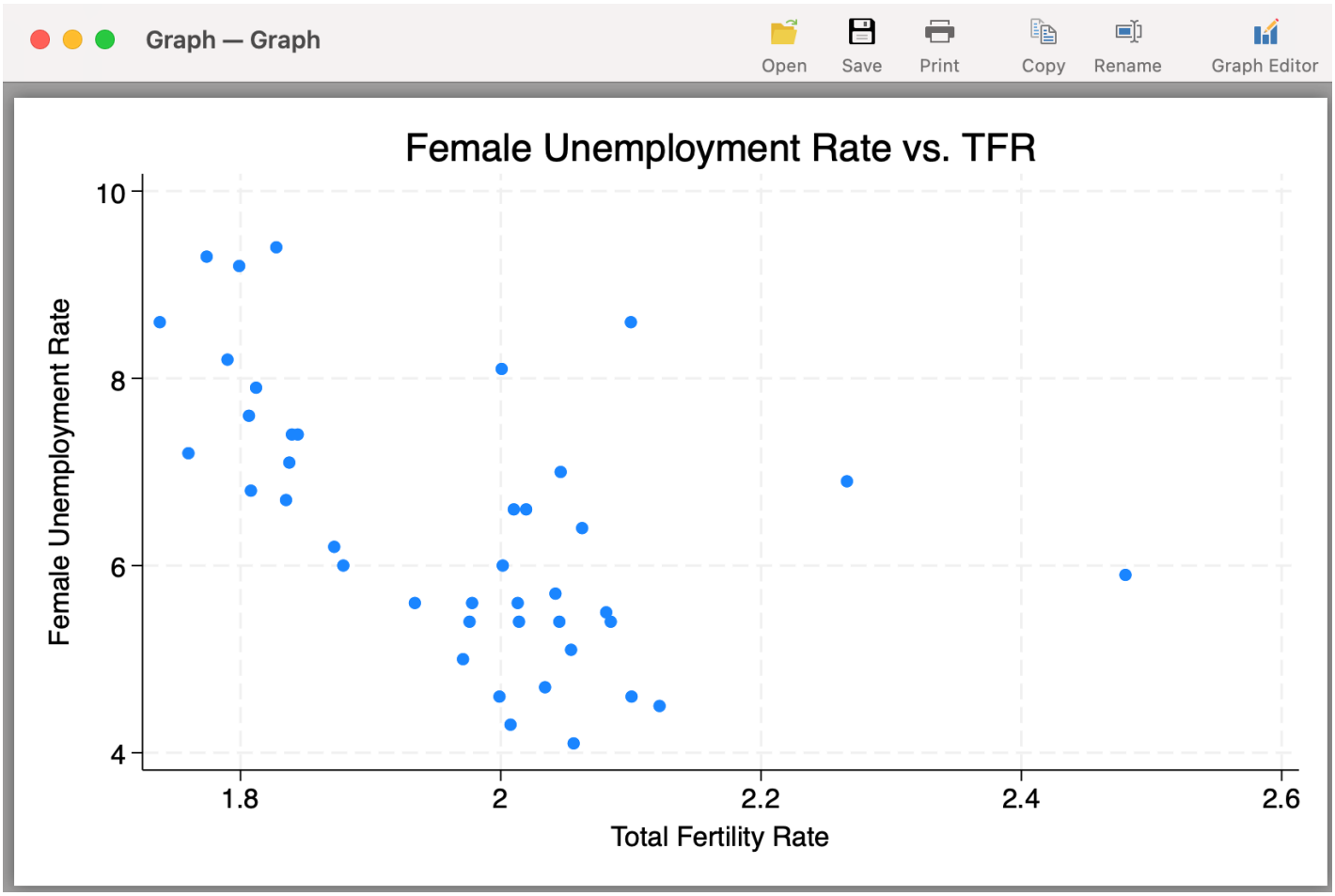
```
. twoway scatter furate tfr, title("Female Unemployment Rate vs. TFR") xtitle("Total Fertility Rate") ytitle("Female U
> nemployment Rate")
```




```
. reg furate tfr
```

Source	SS	df	MS	Number of obs	=	41
				F(1, 39)	=	15.20
Model	23.2642526	1	23.2642526	Prob > F	=	0.0004
Residual	59.6806254	39	1.53027245	R-squared	=	0.2805
				Adj R-squared	=	0.2620
Total	82.944878	40	2.07362195	Root MSE	=	1.237

furate	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
tfr	-5.171055	1.32623	-3.90	0.000	-7.853608	-2.488501
_cons	16.6099	2.618184	6.34	0.000	11.31412	21.90568

The coefficient on TFR is -5.171, so TFR has a negative relationship with the female unemployment rate. Since the p-value for TFR is 0.000, which is less than 0.05, TFR does have a statistically significant effect on the female unemployment rate.

```
. reg furate tfr urban
```

Source	SS	df	MS	Number of obs	=	41
				F(2, 38)	=	10.92
Model	30.2651989	2	15.1325995	Prob > F	=	0.0002
Residual	52.6796791	38	1.38630735	R-squared	=	0.3649
				Adj R-squared	=	0.3315
Total	82.944878	40	2.07362195	Root MSE	=	1.1774

furate	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
tfr	-3.765939	1.408676	-2.67	0.011	-6.617655	-.914223
urban	-.1578274	.0702318	-2.25	0.031	-.3000042	-.0156506
_cons	25.92966	4.838322	5.36	0.000	16.13499	35.72433

After adding urbanization, the coefficient on TFR is -3.765 and the coefficient on urbanization is -0.158. TFR still has a statistically significant effect on the female unemployment rate because its p-value is 0.011, which is below 0.05.

```
. ivregress 2sls furate urban (tfr = marriage), first

First-stage regressions
-----------------------

                                      Number of obs =     41
                                      F(2, 38)      =   5.58
                                      Prob > F      = 0.0075
                                      R-squared     = 0.2270
                                      Adj R-squared = 0.1863
                                      Root MSE      = 0.1330

------------------------------------------------------------------------------
         tfr | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
       urban |   .0703535   .0403464     1.74   0.089    -.0113236    .1520307
    marriage |     .11625   .0957379     1.21   0.232    -.0775613    .3100614
       _cons |  -4.493935   3.964378    -1.13   0.264     -12.5194    3.531528
------------------------------------------------------------------------------

Instrumental-variables 2SLS regression          Number of obs   =         41
                                                Wald chi2(2)    =       8.85
                                                Prob > chi2     =     0.0120
                                                Root MSE        =     1.6789

------------------------------------------------------------------------------
      furate | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         tfr |  -13.25359   10.39329    -1.28   0.202    -33.62405    7.116881
       urban |    .052131   .2468866     0.21   0.833    -.4317578    .5360197
       _cons |   28.53048   7.443828     3.83   0.000     13.94085    43.12012
------------------------------------------------------------------------------
Endogenous: tfr
Exogenous:  urban marriage
```

Using marriage rate as an instrumental variable for TFR, the coefficient on TFR is -13.254, but the p-value is 0.202. Since 0.202 is greater than 0.05, TFR does not have a statistically significant effect on the female unemployment rate in the two-stage least squares regression.