

- a) high demand for gasoline by US \rightarrow market price \uparrow
GC and PG are determined simultaneously by
 \searrow endogenous

b) 1st stage

Dep. var. : PG	
Sample size: 30	
	Coeff
C	7.74
R_{PT}	-0.01
R_{PN}	-3.53
R_{PU}	0.23
R_I	-2.30

2nd stage

Dep. var. : GC	
Sample size: 30	
	Coeff
C	5.01
R_I	0.56
$PG-FIT$	-0.54

predicted
 PG

1% price $\uparrow \rightarrow$ 0.5% GC \downarrow

c) Sargan test checks corr. 2SLS res. with instruments
if so \rightarrow instruments not valid

1) $\text{RES.2SLS} = \text{GC} - (5.01 + 0.56 \text{RI} - 0.54 \text{PG})$

2)

Dep. var: RES.2SLS	
Sample size: 30	
	Coeff
c	-0.21
RPT	-0.05
RPN	0.02
RPU	-0.07
RI	0.06
R ²	0.104

$$\text{Sargan test stat} = \underset{\uparrow}{30} \times \underset{\uparrow}{0.104} = 3.12$$

n R^2

$\chi^2(5-3)$ distribution, 5% cr. 5.99

\rightarrow cannot reject $H_0 \rightarrow$ instruments seem to be valid