



Universidad de
SanAndrés

PS6 Economía Aplicada

Elaborado por:

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Punto 1

La replicacion de la tabla 4 se encuentra en la siguiente hoja. Se replica el cuadro utilizando los mismos controles y efectos fijos.

Quadro 1: The Deterrence Effects of Castle Doctrine Laws: Burglary, Robbery, and Aggravated Assault

	OLS—Weighted by State Population						OLS—Unweighted					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A. <i>Burglary</i>												
Castle Doctrine Law												
0 to 2 years before adoption of castle doctrine law	0.0780*** (0.0255)	0.0290 (0.0236)	0.0223 (0.0223)	0.0181 (0.0265) -0.0091	0.0327* (0.0165)	0.0237 (0.0207)	0.0572** (0.0272)	0.0096 (0.0291)	0.0066 (0.0268)	0.0029 (0.0330) -0.0088	0.0327* (0.0165)	0.0207 (0.0259)
				(0.0133)						(0.0195)		
Panel B. <i>Robbery</i>												
Castle Doctrine Law												
0 to 2 years before adoption of castle doctrine law	0.0408 (0.0254)	0.0344 (0.0224)	0.0262 (0.0229)	0.0197 (0.0257) -0.0138	0.0376** (0.0181)	0.0515* (0.0274)	0.0448 (0.0331)	0.0320 (0.0421)	0.0084 (0.0387)	0.0005 (0.0462) -0.0189	0.0376** (0.0181)	0.0267 (0.0299)
				(0.0153)						(0.0237)		
Panel C. <i>Aggravated Assault</i>												
Castle Doctrine Law												
0 to 2 years before adoption of castle doctrine law	0.0434 (0.0387)	0.0397 (0.0407)	0.0372 (0.0319)	0.0330 (0.0367) -0.0090	0.0424 (0.0291)	0.0414 (0.0285)	0.0555 (0.0604)	0.0698 (0.0630)	0.0343 (0.0433)	0.0326 (0.0501) -0.0039	0.0424 (0.0291)	0.0317 (0.0380)
Observations	550	550	550	550	550	550	550	550	550	550	550	550
State and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region-by-Year Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Varying Controls			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contemporaneous Crime Rates				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-Specific Linear Trends					Yes	Yes					Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: Each column in each panel represents a separate regression. The unit of observation is state-year. Robust standard errors are clustered at the state level. Time-varying controls include policing and incarceration rates, welfare and public assistance spending, median income, poverty rate, unemployment rate, and demographics. Contemporaneous crime rates include larceny and motor vehicle theft rates.

Punto 2

En la Figura 1 se puede observar que el supuesto de tendencias paralelas no se estaría cumpliendo ya que antes del tratamiento hay un coeficiente significativo. Lo ideal sería que antes del tratamiento todos los coeficientes sean no significativos y cercanos a cero, y pos tratamiento al menos uno de ellos sea significativo. En la Figura 2 también se estaría violando el supuesto de tendencias paralelas, esto debido a que en el grupo del año 2007 varios periodos antes del tratamiento los coeficientes son significativos, así también, para el grupo de 2005 y 2008.

Luego, el ATT simple resultante del estimado de Callaway y Sant'Ann'as (2020) muestra que para la variable dependiente Asaltos controlada por las variables como tasa de pobreza, tasa de desempleo nos arrojan un ATT de 0.0533 con un nivel de significancia de 0.19. Esto no es significativo, entonces tenemos un problema de sesgo. Esto en correlación con lo mencionado en el párrafo anterior.

Figura 1: Event Study

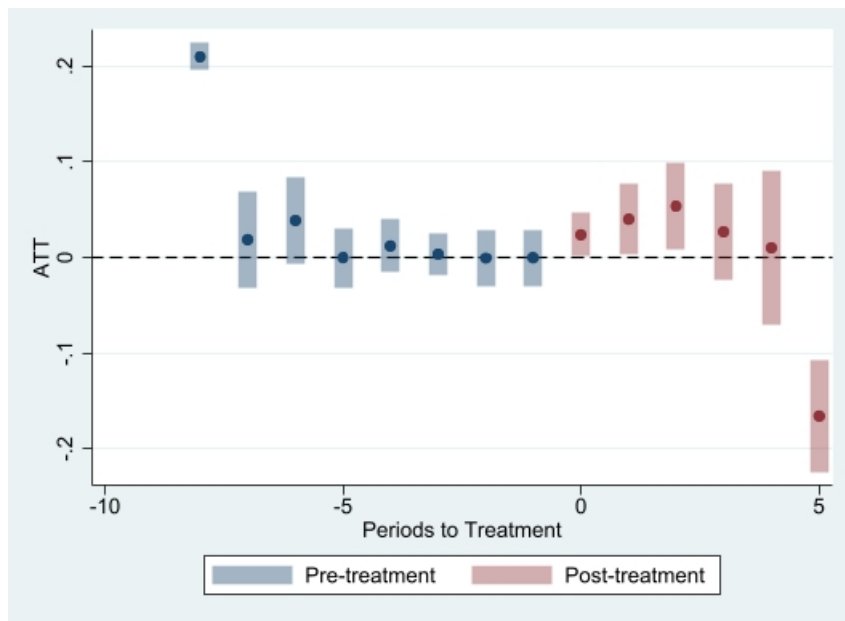
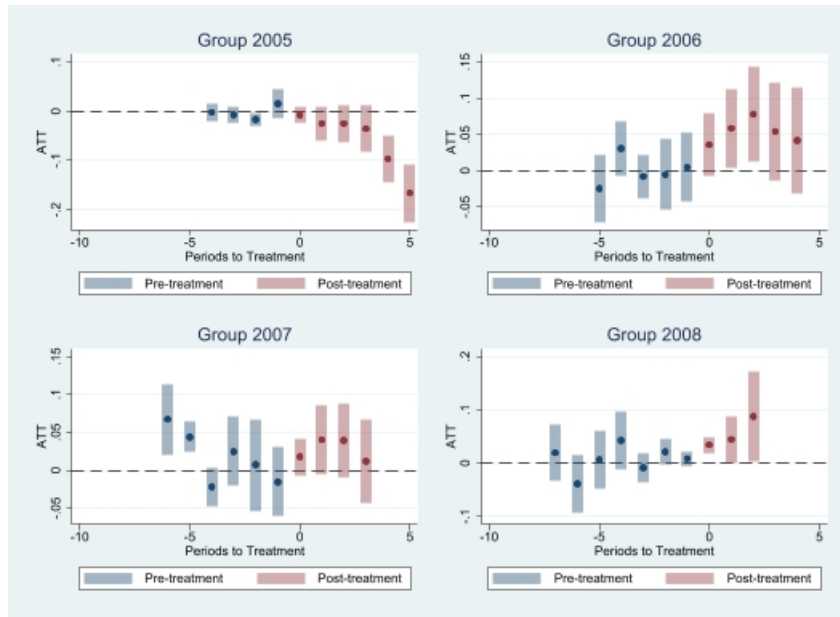


Figura 2: Event Study para los grupos de tratamiento seleccionados



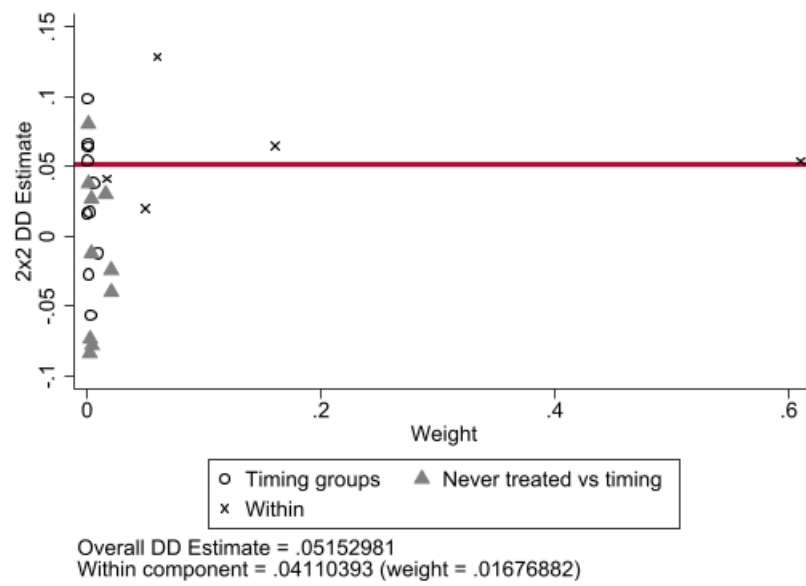
Punto 3

En la figura, vemos la representacion grafica de la descomposicion de Bacon para la base de datos sobre Doctrine Castle Laws.

De acuerdo con los resultados, las partes de la descomposicion no tienen un peso realmente significativo, salvo la variable Never treated vs timing.

Ademas los componentes estan distribuidos alrededor del valor estimado mediante D in D originalmente.

Figura 3: Descomposición de Bacon





```

/*****
Diff-in-Diff

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Economía Aplicada

2022

>
*****/

*****/

* 0) Set up environment
*=====

global main "G:\My Drive\Udesa\aplicada\tp\week7"
global output "$main/output"
global input "$main/input"
cd "$output"

* 1) DiD
*=====

*use http://pped.org/bacon_example.dta, clear
use "$input/castle", clear

// set scheme cleanplots
* ssc install bacondecomp

* define global macros
global crimel jhcitizen_c jhpolice_c murder homicide robbery assault burglary larceny
> motor robbery_gun_r
global demo blackm_15_24 whitem_15_24 blackm_25_44 whitem_25_44 //demographics
global lintrend trend_1-trend_51 //state linear trend
global region r20001-r20104 //region-quarter fixed effects
global exocrime l_larceny l_motor // exogenous crime rates
global spending l_exp_subsidy l_exp_pubwelfare
global xvar l_police unemployrt poverty l_income l_prisoner l_lagprisoner $demo $spend
> ing

label variable post "Year of treatment"

local y_vars l_burglary l_robbery l_assault

foreach y of local y_vars{
    xi: xtreg `y' cdl i.year [aweight=popwt], fe vce(cluster sid)
    est store `y'_1
    estadd local sy = "Yes"

    xi: xtreg `y' cdl i.year $region [aweight=popwt], fe vce(cluster sid)
    est store `y'_2
    estadd local sy = "Yes"
    estadd local ry = "Yes"
}

```

```

xi: xtreg `y' cdl i.year $region $xvar [aweight=popwt], fe vce(cluster sid)
est store `y'_3
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"

xi: xtreg `y' cdl pre2_cdl i.year $region $xvar [aweight=popwt], fe vce(cluster sid)
est store `y'_4
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"

xi: xtreg `y' cdl i.year $region $xvar $sexocrime [aweight=popwt], fe vce(cluster sid)
> )
est store `y'_5
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"
estadd local ccr = "Yes"

xi: xtreg `y' cdl i.year $region $xvar $lintrend [aweight=popwt], fe vce(cluster sid)
> d)
est store `y'_6
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"
estadd local ssltt = "Yes"

xi: xtreg `y' cdl i.year , fe vce(cluster sid)
est store `y'_1_no
estadd local sy = "Yes"

xi: xtreg `y' cdl i.year $region , fe vce(cluster sid)
est store `y'_2_no
estadd local sy = "Yes"
estadd local ry = "Yes"

xi: xtreg `y' cdl i.year $region $xvar , fe vce(cluster sid)
est store `y'_3_no
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"

xi: xtreg `y' cdl pre2_cdl i.year $region $xvar , fe vce(cluster sid)
est store `y'_4_no
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"

xi: xtreg `y' cdl i.year $region $xvar $sexocrime [aweight=popwt], fe vce(cluster sid)
> )
est store `y'_5_no
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"
estadd local ccr = "Yes"

```



```

xi: xtreg `y' cdl i.year $region $xvar $lintrend , fe vce(cluster sid)
est store `y'_6_no
estadd local sy = "Yes"
estadd local ry = "Yes"
estadd local tv = "Yes"
estadd local ssltt = "Yes"
}

#delimit ;

global note_nv " \item Note: Each column in each panel represents a
separate regression. The unit of observation is state-year.
Robust standard errors are clustered at the state level. Time-varying contro
> ls include
policing and incarceration rates, welfare and public assistance spending,
median income, poverty rate, unemployment rate, and demographics.
Contemporaneous crime rates include larceny and
motor vehicle theft rates.";

global pre_head_nv "\begin{sidewaystable}[htbp]\centering \fontsize{10}{4}\selectfon
> t
\begin{threeparttable} \def\sym#1{\ifmmode^{#1}\else\(^{#1}\)\fi}
\caption{The Deterrence Effects of Castle Doctrine Laws:
Burglary, Robbery, and Aggravated Assault}" ;

esttab 1_burglary_1 1_burglary_2 1_burglary_3 1_burglary_4 1_burglary_5 1_burglary_6
1_burglary_1_no 1_burglary_2_no 1_burglary_3_no 1_burglary_4_no 1_burglary_5_n
> o
1_burglary_6_no using "table_4.tex" , replace ///
eqlabels( none ) nostar nobaselevels
cells(b(label(coef.) star fmt(%11.4f) ) se( par fmt(%11.4f) ) ) nonote
starlevels(\sym{*} 0.10 \sym{**} 0.05 \sym{***} 0.01)
collabels(none)
delim("&")
noobs
keep( cdl pre2_cdl )
nomtitles
varlabels( cdl "Castle Doctrine Law" pre2_cdl "0 to 2 years before adoption o
> f castle doctrine law}" )
mggroups( "OLS-Weighted by State Population" "OLS-Unweighted"
, pattern( 1 0 0 0 0 0 1 0 0 0 0 0 ) prefix(\multicolumn{@span}{c}{}) suffi
> x()) span erepeat(\cmidrule{1r}{@span}) )
refcat( cdl "\Gape[0.25cm][0.25cm]{
\underline{ Panel A.\textbf{
\textit{ Burglary } } } )"
, nolabel)
prehead( "$pre_head_nv}" "\label{PNDT Mortality Main Rest Female}"
"\begin{tabular}{p{5cm}p{1cm}p{1cm}p{1cm}p{1.2cm}p{1cm}p{1cm}p{1cm}p{1cm}p{1
> cm}p{1.2cm}p{1cm}p{1cm}}" \hline \hline )
posthead(\hline)
postfoot( "" ) ;

esttab 1_robbery_1 1_robbery_2 1_robbery_3 1_robbery_4 1_robbery_5 1_robbery_6
1_robbery_1_no 1_robbery_2_no 1_robbery_3_no 1_robbery_4_no 1_robbery_5_no
1_robbery_6_no using "table_4.tex" , append //7
eqlabels( none ) nostar nobaselevels
cells(b(label(coef.) star fmt(%11.4f) ) se( par fmt(%11.4f) ) ) nonote
starlevels(\sym{*} 0.10 \sym{**} 0.05 \sym{***} 0.01)
collabels(none)
delim("&")
noobs
nonumbers
nomtitles
keep( cdl pre2_cdl )
varlabels( cdl "Castle Doctrine Law" pre2_cdl "0 to 2 years before adoption o
> f castle doctrine law}" )

```

```

refcat( cdl "\Gape[0.25cm][0.25cm]{
    \underline{ Panel B.\textbf{
        \textit{ Robbery } } } }"
    , nolabel)
prehead( \hline )
posthead( "" )
postfoot( "" ) ;

esttab l_assault_1 l_assault_2 l_assault_3 l_assault_4 l_assault_5 l_assault_6
l_assault_1_no_l_assault_2_no l_assault_3_no l_assault_4_no l_assault_5_no
l_assault_6_no using "table 4.tex" , append
eqlabels( none ) nostar nobaselevels
cells(b(label(coef.) star fmt(%11.4f) ) se( par fmt(%11.4f) ) ) nonote
starlevels(\sym{*} 0.10 \sym{**} 0.05 \sym{***} 0.01)
stats( N sy ry tv ccr ssltt,
label( "Observations" "State and Year Fixed Effects" "Region-by-Year Fixed Eff
> ects"
"Time-Varying Controls" "Contemporaneous Crime Rates}" "State-Specific
> Linear Time Trends}" )
fmt( 0 ) )
collabels(none)
delim("&")
noobs
nonumbers
nomtitles
keep( cdl pre2_cdl )
varlabels( cdl "Castle Doctrine Law" pre2_cdl "0 to 2 years before adoption o
> f castle doctrine law}" )
refcat( cdl "\Gape[0.25cm][0.25cm]{ \underline{ Panel C.\textbf{
    \textit{ Aggravated } } } \textbf{
    \textit{ Assault } } } }"
    , nolabel)
prehead( "" )
postfoot(\hline \hline "\multicolumn{13}{l}{\footnotesize Standard errors in p
> arenteses}\\\"
"\multicolumn{13}{l}{\footnotesize \sym{*} \ (p<0.10\), \sym{**} \ (p<0.05\
> , \sym{***} \ (p<0.01\)}\\\" \end{tabular}
\begin{tablenotes}
\begin{footnotesize}
${note_nv}
\end{footnotesize}
"\end{tablenotes} \end{threeparttable} \end{sidewaystable}") ;

#delimit cr

*2)
// ssc install csdid
// ssc install drdid

replace effyear = 0 if effyear == .

csdid l_assault ${xvar} [iw=popwt], ivar(sid) time(year) gvar(effyear) method(reg) not
> yet
estat simple

* Pretrends test

estat pretrend // se rechaza

* Average ATT

estat simple // potencial problema de sesgo - no se recha
> za la ho.
esttab r(table, transpose)

```

```
estat event
csdid_plot
```

```
csdid l_assault cdl [iw=popwt], ivar(sid) time(year) gvar(effyear) method(reg) notyet
csdid_plot, group(2005) name(m1,replace) title("Group 2005")
csdid_plot, group(2006) name(m2,replace) title("Group 2006")
csdid_plot, group(2007) name(m3,replace) title("Group 2007")
csdid_plot, group(2008) name(m4,replace) title("Group 2008")
graph combine m1 m2 m3 m4, xcommon scale(0.8)
```

```
* 3) Goodman-Bacon (2019)
```

```
*=====*
```

```
ssc install bacondcomp
```

```
** Bacon Decomposition
```

```
xi: xtreg l_burglary cdl post i.year, fe vce(cluster sid)
```

```
*Request the detailed decomposition of the DD model.
```

```
bacondcomp l_burglary post , stub(Bacon_) ddetail
```

```
translate "G:\My Drive\Udesa\aplicada\tp\week7\programs\week7 - Copy.do" "C:\Users\Anz
> ony\Documents\GitHub\Applied_Econometrics\PS6\tp6_do.pdf", translator(txt2pdf)
```