Computing Assignment VII

redSloth: Tyler Hoppenfield, Daniel Mather, Iwunze Ugo

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OLS/IV Regressions

Table 1: Regression results

	redSloth.coefs	RS.coefs	redSloth.se	RS.se
$\beta_{s(OLS)}$	0.089	0.02	0.012	0.031
$\beta_{s(IV)}$	0.102	0.096	0.025	0.025
$\omega_{t(IV)}$	1.291	1.229	0.106	0.138
$\omega_{t-1(FS)}$	-3.475	-3.628	0.963	0.945
$\omega_{t(FS)}$	-1.969	-2.276	0.969	1.294
$F_{s(FS)}$	13.014	14.73		
$\beta_{d(OLS)}$	-0.017	-0.018	0.011	0.01
$\beta_{d(IV)}$	-0.063	-0.055	0.023	0.024
$\omega_{t(FS)}$	-5.039	-4.655	1.062	1.3
$F_{d(FS)}$	20.95	12.81		

OLS/IV Regressions Comment

One substantial difference is the estimate of supply elasticity from the OLS regression. Here our estimate is much higher than RS. This is because we include the weather (or yield) shock, while RS only use the uninstrumented price. **Removing ω_t lowers $\beta_{s(OLS)}$ to 0.038.**

Hausman Test for Endogeneity

```
## [1] "Supply IV Hausman"

##                    chisq
## [1,] 2.190892 12.59159

## [1] "Supply IV Hausman (no lnw)"

##                   chisq
## [1,] 5.141187 11.0705

## [1] "Demand OLS Hausman"

##                   chisq
## [1,] 5.202777 11.0705
```

Alternate Variable for Supply

Table 2: Using Area or Yield for Supply

	Dependent variable:	
	ln_a	ln_y
	(1)	(2)
ln_fp	0.077***	−0.00000
	(0.021)	(0.00000)
ln_w	0.237**	1.000***
	(0.088)	(0.00000)
Observations	53	53
R^2	0.989	1.000
Adjusted R^2	0.987	1.000
Residual Std. Error (df = 47)	0.011	0.00000
Note:	*p<0.1; **p<0.05; ***p<0.01	

Question 5 and 6

1. The additional seven years of data have only a moderate impact on our results–this could be responsible for some of the differences we see from the published results.
2. The data as posted is in proprietary Stata format, and unnecessarily spread across multiple files. This is not best practice, and makes it more difficult to understand the data structure and contents.