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name: <unnamed>
log: D:\jason\workshop\diferences in differences\did.log
log type: text
opened on: 15 Jun 2020, 10:10:48
```

```
. use "http://fmwww.bc.edu/repec/bocode/c/CardKrueger1994.dta"
(Dataset from Card&Krueger (1994))
```

```
. *****
. * Basic DID analysis
. *****
. diff fte, t(treated) p(t)
```

```
DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
Number of observations in the DIFF-IN-DIFF: 801
```

	Before	After	
Control:	78	77	155
Treated:	326	320	646
	404	397	

Outcome var.	fte	S. Err.	t	P> t

Before				
Control	19.949			
Treated	17.065			
Diff (T-C)	-2.884	1.135	-2.54	0.011**
After				
Control	17.542			
Treated	17.573			
Diff (T-C)	0.030	1.143	0.03	0.979
Diff-in-Diff	2.914	1.611	1.81	0.071*

```
R-square: 0.01
* Means and Standard Errors are estimated by linear regression
**Inference: *** p<0.01; ** p<0.05; * p<0.1
```

```
. *****
. * DID analysis with covariates
. *****
. diff fte, t(treated) p(t) cov(bk kfc roys) report
DIFFERENCE-IN-DIFFERENCES WITH COVARIATES
```

```
DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
Number of observations in the DIFF-IN-DIFF: 801
```

	Before	After	
Control:	78	77	155
Treated:	326	320	646
	404	397	

Report - Covariates and coefficients:

Variable(s)	Coeff.	Std. Err.	t	P> t

bk	0.917	0.889	1.032	0.303
kfc	-9.205	1.006	-9.154	0.000
roys	-0.897	0.967	-0.927	0.354

Outcome var.	fte	S. Err.	t	P> t

Before				
Control	21.161			
Treated	18.837			
Diff (T-C)	-2.324	1.031	-2.25	0.024**
After				
Control	18.758			
Treated	19.369			
Diff (T-C)	0.611	1.037	0.59	0.556
Diff-in-Diff	2.935	1.460	2.01	0.045**

```
R-square: 0.19
* Means and Standard Errors are estimated by linear regression
**Inference: *** p<0.01; ** p<0.05; * p<0.1
```

```
. *****
. * DID analysis with covariates and kernal Propensity Score matching
. *****
```

```
. diff fte, t(treated) p(t) cov(bk kfc roys) kernel id(id) report support
KERNEL PROPENSITY SCORE MATCHING DIFFERENCE-IN-DIFFERENCES
Estimation on common support
Report - Propensity score estimation with probit command
Attention: _pscore is estimated at baseline
```

```
Iteration 0: log likelihood = -198.21978
Iteration 1: log likelihood = -196.7657
Iteration 2: log likelihood = -196.7636
```

```
Probit regression                                Number of obs   =      404
                                                LR chi2(3)      =       2.91
                                                Prob > chi2     =     0.4053
Log likelihood = -196.7636                    Pseudo R2      =     0.0073
```

treated	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
bk	.1812529	.2090916	0.87	0.386	-.2285591 .5910649
kfc	.3888298	.246799	1.58	0.115	-.0948873 .8725469
roys	.2997977	.2318227	1.29	0.196	-.1545664 .7541618
_cons	.6476036	.1777446	3.64	0.000	.2992305 .9959767

Matching iterations...

```
>
DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
Number of observations in the DIFF-IN-DIFF: 795
      Before      After
Control: 78      76      154
Treated: 326    315      641
      404      391
```

Outcome var.	fte	S. Err.	t	P> t
Before				
Control	20.040			
Treated	17.065			
Diff (T-C)	-2.975	0.943	-3.16	0.002***
After				
Control	17.449			
Treated	17.499			
Diff (T-C)	0.050	0.955	0.05	0.958
Diff-in-Diff	3.026	1.342	2.25	0.024**

```
R-square: 0.02
* Means and Standard Errors are estimated by linear regression
**Inference: *** p<0.01; ** p<0.05; * p<0.1
```

```
. diff fte, t(treated) p(t) cov(bk kfc roys) kernel id(id) report support addcov(wendys)
KERNEL PROPENSITY SCORE MATCHING DIFFERENCE-IN-DIFFERENCES
Estimation on common support
Report - Propensity score estimation with probit command
Attention: _pscore is estimated at baseline
```

```
Iteration 0: log likelihood = -198.21978
Iteration 1: log likelihood = -196.7657
Iteration 2: log likelihood = -196.7636
```

```
Probit regression                                Number of obs   =      404
                                                LR chi2(3)      =       2.91
                                                Prob > chi2     =     0.4053
Log likelihood = -196.7636                    Pseudo R2      =     0.0073
```

treated	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
bk	.1812529	.2090916	0.87	0.386	-.2285591 .5910649
kfc	.3888298	.246799	1.58	0.115	-.0948873 .8725469
roys	.2997977	.2318227	1.29	0.196	-.1545664 .7541618
_cons	.6476036	.1777446	3.64	0.000	.2992305 .9959767

Matching iterations...

```
>
DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
Number of observations in the DIFF-IN-DIFF: 795
      Before      After
Control: 78      76      154
Treated: 326    315      641
      404      391
```

Report - Additional covariates and coefficients:

Variable(s)	Coeff.	Std. Err.	t	P> t
wendys	1.452	1.035	1.403	0.161

Outcome var.	fte	S. Err.	t	P> t
Before				
Control	19.872			
Treated	16.874			
Diff (T-C)	-2.998	0.943	-3.18	0.002***
After				
Control	17.300			
Treated	17.315			
Diff (T-C)	0.014	0.955	0.02	0.988
Diff-in-Diff	3.013	1.341	2.25	0.025**

R-square: 0.02

* Means and Standard Errors are estimated by linear regression

Inference: * p<0.01; ** p<0.05; * p<0.1

```
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.
. *****
. * Testing the equivalence between the treatment and the control group after matatching
. *****
.
. diff fte, t(treated) p(t) cov(bk kfc roys) kernel id(id) report support addcov(wendys) test
Report - Propensity score estimation with probit command
Attention: _pscore is estimated at baseline
```

```
Iteration 0: log likelihood = -198.21978
Iteration 1: log likelihood = -196.7657
Iteration 2: log likelihood = -196.7636
```

```
Probit regression                                Number of obs   =      404
                                                LR chi2(3)      =       2.91
                                                Prob > chi2     =     0.4053
Log likelihood = -196.7636                    Pseudo R2      =     0.0073
```

treated	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
bk	.1812529	.2090916	0.87	0.386	-.2285591 .5910649
kfc	.3888298	.246799	1.58	0.115	-.0948873 .8725469
roys	.2997977	.2318227	1.29	0.196	-.1545664 .7541618
_cons	.6476036	.1777446	3.64	0.000	.2992305 .9959767

Matching iterations...

TWO-SAMPLE T TEST

Test on common support

Number of observations (baseline): 404

	Before	After
Control:	78	-
Treated:	326	-
	404	-

t-test at period = 0:

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T > t)
fte	20.040	17.065	-2.975	2.89	0.0041***
bk	0.468	0.408	-0.060	1.21	0.2259
kfc	0.144	0.209	0.064	1.69	0.0911*
roys	0.272	0.252	-0.020	0.46	0.6462

*** p<0.01; ** p<0.05; * p<0.1

Attention: option kernel weighs variables in cov(varlist)
 Means and t-test are estimated by linear regression

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. log close
name: <unnamed>
log: D:\jason\workshop\diffrences in diffrences\did.log
log type: text
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closed on: 15 Jun 2020, 10:10:49
