

The Effect of Fertility on Female Labor Supply in Taiwan— An Instrumental Variables Estimation

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- Following Angrist and Evans (1998), we use the sex composition of the first two children as the instrumental variable for fertility.
- The difference between Taiwanese and American parents is that Taiwanese parents have the preference for **at least one son**, rather than mix-sex preference.

Table 1: Fertility and Labor-Supply Measures in Taiwan¹

	1980	1990	2000	1990-2000 change
Married women aged 21-35				
Mean Children ever born	2.43	2.04	1.65	-0.39
Percent with 2 or more children	76.84	71.37	59.10	-12.27
Percent working	23.90	35.80	61.23	25.43
Percent husband working	97.39	95.85	96.14	0.29
Observations	1010007	1103904	740081	
Married women aged 21-35 with 2 or more children				
Mean Children ever born	2.95	2.59	2.36	-0.23
Percent with more than 2 children	62.73	44.95	30.95	-14.00
Percent working	20.54	31.45	56.82	25.37
Percent husband working	97.70	96.44	96.26	-0.18
Observations	776113	787835	437407	

Table 2: Descriptive Statistics, Married women aged 21-35 with 2 or more children¹

	1980 census		1990 census		2000 census	
	mean	s.d	mean	s.d	mean	s.d
Children ever born	2.95	0.95	2.59	0.79	2.36	0.58
More than 2 children	0.627	0.484	0.450	0.497	0.310	0.462
Sex composition of the first 2 children						
boy, boy	0.261	0.439	0.272	0.445	0.265	0.441
boy, girl	0.247	0.431	0.242	0.428	0.247	0.431
girl, boy	0.252	0.434	0.246	0.431	0.252	0.434
girl, girl	0.240	0.427	0.240	0.427	0.237	0.425
Wife's age	29.5	3.5	31.0	3.1	31.4	3.1
Husband's age	35.5	7.3	34.8	4.8	35.3	4.2
Wife's age at first birth	21.7	3.0	22.6	3.1	23.9	3.4
Husband's age at first birth	27.7	6.0	26.5	4.0	27.7	4.1
Wife's working	0.205	0.404	0.314	0.464	0.568	0.495
Husband's working	0.977	0.150	0.964	0.185	0.963	0.190
Observations	776113		787835		437407	

Table 3: Fraction of Having 3rd birth and the sex of 3rd birth by sex composition of first 2 births¹

sex of 1st 2 child	Fraction of sample	Fraction 3rd child	% boy in 3rd birth
1980 census			
boy, boy	0.261	0.552	0.5099
boy, girl	0.247	0.620	0.5110
girl, boy	0.252	0.618	0.5228
girl, girl	0.240	0.727	0.5167
1990 census			
boy, boy	0.272	0.376	0.5164
boy, girl	0.242	0.419	0.5115
girl, boy	0.246	0.416	0.5268
girl, girl	0.240	0.597	0.5317
2000 census			
boy, boy	0.265	0.259	0.5175
boy, girl	0.247	0.281	0.5048
girl, boy	0.252	0.285	0.5257
girl, girl	0.237	0.422	0.5577

Table 4: OLS Estimates of More than Two Children and Number of Children¹

sex composition of children	1980		1990		2000	
	More than 2 children	Number of children	More than 2 children	Number of children	More than 2 children	Number of children
boy, boy (omitted)						
boy, girl	0.0675 [0.0015]**	0.1554 [0.0030]**	0.0434 [0.0015]**	0.0238 [0.0024]**	0.0221 [0.0019]**	0.0287 [0.0024]**
girl, boy	0.0663 [0.0015]**	0.1605 [0.0030]**	0.0406 [0.0015]**	0.0237 [0.0024]**	0.0265 [0.0019]**	0.0331 [0.0024]**
girl, girl	0.1745 [0.0015]**	0.5579 [0.0030]**	0.2212 [0.0015]**	0.4195 [0.0024]**	0.1632 [0.0020]**	0.2342 [0.0025]**
constant	0.5521 [0.0011]**	2.7381 [0.0021]**	0.3759 [0.0011]**	2.4797 [0.0017]**	0.2588 [0.0013]**	2.2865 [0.0017]**
observations	776113	776113	787835	787835	437407	437407
R-squared	0.02	0.05	0.03	0.05	0.02	0.02

Table 5: OLS and 2SLS of Fertility on Labor Force Participation¹

estimate	1980 Census			
	More than 2 children		number of 2 children	
	OLS	2SLS	OLS	2SLS
all married women	-0.0855 [0.0011]**	-0.0518 [0.0072]**	-0.0410 [0.0006]**	-0.0162 [0.0022]**
wife's education < high school	-0.0348 [0.0011]**	-0.0539 [0.0073]**	-0.0207 [0.0006]**	-0.0159 [0.0020]**
wife's education = high school	-0.0992 [0.0034]**	0.0048 [0.0236]	-0.0659 [0.0025]**	0.0037 [0.0147]
wife's education > high school	-0.0568 [0.0067]**	-0.0009 [0.0488]	-0.0327 [0.0050]**	-0.0014 [0.0347]
	1990 Census			
all married women	-0.0808 [0.0012]**	-0.0465 [0.0062]**	-0.0378 [0.0007]**	-0.0216 [0.0030]**
wife's education < high school	-0.0373 [0.0014]**	-0.0450 [0.0069]**	-0.0165 [0.0008]**	-0.0206 [0.0030]**
wife's education = high school	-0.0771 [0.0023]**	-0.0312 [0.0120]**	-0.0422 [0.0016]**	-0.0154 [0.0074]*
wife's education > high school	-0.0914 [0.0054]**	0.054 [0.0377]	-0.053 [0.0040]**	0.0431 [0.0266]

Table 5: OLS and 2SLS of Fertility on Labor Force Participation, ctd.

2000 Census				
estimate	More than 2 children		number of 2 children	
	OLS	2SLS	OLS	2SLS
all married women	-0.0992 [0.0017]**	-0.0978 [0.0116]**	-0.0789 [0.0014]**	-0.0680 [0.0080]**
wife's education < high school	-0.0629 [0.0029]**	-0.1159 [0.0168]**	-0.0513 [0.0021]**	-0.0690 [0.0100]**
wife's education = high school	-0.0967 [0.0024]**	-0.0818 [0.0159]**	-0.0818 [0.0020]**	-0.0621 [0.0120]**
wife's education > high school	-0.0899 [0.0047]**	-0.0385 [0.0472]	-0.0798 [0.0041]**	-0.0327 [0.0393]