



```

name: <unnamed>
log: C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconom
> etrics\fdimatching_clean\03_log\03b_NNM.smcl
log type: smcl
opened on: 30 Mar 2020, 10:18:17

1 .
2 . do $scripts\03b_NNM

3 . /*****
> NNM DO-FILE
> *****/
>
> Applied Microeconometrics
>
> Empirical Project
>
> Do-File 03b
>
> PURPOSE: Perform Nearest-Neighbour Matching
>
> OUTLINE: PART 1: NN
> PART 2: 5NN and Caliper
>
> *****/
> PART 1: NN
> *****/
4 .
5 .
6 .
7 .
8 . *****/
9 . * PART 2: 5NN and Caliper .05 [WAGES]
10. *****/
11.
12. // All specifications probit without TECH
13.
14. // Setting globals for interaction terms
15. global D "OWN PORT" /*TECH*/

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

17.
18.
19. *-----*
20. * PART 2.1: No interactions
21. *-----*
>
22.
23. cap drop osa1
24. cap drop p1*
25. cap teffects psmatch (logwages2017) ///
> (FDI2016 i.OWN /*i.TECH*/ PORT ///
> logwages2015 TFP2015 logemp2015 DEBTS2015
> EXP2015 RD2015, probit), ///
> nneighbor(5) caliper(.05) osample(osa1) ge
> nerate(p1)

```

```

26.                                     // 5 observations violate caliper
27.
28.      // Reestimate
29.      teffects psmatch (logwages2017) ///
>                                     (FDI2016 i.OWN /*i.TECH*/ PORT ///
>                                     logwages2015 TFP2015 logemp2015 DEBTS2015
> EXP2015 RD2015, probit) if osal==0, ///
>                                     nneighbor(5) caliper(.05) generate(p1)

```

```

Treatment-effects estimation      Number of obs      =      11,318
Estimator      : propensity-score matching      Matches: requested =      5
Outcome model  : matching                      min =      5
Treatment model: probit                        max =      5

```

logwages2017	Coef.	AI Robust Std. Err.	z	P> z	[95% Conf. Interval]	
ATE						
FDI2016 (1 vs 0)	.1754479	.0505184	3.47	0.001	.0764336	.2744622

```

30.
31.      teffects overlap, ptlevel(1) saving($results\03b_NNM\WAGES_overl_nn5.gph, re
> place)
(note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl Microeconome
> trics\fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5.gph not found)
(file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl Microeconometrics\
> fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5.gph saved)

32.      graph export $results\03b_NNM\WAGES_overl_nn5.pdf, as(pdf) replace
(file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl Microeconometrics\
> fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5.pdf written in PDF format)

33.      // Much better overlap
34.
35.      tebalance summarize

```

Covariate balance summary

	Raw	Matched
Number of obs =	11,318	22,636
Treated obs =	4,455	11,318
Control obs =	6,863	11,318

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	-.017745	-.021861	.9777435	.9720446
Independent	.0607725	.0404463	1.022941	1.013877
State	.1019068	-.0105252	1.101192	.9898484
PORT				
logwages2015	.4080401	-.0565211	1.253393	.9660522
TFP2015	-.1304697	.0237976	.9770303	1.030274
logemp2015	-.1782597	-.0058852	.9467758	.9253711
DEBTS2015	.5643285	-.0201877	.8025543	.7817208
EXP2015	-.0528734	-.0233852	1.05198	1.027651
RD2015	1.013003	.0053868	1.219875	1.038128
	.0360809	.0505942	1.086808	1.120229

```

36.          // SD way below 10% for all variables. VR fine.
37.
38.
39. *-----*
40. *      PART 2.2: Including interactions #dc
41. *-----*
>
42.
43.      cap drop osal
44.
45.      cap drop p1*
46.
47.      cap teffects psmatch (logwages2017) ///
48.          (FDI2016 i.($D)##c.($C), probit),
49.          ///
50.          nneighbor(5) caliper(.05) osample(
51.          > osal) generate(p1)
52.
53.          // 2 observation with pscore too 1
54.          > ow
55.
56.      // Reestimate
57.      teffects psmatch (logwages2017) ///
58.          (FDI2016 i.($D)##c.($C), probit) if osal==0
59.          , ///
60.          nneighbor(5) caliper(.05) generate(p1)

```

Treatment-effects estimation

Number of obs	=	11,321
Estimator : propensity-score matching	Matches: requested	= 5
Outcome model : matching	min	= 5
Treatment model: probit	max	= 5

logwages2017	Coef.	AI Robust Std. Err.	z	P> z	[95% Conf. Interval]	
ATE						
FDI2016 (1 vs 0)	.2723624	.0574634	4.74	0.000	.1597363	.3849886

```

50.
51.      teffects overlap, ptlevel(1) saving($results\03b_NNM\WAGES_overl_nn5#cd.gph,
52.      > replace)
53.      (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
54.      > trics\fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5#cd.gph not found)
55.      (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
56.      > fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5#cd.gph saved)
57.
58.      graph export $results\03b_NNM\WAGES_overl_nn5#cd.pdf, as(pdf) replace
59.      (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
60.      > fdimatching_clean\04_results\03b_NNM\WAGES_overl_nn5#cd.pdf written in PDF format)
61.
62.      // Much better overlap
63.
64.      tebalance summarize

```

Covariate balance summary

	Raw	Matched
Number of obs =	11,321	22,642
Treated obs =	4,460	11,321
Control obs =	6,861	11,321

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
OWN				
Subsidiaries	-.0185157	-.0499924	.976773	.9385947
Independent	.0613921	.0487345	1.023106	1.017769
State	.1014655	.0021243	1.100745	1.002083
PORT				
Ports within~m	.409102	-.068372	1.253367	.9561714
logwages2015	-.1297641	.029182	.9770245	1.025063
TFP2015	-.1786566	-.0083929	.9472155	.896301
logemp2015	.5649263	.0110223	.8040479	.7681937
DEBTS2015	-.0526963	-.010868	1.051023	.9793502
EXP2015	1.013969	-.0020575	1.228474	.9869131
RD2015	.0355449	.0326375	1.085493	1.076857
OWN#				
logwages2015				
Subsidiaries	-.0502922	-.0427654	.8785459	.9521715
Independent	.0093357	.0587529	.961353	1.107902
State	.0577039	.0119255	1.020326	1.006316
OWN#				
TFP2015				
Subsidiaries	-.0642849	-.0354238	.8274274	.8859574
Independent	-.0410761	.0378143	.88302	1.005072
State	.0556717	-.0083201	1.039947	.9226577
OWN#				
logemp2015				
Subsidiaries	.1397868	-.0314653	1.481855	.8710049
Independent	.2654727	.0278973	1.407492	.9606925
State	.2397237	.0072878	1.529212	.8497901
OWN#				
DEBTS2015				
Subsidiaries	-.0446082	-.0293482	.8859276	.9545898
Independent	-.015043	.0373904	.9652542	1.023368
State	.0839237	.0055029	1.078007	1.006458
OWN#				
EXP2015				
Subsidiaries	.2091835	-.0475405	2.149066	.8812693
Independent	.4016902	.0316902	2.429832	1.050778
State	.3627951	.0106222	2.655613	1.015458
OWN#				
RD2015				
Subsidiaries	.0127906	-.0021919	1.076262	.9872091
Independent	.0357023	.0235996	1.16033	1.102979
State	.0404793	.01295	1.223912	1.064697
PORT#				
logwages2015				
Ports within~m	.3126941	-.04888	1.296905	.945424
PORT#				
TFP2015				
Ports within~m	.2838364	-.0617006	1.300998	.9133844
PORT#				
logemp2015				
Ports within~m	.4109643	-.0321599	1.577238	.8670528
PORT#				
DEBTS2015				
Ports within~m	.301737	-.0582496	1.430794	.8927819
PORT#				

EXP2015				
Ports within~m	.653605	-.0313352	2.641051	.9269355
PORT#				
RD2015				
Ports within~m	.1184008	-.0165263	1.722386	.9232619

```

56. // SD way below 10% for all variables. VR fine.
57.
58.
59.
60. *****
61. * PART 3: 5NN and Caliper .05 [TFP]
62. *****
63.
64. *-----*
65. * PART 2.2: No interactions
66. *-----*
67.
68. cap drop osal
69. cap drop p1*
70. cap teffects psmatch (TFP2017) ///
    > (FDI2016 i.OWN /*i.TECH*/ PORT ///
    > logwages2015 TFP2015 logemp2015 DEBT
    > S2015 EXP2015 RD2015, probit), ///
    > nneighbor(5) caliper(.05) osample(os
    > a1) generate(p1)
71. // 5 observations violate caliper
72.
73. // Reestimate
74. teffects psmatch (TFP2017) ///
    > (FDI2016 i.OWN /*i.TECH*/ PORT ///
    > logwages2015 TFP2015 logemp2015 DEBTS2015
    > EXP2015 RD2015, probit) if osal==0, ///
    > nneighbor(5) caliper(.05) generate(p1)

Treatment-effects estimation      Number of obs      =      11,318
Estimator      : propensity-score matching      Matches: requested =      5
Outcome model  : matching                      min =      5
Treatment model: probit                      max =      5

```

TFP2017	Coef.	AI Robust Std. Err.	z	P> z	[95% Conf. Interval]	
ATE						
FDI2016 (1 vs 0)	.2978884	.0274913	10.84	0.000	.2440064	.3517704

```

75.
76. teffects overlap, ptlevel(1) saving($results\03b_NNM\TFP_overl_nn5.gph, repl
    > ace)
    (note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
    > trics\fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5.gph not found)
    (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
    > fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5.gph saved)

```

```

77.      graph export $results\03b_NNM\TFP_overl_nn5.pdf, as(pdf) replace
      (file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
      > fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5.pdf written in PDF format)

```

```

78.      // Much better overlap
79.
80.      tebalance summarize

```

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RD2015	.0360809	.0505942	1.086808	1.120229

```

81.      // SD way below 10% for all variables. VR fine.
82.
83. *-----*
84. *      PART 3.2: Including interactions #dc
85. *-----*
>
86.
87.      cap drop osal
88.
89.      cap drop p1*
89.      cap teffects psmatch (TFP2017) ///
>      (FDI2016 i.($D)##c.($C), probit),
>      ///
>      nneighbor(5) caliper(.05) osample(os
> a1) generate(p1)
90.
91.      // 2 observation with pscore too low
92.
93.      //Reesimate
93.      teffects psmatch (TFP2017) ///
>      (FDI2016 i.($D)##c.($C), probit) if osal==0
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```

```

Treatment-effects estimation      Number of obs      =      11,321
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Treatment model: probit      max =      5

```

	Coef.	AI Robust Std. Err.	z	P> z	[95% Conf. Interval]	
TFP2017						
ATE						
FDI2016 (1 vs 0)	.2824613	.0281968	10.02	0.000	.2271967	.337726

```

94.
95.      teffects overlap, plevel(1) saving($results\03b_NNM\TFP_overl_nn5#cd.gph, r
> eplace)
(note: file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconome
> trics\fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5#cd.gph not found)
(file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
> fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5#cd.gph saved)

96.      graph export $results\03b_NNM\TFP_overl_nn5#cd.pdf, as(pdf) replace
(file C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconometrics\
> fdimatching_clean\04_results\03b_NNM\TFP_overl_nn5#cd.pdf written in PDF format)

97.      // Much better overlap
98.
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```

Covariate balance summary

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logwages2015	-.1297641	.029182	.9770245	1.025063
TFP2015	-.1786566	-.0083929	.9472155	.896301
logemp2015	.5649263	.0110223	.8040479	.7681937
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RD2015	.0355449	.0326375	1.085493	1.076857
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Independent	.0093357	.0587529	.961353	1.107902
State	.0577039	.0119255	1.020326	1.006316
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TFP2015				
Subsidiaries	-.0642849	-.0354238	.8274274	.8859574
Independent	-.0410761	.0378143	.88302	1.005072
State	.0556717	-.0083201	1.039947	.9226577
OWN#				
logemp2015				
Subsidiaries	.1397868	-.0314653	1.481855	.8710049
Independent	.2654727	.0278973	1.407492	.9606925
State	.2397237	.0072878	1.529212	.8497901
OWN#				
DEBTS2015				
Subsidiaries	-.0446082	-.0293482	.8859276	.9545898
Independent	-.015043	.0373904	.9652542	1.023368
State	.0839237	.0055029	1.078007	1.006458
OWN#				
EXP2015				
Subsidiaries	.2091835	-.0475405	2.149066	.8812693
Independent	.4016902	.0316902	2.429832	1.050778
State	.3627951	.0106222	2.655613	1.015458

OWN#				
RD2015				
Subsidiaries	.0127906	-.0021919	1.076262	.9872091
Independent	.0357023	.0235996	1.16033	1.102979
State	.0404793	.01295	1.223912	1.064697
PORT#				
logwages2015				
Ports within~m	.3126941	-.04888	1.296905	.945424
PORT#				
TFP2015				
Ports within~m	.2838364	-.0617006	1.300998	.9133844
PORT#				
logemp2015				
Ports within~m	.4109643	-.0321599	1.577238	.8670528
PORT#				
DEBTS2015				
Ports within~m	.301737	-.0582496	1.430794	.8927819
PORT#				
EXP2015				
Ports within~m	.653605	-.0313352	2.641051	.9269355
PORT#				
RD2015				
Ports within~m	.1184008	-.0165263	1.722386	.9232619

```
100          // SD way below 10% for all variables. VR fine.
```

```
101
101      end of do-file
```

```
102
```

```
103      log close
```

```
      name: <unnamed>
```

```
      log: C:\Users\Emilie\Documents\Emilie\Uni\Master\Nottingham\2_Appl_Microeconom
```

```
> etrics\fdimatching_clean\03_log\03b_NNM.smcl
```

```
      log type: smcl
```

```
      closed on: 30 Mar 2020, 10:19:19
```