

Empirical Exercise 12.1

Calculations for this exercise are carried out in the STATA file **EE_12_1.do**.

(Results using full dataset)

Regressor	Estimation method		
	OLS	TSLS	TSLS
<i>Morekids</i>	-5.39 (0.09) [-5.56, -5.22]	-6.31 (1.27) [-9.81, -3.81]	-5.82 (1.25) [-8.26, -3.38]
<i>Additional Regressors</i>	<i>Intercept</i>	<i>Intercept</i>	<i>Intercept, agem1, black, hispan, othrace</i>
First Stage <i>F</i> -Statistic		1238.2	1280.9

Notes: Standard errors shown in parentheses and 95% confidence intervals are shown in brackets.

- (a) The coefficient is -5.39, which indicates that women with more than 2 children work 5.39 fewer weeks per year than women with 2 or fewer children.
- (b) Both fertility and weeks worked are choice variables. A woman with a positive labor supply regression error (a woman who works more than average) may also be a woman who is less likely to have an additional child. This would imply that *Morekids* is positively correlated with the error, so that the OLS estimator of $\beta_{Morekids}$ is positively biased.
- (c) The linear regression of *morekids* on *samesex* (a linear probability model) yields

$$\widehat{morekids} = 0.346 + 0.068 \text{ samesex}$$

(0.001) (0.002)

so that couples with *samesex* = 1 are 6.6% more likely to have an additional child than couples with *samesex* = 0. The effect is highly significant (*t*-statistic = 35.2)

- (d) *Samesex* is random and is unrelated to *any* of the other variables in the model including the error term in the labor supply equation. Thus, the instrument is exogenous. From (c), the first stage *F*-statistic is large (*F* = 1238) so the instrument is relevant. Together, these imply that *samesex* is a valid instrument.
- (e) No, see the answer to (d).
- (f) See column (2) of the table. The estimated value of $\beta_{Morekids} = -6.31$.
- (g) See column (3) of the table. The results do not change in an important way. The reason is that *samesex* is unrelated to *agem1, black, hispan, othrace*, so that there is no omitted variable bias in IV regression in (2).