

附录

正文未报告部分

*****一、实证结果与稳健性检验*****

****生成附图 3 -左图****

```
use "数据.dta"
egen mean_lnco2=mean(lnco2),by(year pilot)
graph twoway (connect mean_lnco2 year if pilot==1,sort) (connect mean_lnco2 year if
pilot==0,sort lpattern(dash)), ///
xline(2011,lpattern(dash) lcolor(gray)) ///
xline(2013,lpattern(dash) lcolor(gray)) ///
yttitle("lnco2") xttitle("年度") ///
ylabel(,labsize(*0.75)) xlabel(,labsize(*0.75)) ///
legend(label(1 "处理组") label(2 "控制组")) ///图例
xlabel(2006 (1) 2017) graphregion(color(white)) //白底
graph export "lnco2.wmf", replace fontface("Times New Roman")
```

****生成附图 3 -右图****

```
egen mean_lncogdp=mean(lncogdp),by(year pilot)
graph twoway (connect mean_lncogdp year if pilot==1,sort) (connect mean_lncogdp year if
pilot==0,sort lpattern(dash)), ///
xline(2011,lpattern(dash) lcolor(gray)) ///
xline(2013,lpattern(dash) lcolor(gray)) ///
yttitle("lncogdp") xttitle("年度") ///
ylabel(,labsize(*0.75)) xlabel(,labsize(*0.75)) ///
legend(label(1 "处理组") label(2 "控制组")) ///图例
xlabel(2006 (1) 2017) graphregion(color(white)) //白底
graph export "lncogdp.wmf", replace fontface("Times New Roman")
```

*****生成多期 DID 变量*****

****北京 (pro=4), 天津 (pro=7), 上海 (pro=1), 重庆 (pro=27), 湖北 (pro=21), 广东 (pro=12), 福建 (pro=24), 深圳 (city=169), 四川 (pro=6) ****

```
gen treatment=1 if pro==4|pro==7|pro==1|pro==27|pro==21|pro==12|pro==24
replace treatment=0 if treatment!=1
gen post=1 if (pro==4|pro==7|pro==1|pro==12)&year>=2013
replace post=1 if (pro==27|pro==21)&year>=2014
replace post=1 if pro==24&year>=2016
replace post=0 if post!=1
gen DID=treatment*post
```

****1. 基准回归-表 1, 附表 3****

```
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
asdoc xtreg lnco2 DID i.year#i.region i.year,fe vce(cluster pr) nest replace dec(4)
```

```

asdoc xtreg lnco2 DID $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)

```

2. 平行趋势检验-附表 4

```

clear
use "数据.dta"
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
gen tpilot=2013 if city==169
replace tpilot=2013 if pro==1
replace tpilot=2013 if pro==4
replace tpilot=2013 if pro==7
replace tpilot=2013 if pro==12 & city!=169
replace tpilot=2014 if pro==21
replace tpilot=2014 if pro==27
replace tpilot=2016 if pro==24
gen policy=year-tpilot //生产政策时点前后期数
tab policy
forvalues i=10(-1)1 {
    gen pre`i'=(policy==`i')
}
gen current=(policy==0)
forvalues i=1(1)4 {
    gen post`i'=(policy==`i')
}
drop pre10 pre9 pre8 pre7
asdoc xtreg lnco2 pre* current post* $control t1 t2 t3 i.year#i.region i.year,fe vce(cluster pr) nest
replace dec(4)
asdoc xtreg lncogdp pre* current post* $control t1 t2 t3 i.year#i.region i.year,fe vce(cluster pr)
nest append dec(4)

```

附图 4-左图

```

xtreg lnco2 pre* current post* $control c.c_int#c.lnpgdp t1 t2 t3 i.year#i.region i.year,fe
vce(cluster pr)
coefplot, baselevels ///
keep(pre* current post*) ///
vertical ///转置图形
ylines(0, lcolor(edkblue*0.8)) ///加入 y=0 这条虚线
xline(7, lwidth(vthin) lpattern(dash) lcolor(teal)) ///
ylabel(*0.75) xlabel(*0.75) ///
ytitle("回归系数 (lnco2)", size(medium small)) ///加入 Y 轴标题,大小 small
xtitle("政策时点", size(medium small)) ///加入 X 轴标题,大小 small
addplot(line @b @at) ///增加点之间的连线

```

```

ciopts(lpattern(dash) recast(rcap) msize(medium)) ///CI 为虚线上下封口
msymbol(circle_hollow) ///plot 空心格式
scheme(s1mono)
**附图 4-右图**
xtreg lncogdp pre* current post* $control c.c_int#c.lnpgdp t1 t2 t3 i.year#i.region i.year,fe
vce(cluster pr)
coefplot, baselevels ///
keep(pre* current post*) ///
vertical ///转置图形
yline(0,lcolor(edkblue*0.8)) ///加入 y=0 这条虚线
xline(7, lwidth(vthin) lpattern(dash) lcolor(teal)) ///
ylabel(labsize(*0.75)) xlabel(labsize(*0.75)) ///
ytlabel("回归系数 (lncogdp)", size(medium small)) ///加入 Y 轴标题,大小 small
xtlabel("政策时点", size(medium small)) ///加入 X 轴标题, 大小 small
addplot(line @b @at) ///增加点之间的连线
ciopts(lpattern(dash) recast(rcap) msize(medium)) ///CI 为虚线上下封口
msymbol(circle_hollow) ///plot 空心格式
scheme(s1mono)

```

平行趋势的补充检验-附表 5

```

replace c_int=0 if c_int==.
asdoc xtreg lncog2 pre* current post* c.c_int#c.lnpgdp $control i.year#i.region i.year,fe vce(cluster
pr) nest replace dec(4)
asdoc xtreg lncogdp pre* current post* c.c_int#c.lnpgdp $control i.year#i.region i.year,fe
vce(cluster pr) nest append dec(4)

```

3. 安慰剂检验-附图 5

左图

```

clear
set matsize 11000
forvalue i=1/500 {
    clear
    use "数据.dta"
    drop if year==2006|year==2017
    bsample 1,strata(pr) //根据省份分组, 每组随机抽取一个年份
    sample 8,count
    keep pro year
    gen new_pilot=1
    rename year new_time
    save xn,replace
    merge 1:m pro using "数据.dta"
    drop _merge
    replace new_pilot=0 if new_pilot==.
    gen post=1 if year>=new_time
}

```

```

        replace post=0 if post!=1
        gen x=new_pilot*post
        global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys
strsq strpub lnslfd lnzls t1 t2 t3"
        xtset ci year,delta(1)
        xtreg lnco2 x $control i.year#i.region i.year,fe vce(cluster pr)
        gen _b_new_treat=_b[x]
        gen _se_new_treat=_se[x]
        duplicates drop _b_new_treat,force
        save placebo`i',replace
    }
    use placebo1,clear
    forvalue i=2/500 {
        append using placebo`i'
    }
    gen b=_b_new_treat
    kdensity b,xtitle(DID 系数) ytitle(" 概率密度 ( lnco2 ) ")tline(0,lp(dash) lc(black) )
    tline(-0.0833,lp(dash) lc(black) ) tlabel(0,add labsize(*.75)) tlabel(-0.0833,add labsize(*.75))
    normal
    *右图*
    clear
    set matsize 11000
    forvalue i=1/500 {
        clear
        use "数据.dta"
        drop if year==2006|year==2017
        bsample 1,strata(pr) //根据省份分组，每组随机抽取一个年份
        sample 8,count
        keep pro year
        gen new_pilot=1
        rename year new_time
        save xn,replace
        merge 1:m pro using "数据.dta"
        drop _merge
        replace new_pilot=0 if new_pilot==.
        gen post=1 if year>=new_time
        replace post=0 if post!=1
        gen x=new_pilot*post
        global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys
strsq strpub lnslfd lnzls t1 t2 t3"
        xtset ci year,delta(1)
        xtreg lncogdp x $control i.year#i.region i.year,fe vce(cluster pr)
        gen _b_new_treat=_b[x]
        gen _se_new_treat=_se[x]

```

```

        duplicates drop _b_new_treat,force
        save placebo`i',replace
    }
    use placebo1,clear
    forvalue i=2/500 {
        append using placebo`i'
    }
    gen b=_b_new_treat
    kdensity b,xtitle(DID 系数) ytitle(" 概率密度 ( lnco2 ) ")tline(0,lp(dash) lc(black) )
    tline(-0.0895,lp(dash) lc(black) ) tlabel(0,add labsize(*.75)) tlabel(-0.0895,add labsize(*.75))
    normal

```

****4. 稳健性检验****

```
use "数据.dta"
```

*****生成多期 DID 变量*****

****北京 (pro=4), 天津 (pro=7), 上海 (pro=1), 重庆 (pro=27), 湖北 (pro=21), 广东 (pro=12), 福建 (pro=24), 深圳 (city=169) ****

```
gen treatment=1 if pro==4|pro==7|pro==1|pro==27|pro==21|pro==12|pro==24
```

```
replace treatment=0 if treatment!=1
```

```
gen post=1 if (pro==4|pro==7|pro==1|pro==12)&year>=2013
```

```
replace post=1 if (pro==27|pro==21)&year>=2014
```

```
replace post=1 if pro==24&year>=2016
```

```
replace post=0 if post!=1
```

```
gen DID=treatment*post
```

```
save as "data1.dta"
```

**** (1) PSM-DID-附表 6****

*** (1.1) 半径匹配***

***匹配 2006 年**

```
clear
```

```
use " data1.dta"
```

```
keep if year==2006
```

```
set seed 10010
```

```
gen tmp=runiform()
```

```
sort tmp
```

```
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
```

```
psmatch2 pilot $control,out(lnco2) radius cal(0.05) ate ties logit common
```

```
pstest $control,both
```

```
gen common=_support
```

```
drop if common==0|common==.
```

```
keep city
```

```
save " psm06.dta", replace
```

***匹配 2007 年**

```
clear
```

```
use "data1.dta"
keep if year==2007
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) radius cal(0.05) ate ties logit common
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm07.dta", replace
*匹配 2008 年
clear
use "data1.dta"
keep if year==2008
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) radius cal(0.05) ate ties logit common
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm08.dta", replace
*匹配 2009 年
clear
use "data1.dta"
keep if year==2009
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) radius cal(0.05) ate ties logit common
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm09.dta", replace
*匹配 2010 年
```

```

clear
use "data1.dta"
keep if year==2010
set seed 10010
gen tmp=runiform()
sort tmp
global control "co2 cogdp co2 cogdp lnpgdp lnpgdpp strind strser strls strwz popden lnpop
marketindex lnqys strsq strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) radius cal(0.05) ate ties logit common
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm10.dta", replace
**合并确定 2006-2010 年在共同取值范围内的样本**
merge 1:1 city using "psm09.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm08.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm07.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm06.dta"
drop if _merge!=3
drop _merge
save "psm.dta", replace
*与原始数据进行合并并回归
use "data1.dta"
merge m:1 city using "psm.dta"
drop if _merge!=3
xtset ci year
sum
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
xtreg lnco2 DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto a1
xtreg lncogdp DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto a2
esttab a1 a2 using 半径匹配.rtf, r2 obslast nogaps drop (*year*) star(* 0.1 ** 0.05 *** 0.01)
b(%6.4f) se(%6.4f) r2(%6.4f) compress replace

```

* (1.2) 近邻匹配*

***匹配 2006 年**

```
clear
use "data1.dta"
keep if year==2006
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) logit ate neighbor(4) common ties
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm06.dta", replace
```

***匹配 2007 年**

```
clear
use "data1.dta"
keep if year==2007
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) logit ate neighbor(4) common ties
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm07.dta", replace
```

***匹配 2008 年**

```
clear
use "data1.dta"
keep if year==2008
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) logit ate neighbor(4) common ties
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
```



```
save "psm08.dta", replace
*匹配 2009 年
clear
use "data1.dta"
keep if year==2009
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) logit ate neighbor(4) common ties
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm09.dta", replace
*匹配 2010 年
clear
use "data1.dta"
keep if year==2010
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) logit ate neighbor(4) common ties
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm10.dta", replace
*合并确定 2006-2010 年在共同取值范围内的样本**
merge 1:1 city using "psm09.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm08.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm07.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm06.dta"
drop if _merge!=3
drop _merge
```

```

save "psm.dta", replace
*与原始数据进行合并并回归
use "data1.dta"
merge m:1 city using "psm.dta"
drop if _merge!=3
xtset ci year
sum
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
xtreg lnco2 DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto b1
xtreg lncogdp DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto b2
esttab b1 b2 using 近邻匹配.rtf, r2 obslast nogaps drop (*year*) star(* 0.1 ** 0.05 *** 0.01)
b(%6.4f) se(%6.4f) r2(%6.4f) compress replace
* (1.3) 核匹配*
*匹配 2006 年*
clear
use "data1.dta"
keep if year==2006
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) kernel ate ties logit common quietly
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm06.dta", replace
*匹配 2007 年
clear
use "data1.dta"
keep if year==2007
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) kernel ate ties logit common quietly
pstest $control,both
gen common=_support
drop if common==0|common==.

```

```
keep city
save "psm07.dta", replace
*匹配 2008 年
clear
use "data1.dta"
keep if year==2008
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) kernel ate ties logit common quietly
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm08.dta", replace
*匹配 2009 年
clear
use "data1.dta"
keep if year==2009
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) kernel ate ties logit common quietly
pstest $control,both
gen common=_support
drop if common==0|common==.
keep city
save "psm09.dta", replace
*匹配 2010 年*
clear
use "data1.dta"
keep if year==2010
set seed 10010
gen tmp=runiform()
sort tmp
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 "
psmatch2 pilot $control,out(lnco2) kernel ate ties logit common quietly
pstest $control,both
gen common=_support
```

```

drop if common==0|common==.
keep city
save "psm10.dta", replace
*合并确定 2006-2010 年在共同取值范围内的样本**
merge 1:1 city using "psm09.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm08.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm07.dta"
drop if _merge!=3
drop _merge
merge 1:1 city using "psm06.dta"
drop if _merge!=3
drop _merge
save "psm.dta", replace
*与原始数据进行合并并回归
use "data1.dta"
merge m:1 city using "psm.dta"
drop if _merge!=3
xtset ci year
sum
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
xtreg lnco2 DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto c1
xtreg lncogdp DID $control i.year#i.region i.year,fe vce(cluster pr)
est sto c2
esttab c1 c2 using 核匹配.rtf, r2 obslast nogaps drop (*year*) star(* 0.1 ** 0.05 *** 0.01)
b(%6.4f) se(%6.4f) r2(%6.4f) compress replace

```

** (2) 剔除其他相关政策的影响-附表 7**

```

clear
use "data1.dta"
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
asdoc xtreg lnco2 DID $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest replace dec(4)
asdoc xtreg lnco2 DID $control i.year#i.region i.year if city47==1,fe vce(cluster pr) nest append
dec(4)
asdoc xtreg lnco2 DID $control i.year#i.region i.year if sopilot==1,fe vce(cluster pr) nest append
dec(4)
asdoc xtreg lncogdp DID $control t1 t2 t3 i.year#i.region i.year if

```

```
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year if city47==1,fe vce(cluster pr) nest
append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year if sopilot==1,fe vce(cluster pr) nest
append dec(4)
```

****补充****

```
gen lnprice=lnprice2
replace lnprice=0 if lnprice2==.
gen strvol=strvol2
replace strvol=0 if strvol2==.
gen lnliqui=lnliqui2
replace lnliqui=0 if lnliqui2==.
```

附表 8

```
asdoc xtreg lnc2 lnprice $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest replace dec(4)
asdoc xtreg lnc2 lnliqui $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lnc2 strvol $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp lnprice $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp lnliqui $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp strvol $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
```

附表 9

```
asdoc xtreg lnc2 DID lnprice $control i.year#i.region i.year if
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest replace dec(4)
asdoc xtreg lnc2 DID lnliqui $control i.year#i.region i.year if
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lnc2 DID strvol $control i.year#i.region i.year if lc2010==1|lc2012==1|lc2017==1,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID lnprice $control i.year#i.region i.year if
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID lnliqui $control i.year#i.region i.year if
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID strvol $control i.year#i.region i.year if
lc2010==1|lc2012==1|lc2017==1,fe vce(cluster pr) nest append dec(4)
```

**** (3) 剔除特殊样本的影响****

```
clear
use "data1.dta"
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
```

```

asdoc xtreg lnco2 DID $control i.year#i.region i.year if pro!=4&pro!=1&city!=169,fe vce(cluster pr) nest replace dec(4)
asdoc xtreg lnco2 DID $control i.year#i.region i.year if pro!=27,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lnco2 DID $control i.year#i.region i.year if pro!=24&pro!=6,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year if pro!=4&pro!=1&city!=169,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year if pro!=27,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID $control i.year#i.region i.year if pro!=24&pro!=6,fe vce(cluster pr) nest append dec(4)

```

*****二、市场机制与行政干预的协同作用检验*****

```

clear
use "data1.dta"
gen lnprice=lnprice2
replace lnprice=0 if lnprice2==.
gen strvol=strvol2
replace strvol=0 if strvol2==.
gen lnliqui=lnliqui2
replace lnliqui=0 if lnliqui2==.
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq strpub lnslfd lnzls t1 t2 t3"

```

1.引入市场运行状况的调节效应

表 2

```

asdoc xtreg lnco2 DID c.DID#c.lnprice $control i.year#i.region i.year,fe vce(cluster pr) nest replace dec(4)
asdoc xtreg lnco2 DID c.DID#c.lnliqui $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lnco2 DID c.DID#c.strvol $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)

```

表 3

```

asdoc xtreg lncogdp DID c.DID#c.lnprice $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID c.DID#c.lnliqui $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp DID c.DID#c.strvol $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)

```

2.引入政府干预力量的调节效应

```

gen penalty=6 if pro==1|city==169|pro==4
replace penalty=5 if pro==27
replace penalty=4 if pro==21
replace penalty=3 if pro==12&city!=169

```

```

replace penalty=2 if pro==24
replace penatyl=1 if pro==7
replace penalty=0 if penal==.
replace penalty=0 if DID==0

```

表 4

```

asdoc xtreg lnco2 DID c.DID#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster pr)
nest replace dec(4)
asdoc xtreg lnco2 DID c.DID#c.strpub strgygz $control i.year#i.region i.year,fe vce(cluster pr)
nest append dec(4)
asdoc xtreg lnco2 DID c.DID#c.penalty $control i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)

```

表 5

```

asdoc xtreg lncogdp DID c.DID#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster pr)
nest replace dec(4)
asdoc xtreg lncogdp DID c.DID#c.strpub strgygz $control i.year#i.region i.year,fe vce(cluster pr)
nest append dec(4)
asdoc xtreg lncogdp DID c.DID#c.penalty $control i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)

```

****补充检验-附表 11**

```

asdoc xtreg lnco2 lnprice c.lnprice#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster
pr) nest replace dec(4)
asdoc xtreg lnco2 lnliqui c.lnliqui#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster
pr) nest append dec(4)
asdoc xtreg lnco2 strvol c.strvol#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster pr)
nest append dec(4)
asdoc xtreg lncogdp lnprice c.lnprice#c.strgygz strgygz $control i.year#i.region i.year,fe
vce(cluster pr) nest append dec(4)
asdoc xtreg lncogdp lnliqui c.lnliqui#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster
pr) nest append dec(4)
asdoc xtreg lncogdp strvol c.strvol#c.strgygz strgygz $control i.year#i.region i.year,fe vce(cluster
pr) nest append dec(4)

```

****附表 12****

```

asdoc xtreg lnco2 DID c.DID#c.zls $control i.year#i.region i.year,fe vce(cluster pr) nest replace
dec(4)
asdoc xtreg lncogdp DID c.DID#c.zls $control i.year#i.region i.year,fe vce(cluster pr) nest append
dec(4)

```

*******三、进一步讨论*******

****1.传导途径检验-附表 13****

```

clear
use "data1.dta"
global controll " strind strser strls strwz popden lnpop marketindex lnqys strsq strpub lnslfd lnzls
t1 t2 t3"
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq

```

```

strpub lnslfd lnzls t1 t2 t3"
asdoc xtreg lngdp DID $controll i.year#i.region i.year,fe vce(cluster pr) nest replace dec(4)
asdoc xtreg lnenergdp DID $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg strcoal DID $control t1 t2 t3 i.year#i.region i.year,fe vce(cluster pr) nest append
dec(4)
asdoc xtreg lncogdp DID lnenergdp strcoal $control i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)

```

2.地区异质性检验-附表 14

```

clear
use "data1.dta"
gen bj=1 if pro==4
replace bj=0 if bj!=1
gen tj=1 if pro==7
replace tj=0 if tj!=1
gen sh=1 if pro==1
replace sh=0 if sh!=1
gen sz=1 if city==169
replace sz=0 if sz!=1
gen gd=1 if pro==12&city!=169
replace gd=0 if gd!=1
gen hb=1 if pro==21
replace hb=0 if hb!=1
gen cq=1 if pro==27
replace cq=0 if cq!=1
gen fj=1 if pro==24
replace fj=0 if fj!=1
*以福建作为比较基准*
global controlll "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnzls t1 t2 t3"
xtreg lnco2 DID c.DID#c.bj c.DID#c.tj c.DID#c.sh c.DID#c.sz c.DID#c.gd ///
c.DID#c.hb c.DID#c.cq $controlll i.year#i.region i.year,fe vce(cluster pr)
est store a1
xtreg lncogdp DID c.DID#c.bj c.DID#c.tj c.DID#c.sh c.DID#c.sz c.DID#c.gd ///
c.DID#c.hb c.DID#c.cq $controlll i.year#i.region i.year,fe vce(cluster pr)
est store a2
esttab a1 a2 using 异质性 1.rtf, r2 obslast nogaps drop (*year*) star(* 0.1 ** 0.05 *** 0.01)
b(%6.4f) se(%6.4f) r2(%6.4f) compress replace

```

3.减碳降污协同效应-附表 15

```

clear
use "data1.dta"
global control "lnpgdp lnpgdpp strind strser strls strwz popden lnpop marketindex lnqys strsq
strpub lnslfd lnzls t1 t2 t3"
asdoc xtreg lnso2 DID $control i.year#i.region i.year,fe vce(cluster pr) nest replace dec(4)

```



```
asdoc xtreg lnsogdp DID $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lnPM25 DID $control i.year#i.region i.year,fe vce(cluster pr) nest append dec(4)
asdoc xtreg lnso2 DID c.DID#c.strvol $control t1 t2 t3 i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)
asdoc xtreg lnsogdp DID c.DID#c.strvol $control i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)
asdoc xtreg lnPM25 DID c.DID#c.strvol $control i.year#i.region i.year,fe vce(cluster pr) nest
append dec(4)
```

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[1] 朱军. 技术吸收、政府推动与中国全要素生产率提升[J]. 中国工业经济. 2017, (1):5-24.

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