustness\TFP_5NNCal_TECH4.
  > gph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH4.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH4.gph saved)

62.         graph export $results\04_Robustness\TFP_5NNCal_TECH4.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_5NNCal_TECH4.pdf written in PDF forma
  > t)

63.         // bad overlap
64.
65.         tebalance summarize

    Covariate balance summary
                                              Raw              Matched
    ------------------------------------------------------------------
    Number of obs =                         1,264                2,528
    Treated obs   =                           239                1,264
    Control obs   =                         1,025                1,264
    ------------------------------------------------------------------
```

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	-.0731132	-.0147977	.8911079	.982208
Independent	.0073223	-.2914239	1.008746	.6873099
State	.1506956	.296785	1.211799	1.428616
PORT	.4822657	-.2451265	1.632999	.683005
logwages2015	-.0799494	.174733	1.058831	.6261957
TFP2015	-.1241814	-.3158725	.9731298	.4734144
logemp2015	1.01428	.2347556	.7598335	.4642713
DEBTS2015	-.1438462	.3183089	1.115811	1.022106
EXP2015	1.604725	.1756002	1.557947	.814425
RD2015	.0901895	-.1500458	1.228973	.6359217

```
66.         // SD very bad
67.
68.
69. *-------------------------------------------------------------------------------*
70. *       PART 1.2: Probit w/o TECH including interactions, using 3NN
71. *-------------------------------------------------------------------------------*
72.
73. ** TECH==1
74. *----------
75.         cap drop osa1

76.         cap drop p1*

77.         global D "OWN PORT" /*TECH*/

78.         global C "logwages2015 TFP2015 logemp2015 DEBTS2015 EXP2015 RD2015"

79.         cap teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.($D)##c.($C), probit) if TECH==1
  > ,   ///
  >                                       nneighbor(3) osample(osa1) generate(p1)

80.         teffects psmatch (TFP2017) ///
  >                                      (FDI2016 i.($D)##c.($C), probit) if TECH==1
  >  & osa1==0, ///
  >                                       nneighbor(3) generate(p1)
```

```
Treatment-effects estimation                   Number of obs      =      4,169
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                     min =          3
Treatment model: probit                                       max =          3
```

TFP2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	-.2873912	.3512517	-0.82	0.413	-.9758319	.4010495

```
81.
82.
```

```
83.         teffects overlap, ptlevel(1) saving($results\04_Robustness\TFP_3NN#dc_TECH1.
  > gph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\TFP_3NN#dc_TECH1.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_3NN#dc_TECH1.gph saved)

84.         graph export $results\04_Robustness\TFP_3NN#dc_TECH1.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\TFP_3NN#dc_TECH1.pdf written in PDF forma
  > t)

85.         // bad overlap
86.
87.         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**4,169**	**8,338**
Treated obs =	**2,316**	**4,169**
Control obs =	**1,853**	**4,169**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	**.0274143**	**.0981279**	**1.032951**	**1.167319**
Independent	**.0016176**	**.2322468**	**1.000289**	**1.023869**
State	**-.0282953**	**-.3353479**	**.9761842**	**.776527**
PORT				
Ports within~m	**.060241**	**-.2243623**	**.9619448**	**1.067787**
logwages2015	**-.0187879**	**.0180795**	**1.014544**	**1.738795**
TFP2015	**.0065551**	**-.3034647**	**.9665043**	**.7903574**
logemp2015	**.1253704**	**-.0341239**	**.8518181**	**.9342653**
DEBTS2015	**-.0448262**	**-.2078112**	**1.028607**	**1.289815**
EXP2015	**1.55224**	**.1608447**	**1.924586**	**1.932237**
RD2015	**.0149436**	**-.4830068**	**1.036717**	**.4260918**
OWN# logwages2015				
Subsidiaries	**.0090678**	**.0883235**	**.9917854**	**1.246037**
Independent	**.0004239**	**.2628619**	**.9994187**	**1.578229**
State	**-.0375481**	**-.3966641**	**.950555**	**.6183771**
OWN# TFP2015				
Subsidiaries	**.0155642**	**.0520744**	**.992061**	**1.074582**
Independent	**-.0239632**	**.1973065**	**.9714814**	**1.236298**
State	**.0177105**	**-.5093586**	**1.018915**	**.3423355**
OWN# logemp2015				
Subsidiaries	**.0575978**	**.0882121**	**1.076401**	**1.159406**
Independent	**.0773797**	**-.1007968**	**1.058402**	**.8814914**
State	**-.0071547**	**-.0096074**	**.9752406**	**.9244812**
OWN# DEBTS2015				
Subsidiaries	**-.0266279**	**.0461008**	**.8990742**	**1.049029**
Independent	**-.02299**	**.0912236**	**.9480144**	**1.273759**
State	**-.0088845**	**-.2713117**	**1.018366**	**.901762**
OWN# EXP2015				
Subsidiaries	**.3536599**	**.2330154**	**3.516162**	**2.273069**
Independent	**.4944911**	**.2541485**	**3.50139**	**2.098064**
State	**.344032**	**-.255141**	**3.147261**	**.9049133**

OWN# RD2015				
Subsidiaries	.0360806	.0278612	1.225676	1.195674
Independent	.0005448	-.3427434	1.002291	.3115793
State	-.0055253	-.3520467	.9740626	.2815906
PORT# logwages2015				
Ports within~m	.0303154	-.2719386	.9850168	.9262533
PORT# TFP2015				
Ports within~m	.0571856	-.4057072	1.00119	.6039034
PORT# logemp2015				
Ports within~m	.0732937	.0692814	1.000195	1.007943
PORT# DEBTS2015				
Ports within~m	.0246213	-.2866555	1.014688	.9158055
PORT# EXP2015				
Ports within~m	.8048592	.0566622	2.741504	1.494336
PORT# RD2015				
Ports within~m	.009008	-.3038563	1.029227	.4292447

```
88.         // SD very bad
89.
90.         // no point in running interaction model with other subsamples
91.
92.
93.
94. ********************************************************************************
95. *                       PART 2: Treatment effects for different TECH-levels (wages)
96. ********************************************************************************/
97.
98. *-------------------------------------------------------------------------------*
99. *       PART 2.1: Probit w/o TECH, using 3NN
100 *-------------------------------------------------------------------------------*
101
102 ** TECH==1
103 *----------
104         cap drop osa1

105         cap drop p1*

106         teffects psmatch (logwages2017) ///
  >                                        (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                         logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==1, ///
  >                                         nneighbor(3) osample(osa1) generate(p1)

Treatment-effects estimation                   Number of obs      =      4,194
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                      min =          3
Treatment model: probit                                        max =          3
```

logwages2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	-1.059256	.1645217	-6.44	0.000	-1.381712	-.736799

```
107
108         teffects overlap, ptlevel(1) saving($results\04_Robustness\WAGES_3NN_TECH1.g
  > ph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH1.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH1.gph saved)

109         graph export $results\04_Robustness\WAGES_3NN_TECH1.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH1.pdf written in PDF format
  > )

110         // bad overlap
111
112         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**4,194**	**8,388**
Treated obs =	**2,325**	**4,194**
Control obs =	**1,869**	**4,194**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	**.0299781**	**-.1459848**	**1.036398**	**.8303704**
Independent	**.0057604**	**.0429751**	**1.001373**	**.9957807**
State	**-.0250578**	**.0944441**	**.9786308**	**1.12783**
PORT	**.0611895**	**-.0226083**	**.9611867**	**1.002617**
logwages2015	**-.0219915**	**-.0878341**	**1.012966**	**1.352237**
TFP2015	**.0072539**	**-.0904062**	**.9676072**	**1.231927**
logemp2015	**.1323588**	**-.4324184**	**.8437902**	**.9971546**
DEBTS2015	**-.0474876**	**.199643**	**1.031416**	**1.028165**
EXP2015	**1.557713**	**.2879349**	**1.954182**	**2.432269**
RD2015	**.0165825**	**-.4523663**	**1.041031**	**.466799**

```
113         // SD very bad
114
115 ** TECH==2
116 *----------
117         cap drop osa1

118         cap drop p1*

119         cap teffects psmatch (logwages2017) ///
  >                                     (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                      logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==2, ///
  >                                      nneighbor(3) osample(osa1) generate(p1)

120         teffects psmatch (logwages2017) ///
  >                                     (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                      logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==2 & osa1==0,       ///
  >                                      nneighbor(3) generate(p1)
```

```
Treatment-effects estimation                    Number of obs      =      1,679
Estimator      : propensity-score matching      Matches: requested =          3
Outcome model  : matching                                      min =          3
Treatment model: probit                                        max =          3
```

logwages2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	**-1.024099**	**.1382784**	**-7.41**	**0.000**	**-1.295119**	**-.7530782**

```
121
122         teffects overlap, ptlevel(1) saving($results\04_Robustness\WAGES_3NN_TECH2.g
  > ph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH2.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH2.gph saved)

123         graph export $results\04_Robustness\WAGES_3NN_TECH2.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH2.pdf written in PDF format
  > )

124         // bad overlap
125
126         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**1,679**	**3,358**
Treated obs =	**778**	**1,679**
Control obs =	**901**	**1,679**

	Standardized differences Raw	Matched	Variance ratio Raw	Matched
OWN				
Subsidiaries	**-.0793954**	**-.2257361**	**.9050206**	**.7147904**
Independent	**.0335636**	**.5374598**	**1.014469**	**1.136939**
State	**.0928413**	**-.3390481**	**1.080196**	**.7563372**
PORT	**.1821758**	**-.3342938**	**1.433746**	**.584444**
logwages2015	**-.0292601**	**.0725108**	**.9177524**	**2.013748**
TFP2015	**-.1473483**	**.3176451**	**.9349423**	**.7690033**
logemp2015	**.5931748**	**-.3958534**	**.7079079**	**.4281975**
DEBTS2015	**-.0381321**	**-.0708779**	**.9517235**	**.7109844**
EXP2015	**1.70664**	**.1010007**	**1.63636**	**1.068403**
RD2015	**.0199144**	**.2775455**	**1.045988**	**1.822982**

```
127         // SD very bad
128
129 ** TECH==3
130 *----------
```

```
131         cap drop osa1

132         cap drop p1*

133         cap teffects psmatch (logwages2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==3, ///
  >                                       nneighbor(3) osample(osa1) generate(p1)

134         teffects psmatch (logwages2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==3 & osa1==0,       ///
  >                                       nneighbor(3) generate(p1)

Treatment-effects estimation                   Number of obs      =      3,205
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                  min =          3
Treatment model: probit                                    max =          3
```

logwages2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	**-.7711815**	**.3142929**	**-2.45**	**0.014**	**-1.387184**	**-.1551787**

```
135
136
137         teffects overlap, ptlevel(1) saving($results\04_Robustness\WAGES_3NN_TECH3.g
  > ph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH3.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH3.gph saved)

138         graph export $results\04_Robustness\WAGES_3NN_TECH3.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH3.pdf written in PDF format
  > )

139         // bad overlap
140
141         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**3,205**	**6,410**
Treated obs =	**1,093**	**3,205**
Control obs =	**2,112**	**3,205**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	**-.1234736**	**.1209775**	**.8498094**	**1.17212**
Independent	**.0029747**	**-.2869497**	**1.001282**	**.8317982**
State	**.1397257**	**.1863583**	**1.132847**	**1.091034**
PORT	**.26598**	**.2930677**	**1.508242**	**1.264622**
logwages2015	**.0173021**	**-.1495607**	**.9932722**	**.9224528**
TFP2015	**-.190123**	**.5556515**	**.9260253**	**2.005478**
logemp2015	**.7811806**	**-.3235282**	**.6931161**	**.3796084**
DEBTS2015	**-.0437663**	**.3089159**	**1.057607**	**1.47068**
EXP2015	**1.701486**	**.6923078**	**1.304434**	**.7575751**
RD2015	**.0664698**	**-.2207988**	**1.152626**	**.6186661**

```
142         // SD very bad
143
144 ** TECH==4
145 *----------
146         cap drop osa1

147         cap drop p1*

148         cap teffects psmatch (logwages2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==4, ///
  >                                       nneighbor(3) osample(osa1) generate(p1)

149         teffects psmatch (logwages2017) ///
  >                                      (FDI2016 i.OWN /*i.TECH*/ PORT ///
  >                                       logwages2015 TFP2015 logemp2015 DEBTS2015
  > EXP2015 RD2015, probit) if TECH==4 & osa1==0,       ///
  >                                       nneighbor(3) generate(p1)
  note: variance correction results in a negative variance estimate; ignoring the
        correction term

  Treatment-effects estimation                   Number of obs      =      1,264
  Estimator      : propensity-score matching     Matches: requested =          3
  Outcome model  : matching                                  min =          3
  Treatment model: probit                                    max =          3
```

logwages2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	**1.046985**	**.91633**	**1.14**	**0.253**	**-.7489886**	**2.842959**

```
150
151
152         teffects overlap, ptlevel(1) saving($results\04_Robustness\WAGES_3NN_TECH4.g
  > ph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH4.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH4.gph saved)

153         graph export $results\04_Robustness\WAGES_3NN_TECH4.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN_TECH4.pdf written in PDF format
  > )

154         // bad overlap
155
156         tebalance summarize

    Covariate balance summary
```

	Raw	Matched
Number of obs =	**1,264**	**2,528**
Treated obs =	**239**	**1,264**
Control obs =	**1,025**	**1,264**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	-.0731132	-.0147977	.8911079	.982208
Independent	.0073223	-.2914239	1.008746	.6873099
State	.1506956	.296785	1.211799	1.428616
PORT	.4822657	-.2451265	1.632999	.683005
logwages2015	-.0799494	.174733	1.058831	.6261957
TFP2015	-.1241814	-.3158725	.9731298	.4734144
logemp2015	1.01428	.2347556	.7598335	.4642713
DEBTS2015	-.1438462	.3183089	1.115811	1.022106
EXP2015	1.604725	.1756002	1.557947	.814425
RD2015	.0901895	-.1500458	1.228973	.6359217

```
157         // SD very bad
158
159
160 *-------------------------------------------------------------------------------*
161 *       PART 2.2: Probit w/o TECH including interactions, using 3NN
162 *-------------------------------------------------------------------------------*
163 ** TECH==1
164 *----------
165         cap drop osa1

166         cap drop p1*

167         global D "OWN PORT" /*TECH*/

168         global C "logwages2015 TFP2015 logemp2015 DEBTS2015 EXP2015 RD2015"

169         cap teffects psmatch (logwages2017) ///
  >                                     (FDI2016 i.($D)##c.($C), probit) if TECH==1
  > ,   ///
  >                                      nneighbor(3) osample(osa1) generate(p1)

170         teffects psmatch (logwages2017) ///
  >                                     (FDI2016 i.($D)##c.($C), probit) if TECH==1
  >  & osa1==0, ///
  >                                      nneighbor(3) generate(p1)

Treatment-effects estimation                   Number of obs      =      4,169
Estimator      : propensity-score matching     Matches: requested =          3
Outcome model  : matching                                   min =          3
Treatment model: probit                                     max =          3
```

logwages2017	Coef.	AI Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ATE						
FDI2016 (1 vs 0)	.1059448	.1448723	0.73	0.465	-.1779996	.3898892

```
171
172
173         teffects overlap, ptlevel(1) saving($results\04_Robustness\WAGES_3NN#dc_TECH
  > 1.gph, replace)
  (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
  > trics\fdimatching_clean\04_results\04_Robustness\WAGES_3NN#dc_TECH1.gph not found)
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN#dc_TECH1.gph saved)
```

```
174         graph export $results\04_Robustness\WAGES_3NN#dc_TECH1.pdf, as(pdf) replace
  (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
  > fdimatching_clean\04_results\04_Robustness\WAGES_3NN#dc_TECH1.pdf written in PDF for
  > mat)

175         // bad overlap
176
177         tebalance summarize
```

Covariate balance summary

	Raw	Matched
Number of obs =	**4,169**	**8,338**
Treated obs =	**2,316**	**4,169**
Control obs =	**1,853**	**4,169**

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	**.0274143**	**.0981279**	**1.032951**	**1.167319**
Independent	**.0016176**	**.2322468**	**1.000289**	**1.023869**
State	**-.0282953**	**-.3353479**	**.9761842**	**.776527**
PORT				
Ports within~m	**.060241**	**-.2243623**	**.9619448**	**1.067787**
logwages2015	**-.0187879**	**.0180795**	**1.014544**	**1.738795**
TFP2015	**.0065551**	**-.3034647**	**.9665043**	**.7903574**
logemp2015	**.1253704**	**-.0341239**	**.8518181**	**.9342653**
DEBTS2015	**-.0448262**	**-.2078112**	**1.028607**	**1.289815**
EXP2015	**1.55224**	**.1608447**	**1.924586**	**1.932237**
RD2015	**.0149436**	**-.4830068**	**1.036717**	**.4260918**
OWN# logwages2015				
Subsidiaries	**.0090678**	**.0883235**	**.9917854**	**1.246037**
Independent	**.0004239**	**.2628619**	**.9994187**	**1.578229**
State	**-.0375481**	**-.3966641**	**.950555**	**.6183771**
OWN# TFP2015				
Subsidiaries	**.0155642**	**.0520744**	**.992061**	**1.074582**
Independent	**-.0239632**	**.1973065**	**.9714814**	**1.236298**
State	**.0177105**	**-.5093586**	**1.018915**	**.3423355**
OWN# logemp2015				
Subsidiaries	**.0575978**	**.0882121**	**1.076401**	**1.159406**
Independent	**.0773797**	**-.1007968**	**1.058402**	**.8814914**
State	**-.0071547**	**-.0096074**	**.9752406**	**.9244812**
OWN# DEBTS2015				
Subsidiaries	**-.0266279**	**.0461008**	**.8990742**	**1.049029**
Independent	**-.02299**	**.0912236**	**.9480144**	**1.273759**
State	**-.0088845**	**-.2713117**	**1.018366**	**.901762**
OWN# EXP2015				
Subsidiaries	**.3536599**	**.2330154**	**3.516162**	**2.273069**
Independent	**.4944911**	**.2541485**	**3.50139**	**2.098064**
State	**.344032**	**-.255141**	**3.147261**	**.9049133**
OWN# RD2015				
Subsidiaries	**.0360806**	**.0278612**	**1.225676**	**1.195674**
Independent	**.0005448**	**-.3427434**	**1.002291**	**.3115793**
State	**-.0055253**	**-.3520467**	**.9740626**	**.2815906**

PORT# logwages2015 Ports within~m	.0303154	-.2719386	.9850168	.9262533
PORT# TFP2015 Ports within~m	.0571856	-.4057072	1.00119	.6039034
PORT# logemp2015 Ports within~m	.0732937	.0692814	1.000195	1.007943
PORT# DEBTS2015 Ports within~m	.0246213	-.2866555	1.014688	.9158055
PORT# EXP2015 Ports within~m	.8048592	.0566622	2.741504	1.494336
PORT# RD2015 Ports within~m	.009008	-.3038563	1.029227	.4292447

```
178         // SD very bad
179
180         // no point in running interaction model with other subsamples
181
182
  end of do-file

183
184         log close
       name:  <unnamed>
        log:  C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconom
> etrics\fdimatching_clean\03_log\04a_Robustness.smcl
   log type:  smcl
  closed on:  30 Mar 2020, 10:00:33
```