12.3. (Results using small dataset)

Regressor	Estimation Method		
	OLS	IV	IV
Morekids	−6.008 (0.259)	−6.033 (3.758)	−5.781 (3.645)
Additional Regressors	*Intercept*	*Intercept*	*Intercept, agem1, black, hispan, othrace*
First Stage *F*-Statistic		143.2	150.9

(a) The coefficient is −6.008 which indicates that women with more than 2 children work 6.008 ~~5.387~~ 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 regression 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

$$\widehat{morekids} = 0.344 + 0.067 samesex$$
$$(0.004)\ (0.006)$$

so that couples with *samesex* = 1 are 6.7% more likely to have an additional child that couples with *samesex* = 0. The effect is highly significant (*t*-statistic = 12.0)

(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* = 143) 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 $\beta_{Morekids} = -6.033$.

(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).