The Power of Marriage:
The Causal Effect of Parental Marital Status on Child's Earnings

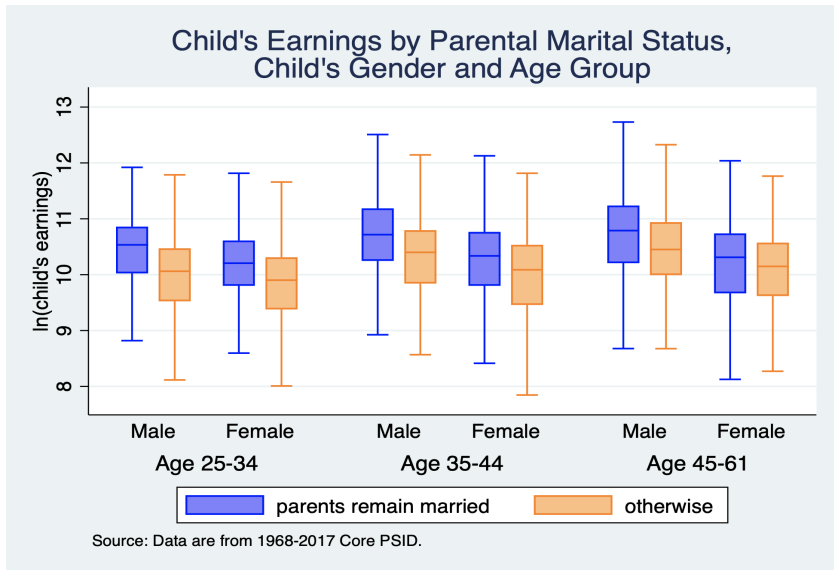Bob Wen

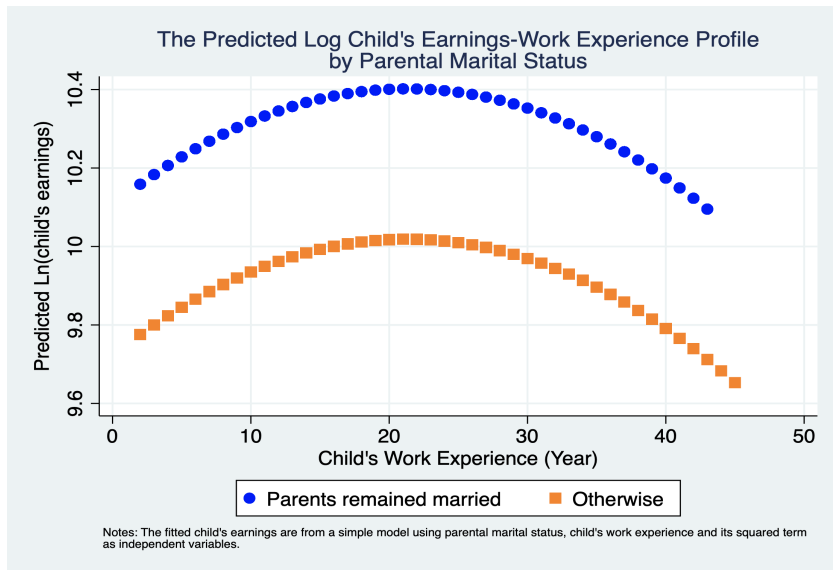Economics Department, Clemson University

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Outline

This presentation is the empirical part of my research about the causal effects of parental marital status on the child's earnings.

- ✠ Motivation.
- ✠ Research questions and hypotheses.
- ✠ Identification challenges and specification strategy.
- ✠ Descriptive statistics.
- ✠ OLS regression and post-estimation analysis.
- ✠ Endogeneity and sample selection.
- ✠ Panel data regression.

Child's Earnings by Parental Marital Status

Child's Earnings by Parental Marital Status, Child's Gender and Age Group

Source: Data are from 1968-2017 Core PSID.

Child's Earnings-Work Experience Profile by Parental Marital Status

The Predicted Log Child's Earnings-Work Experience Profile by Parental Marital Status

Notes: The fitted child's earnings are from a simple model using parental marital status, child's work experience and its squared term as independent variables.

Research Question and Hypotheses

✠ Question: Can parental marital status during childhood explain the child's adult earnings after controlling for other factors?

✠ Parental marriage effect on child's earnings hypotheses:

- A stable marital relationship has a positive and significant effect on the child's adult earnings. The influence goes through three channels: the "investment in child's education" channel, the "intergenerational marriage persistence" channel, and the unobserved "endowment transmission" channel.
- The parental marriage effect interacts with parental family income and parental education. The parental marriage effect on child's earnings is stronger when parental income is higher or when the child comes from a highly educated family. It is higher for sons than for daughters.

Identification Challenges

Two endogeneity issues that may lead to inconsistent OLS estimates:

- ✠ Omitted parental variable bias. How to disentangle the effect of parental marital status from other parental factors.

- ✠ Endogenous sample selection. How to deal with endogenous sample selection due to child's labour force participation choice.

Specification Strategies

⚔ Add relevant parental variables: Include parental family income and parental educational attainment in the model to rule out the parental income and education effects.

⚔ Sample selection bias correction: Take into account the child's decision of participating in the labour market by running a selection probit model and then use the predicted probability of LFP or the IMR as an additional regressor.
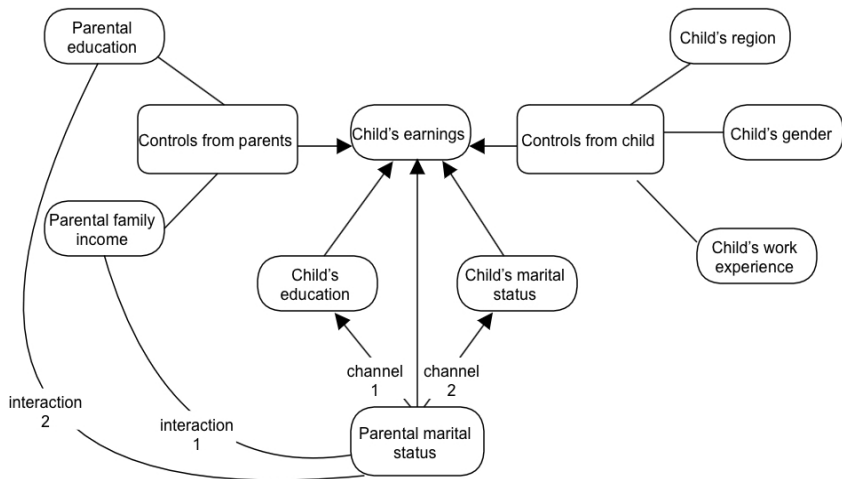
Total Effect and Direct Effect: A Simplified Path Diagram of SEM

Child's education attainment and child's marital status are the endogenous mediator variables that help to explain the mechanism through which parental marital status affects child's earnings.
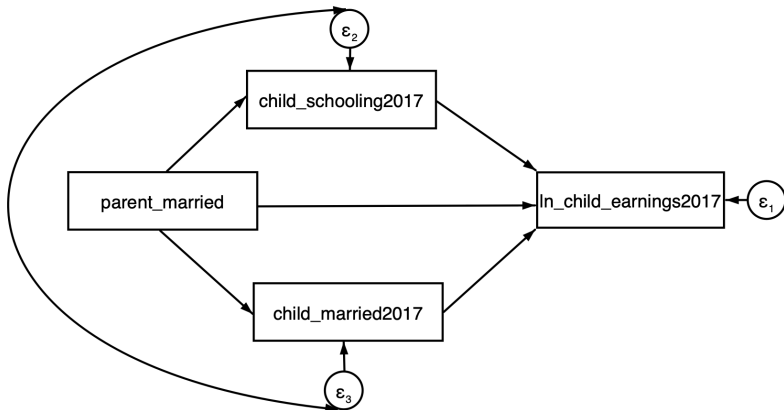
A simplified path graph.

Regression Framework and Variables

Descriptive Statistics: Table

Dependent variable								
Descriptive Statistics	number of obs.	min	p25	median	p75	max	mean	sd
child's earnings (2000 USD)	4,593	23	17,287	29,703	46,600	1,593,405	37,943	45,161
ln(child's earnings)	4,593	3.12	9.76	10.30	10.75	14.28	10.54	1.00
Explanatory variables								
Continuous variables								
Descriptive Statistics	number of obs.	min	p25	median	p75	max	mean	sd
parental family income (2000 USD)	4,593	1,298	25,060	41,891	61,235	1,509,629	48,970	45,255
ln(parental family income)	4,593	7.17	10.13	10.64	11.02	14.23	10.80	0.72
child's schooling	4,593	7	12	14	16	17	14.18	2.08
child's work exp	4,593	2	11	17	27	45	19.40	10.61
Categorical variables								

parental marital status	Freq.	Percent	Cum.		parental education	Freq.	Percent	Cum.
parents remain married	2,509	54.63	54.63		LHS	446	9.71	9.71
otherwise	2,084	45.37	100.00		HS	1,762	38.36	48.07
Total	4,593	100.00			SoC	942	20.51	68.58
					Coll	1,443	31.42	100.00
					Total	4,593	100.00	

Descriptive Statistics: Figures
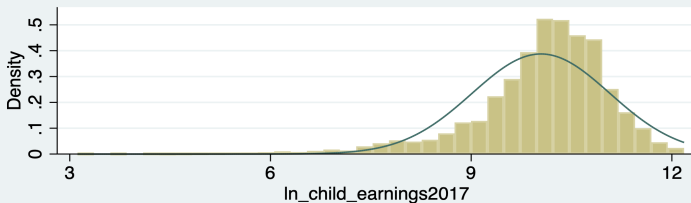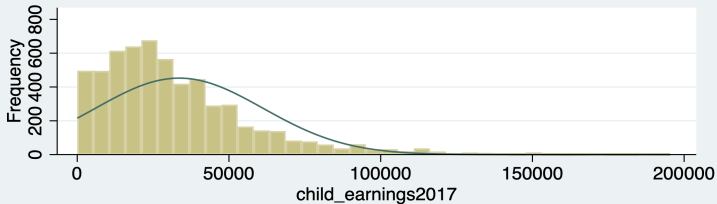
Descriptive Statistics: Figures
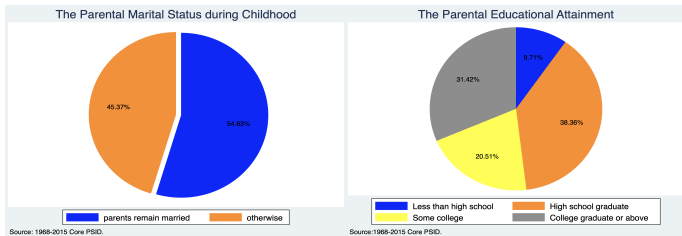
(a)

(b)
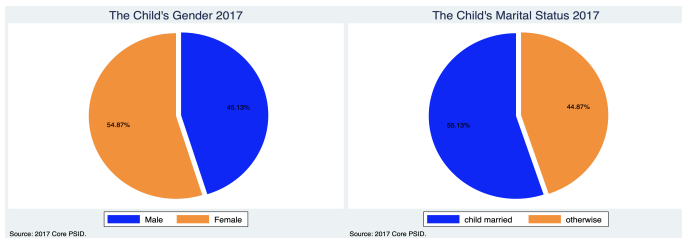
(c)

(d)

Structural Equation Modelling (SEM)

- Model 1: Direct effect model

$$
\begin{aligned}
ln(child\_earnings) = \beta_0 & + \beta_1 parent\_marital\_status \\
& + \beta_2 ln(parent\_family\_income) + \beta_3 parent\_education \\
& + \beta_4 child\_schooling + \beta_5 child\_marital\_status \\
& + \beta_6 child\_experience + \beta_7 child\_experience^2 \\
& + \beta_8 child\_gender + \beta_9 child\_region \\
& + \varepsilon
\end{aligned}
\tag{1}
$$

- Model 2: "Investment in child's education" channel model

$$
\begin{aligned}
child\_schooling = \gamma_0 & + \gamma_1 parent\_marital\_status \\
& + \gamma_2 ln(parent\_family\_income) + \gamma_3 parent\_education \\
& + \gamma_4 child\_experience + \gamma_5 child\_experience^2 \\
& + \gamma_6 child\_gender + \gamma_7 child\_region \\
& + u
\end{aligned}
\tag{2}
$$

Structural Equation Modelling (SEM)

- Model 3: "Intergenerational marriage persistence" channel model

$$
\begin{aligned}
child\_marital\_status = \lambda_0 &+ \lambda_1 parent\_marital\_status \\
&+ \lambda_2 ln(parent\_family\_income) + \lambda_3 parent\_education \\
&+ \lambda_4 child\_experience + \lambda_5 child\_experience^2 \\
&+ \lambda_6 child\_gender + \lambda_7 child\_region \\
&+ v
\end{aligned}
\tag{3}
$$

- Model 4: Total effect model

$$
\begin{aligned}
ln(child\_earnings) = \alpha_0 &+ \alpha_1 parent\_marital\_status \\
&+ \alpha_2 ln(parent\_family\_income) + \alpha_3 parent\_education \\
&+ \alpha_4 child\_experience + \alpha_5 child\_experience^2 \\
&+ \alpha_6 child\_gender + \alpha_7 child\_region \\
&+ \varepsilon
\end{aligned}
\tag{4}
$$

Direct Parental Marital Effect Model

After controlling for the two parental factors and the two channels (child's education and marital status), the direct effect of parental marriage on child's earnings is positive but not significant. (3.5%)

```
Linear regression                          Number of obs   =      4,593
                                           F(14, 4578)     =      86.80
                                           Prob > F        =     0.0000
                                           R-squared       =     0.2138
                                           Root MSE        =        .89
```

ln_child_earnings2017	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
parent_married						
parents remain married	.0350549	.0312058	1.12	0.261	−.0261235	.0962332
otherwise	0	(base)				
ln_parent_family_income	.204586	.023963	8.54	0.000	.157607	.251565
parent_edu						
LHS	0	(base)				
HS	.033666	.04877	0.69	0.490	−.0619468	.1292788
SoC	.0604882	.0549234	1.10	0.271	−.0471882	.1681646
Coll	.0406791	.0546339	0.74	0.457	−.0664296	.1477878
child_schooling2017	.1541879	.0078435	19.66	0.000	.1388109	.169565
child_married2017						
otherwise	0	(base)				
child married	.1391481	.0280763	4.96	0.000	.084105	.1941912
child_gender2017						
Male	.3680353	.0271895	13.54	0.000	.3147308	.4213397
Female	0	(base)				
child_region2017						
Northeast	0	(base)				
North central	−.1033743	.0458801	−2.25	0.024	−.1933214	−.0134273
South	−.072516	.0428179	−1.69	0.090	−.1564597	.0114278
West	−.0611073	.051535	−1.19	0.236	−.1621408	.0399262
Other	−.1961175	.2030474	−0.97	0.334	−.5941884	.2019534
child_exp2017	.0399892	.0059037	6.77	0.000	.0284152	.0515633
c.child_exp2017#c.child_exp2017	−.0006857	.0001374	−4.99	0.000	−.0009551	−.0004163
_cons	5.136654	.2618993	19.61	0.000	4.623205	5.650103

The "Investment in Child's Education" Channel

The parental marriage has a positive and significant effect on child's educational attainment.

```
Linear regression                          Number of obs   =       4,593
                                           F(12, 4580)     =      199.72
                                           Prob > F        =      0.0000
                                           R-squared       =      0.2791
                                           Root MSE        =      1.7651


                                        Robust
          child_schooling2017    Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]

              parent_married
       parents remain married   .3815923   .0609873    6.26   0.000    .2620278    .5011568
                    otherwise          0   (base)

      ln_parent_family_income    .688114   .0466061   14.76   0.000    .5967437    .7794844

                   parent_edu
                          LHS          0   (base)
                           HS   .0391339   .1026387    0.38   0.703   -.1620875    .2403553
                          SoC    .829937   .1157866    7.17   0.000    .6029394    1.056934
                         Coll   1.259345   .1171521   10.75   0.000    1.02967     1.48902

             child_gender2017
                         Male  -.4619747   .0525045   -8.80   0.000   -.5649087   -.3590406
                       Female          0   (base)

             child_region2017
                    Northeast          0   (base)
                North central  -.2203972   .087411    -2.52   0.012   -.3917648   -.0490296
                        South  -.1239469   .082007    -1.51   0.131   -.2847201    .0368263
                         West  -.1321201   .0949135   -1.39   0.164   -.3181964    .0539561
                        Other   .0454753   .3125919    0.15   0.884   -.5673556    .6583062

              child_exp2017    -.0308009   .0105675   -2.91   0.004   -.0515184   -.0100835

c.child_exp2017#c.child_exp2017  5.92e-06   .0002346    0.03   0.980   -.0004541    .0004659

                        _cons   7.063028   .5004654   14.11   0.000    6.081875    8.044181
```

The "Marriage Attitude Transmission" Channel

The parental marriage has a positive and significant effect on child's decision of marriage.

```
Linear regression                          Number of obs    =      4,593
                                           F(12, 4580)      =      33.01
                                           Prob > F         =     0.0000
                                           R-squared        =     0.0709
                                           Root MSE         =     .48009
```

child_married2017	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
parent_married						
parents remain married	.1230458	.0167115	7.36	0.000	.0902833	.1558084
otherwise	0	(base)				
ln_parent_family_income	.0749037	.0129568	5.78	0.000	.0495022	.1003052
parent_edu						
LHS	0	(base)				
HS	.0471531	.0263267	1.79	0.073	-.00446	.0987662
SoC	.0358459	.0296102	1.21	0.226	-.0222043	.0938962
Coll	.0592703	.0296566	2.00	0.046	.001129	.1174116
child_gender2017						
Male	.0785248	.0143743	5.46	0.000	.0503442	.1067054
Female	0	(base)				
child_region2017						
Northeast	0	(base)				
North central	.0166542	.0240123	0.69	0.488	-.0304215	.06373
South	-.0354837	.0226689	-1.57	0.118	-.0799258	.0089583
West	.0021983	.0266363	0.08	0.934	-.0500216	.0544182
Other	.0685163	.0874366	0.78	0.433	-.1029015	.2399342
child_exp2017	.0222247	.0030123	7.38	0.000	.0163191	.0281303
c.child_exp2017#c.child_exp2017	-.0003913	.0000665	-5.88	0.000	-.0005217	-.0002608
_cons	-.6151217	.1369763	-4.49	0.000	-.8836613	-.346582

Total Parental Marital Effect Model

After controlling for parental family income and parental education, the parental marriage has a positive and significant effect on child's adult earnings. (11.1% or more precisely 11.7%)

```
Linear regression                        Number of obs   =      4,593
                                         F(12, 4580)     =      57.33
                                         Prob > F        =     0.0000
                                         R-squared       =     0.1320
                                         Root MSE        =     .93495
```

ln_child_earnings2017	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
parent_married						
parents remain married	.1110134	.0317805	3.49	0.000	.0487083	.1733185
otherwise	0	(base)				
ln_parent_family_income	.3211076	.0250233	12.83	0.000	.2720498	.3701654
parent_edu						
LHS	0	(base)				
HS	.0462612	.0517401	0.89	0.371	-.0551743	.1476967
SoC	.1934423	.0578739	3.34	0.001	.0799816	.3069031
Coll	.2431022	.0575844	4.22	0.000	.130209	.3559955
child_gender2017						
Male	.307731	.0278876	11.03	0.000	.2530578	.3624041
Female	0	(base)				
child_region2017						
Northeast	0	(base)				
North central	-.1350395	.0475436	-2.84	0.005	-.2282478	-.0418312
South	-.0965646	.0442838	-2.18	0.029	-.1833822	-.0097469
West	-.0811727	.0533216	-1.52	0.128	-.1857089	.0233634
Other	-.1795718	.1995362	-0.90	0.368	-.5707589	.2116153
child_exp2017	.0383326	.0060504	6.34	0.000	.0264709	.0501943
c.child_exp2017#c.child_exp2017	-.0007392	.0001403	-5.27	0.000	-.0010143	-.0004642
_cons	6.140095	.2703893	22.71	0.000	5.610001	6.670188

GSEM model result

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
ln_child_earnings2017						
child_schooling2017	.1541879	.0078315	19.69	0.000	.1388384	.1695374
parent_married						
parents remain married	.0350549	.0311582	1.13	0.261	-.026014	.0961237
otherwise	0 (base)					
ln_parent_family_income	.204586	.0239264	8.55	0.000	.1576911	.2514889
parent_edu						
LHS	0 (base)					
HS	.033666	.0486956	0.69	0.489	-.0617757	.1291077
SoC	.0604882	.0548396	1.10	0.270	-.0469955	.1679719
Coll	.0846791	.0545585	0.75	0.456	-.0662379	.1475961
child_married2017						
otherwise	0 (base)					
child married	.1391481	.0288335	4.96	0.000	.0842035	.1940927
child_gender2017						
Male	.3680353	.027148	13.56	0.000	.3148262	.4212444
Female	0 (base)					
child_region2017						
Northeast	0 (base)					
North central	-.1033743	.0459101	-2.26	0.024	-.1931604	-.0135883
South	-.072516	.0427526	-1.70	0.090	-.1563895	.0113376
West	-.0611873	.0514564	-1.19	0.235	-.16196	.0397454
Other	-.1061175	.2027377	-0.97	0.333	-.593476	.2052411
child_exp2017	.0390892	.0058947	6.78	0.000	.0264359	.0515426
c.child_exp2017#c.child_exp2017	-.0006857	.0001372	-5.00	0.000	-.0009546	-.0004168
_cons	5.136654	.2614998	19.64	0.000	4.624124	5.649184
child_schooling2017						
parent_married						
parents remain married	.3815923	.0609076	6.27	0.000	.2622156	.500969
otherwise	0 (base)					
ln_parent_family_income	.688114	.0465451	14.78	0.000	.5968873	.7793408
parent_edu						
LHS	0 (base)					
HS	.0391339	.1025045	0.38	0.703	-.1617713	.2400391
SoC	.929937	.1156352	8.04	0.000	.6832961	1.456528
Coll	1.259345	.1169989	10.76	0.000	1.030031	1.488659
child_gender2017						
Male	-.4619747	.0524358	-8.81	0.000	-.5647469	-.3592024
Female	0 (base)					
child_region2017						
Northeast	0 (base)					
North central	-.2283922	.0872967	-2.52	0.012	-.3914955	-.0492988
South	-.1239469	.0818097	-1.51	0.130	-.2844675	.0365736
West	-.1321281	.0967894	-1.29	0.363	-.213708	.0853033
Other	-.5639926	.3121897				
child_exp2017	-.0388809	.0105537	-2.92	0.004	-.0514858	-.010116
c.child_exp2017#c.child_exp2017	5.92e-06	.0002343	0.03	0.980	-.0004534	.0004652
_cons	7.063028	.499811	14.13	0.000	6.083417	8.04264
child_m2						
parent_married						
parents remain married	.1230458	.0166896	7.37	0.000	.0903347	.1557569
otherwise	0 (base)					
ln_parent_family_income	.0749037	.0129398	5.79	0.000	.0495421	.1002653
parent_edu						
LHS	0 (base)					
HS	.0471531	.0262921	1.79	0.073	-.0043789	.0986851
SoC	.0358459	.0295715	1.21	0.225	-.0221131	.093885
Coll	.0592703	.0296179	2.00	0.045	.0012204	.1173282
child_gender2017						
Male	.0785248	.0143555	5.47	0.000	.0503885	.1066611
Female	0 (base)					
child_region2017						
Northeast	0 (base)					
North central	-.0166542	.0239889	-0.69	0.487	-.0383475	.063656
South	-.0354837	.0226393	-1.57	0.117	-.0798559	.0088886
West	-.0021983	.0260014	-0.08	0.934	-.0499396	.0543362
Other	.0685163	.0873223	0.78	0.433	-.1026322	.2396648
child_exp2017	.0222247	.0030084	7.39	0.000	.0163283	.028131
c.child_exp2017#c.child_exp2017	-.0003913	.0000665	-5.89	0.000	-.0005215	-.0002611
_cons	-.6151217	.1367972	-4.50	0.000	-.8832393	-.347004
var(e.ln_child_earnings2017)	.7895844	.0339412			.7258072	.8586983
var(e.child_schooling2017)	3.186614	.0597353			2.991714	3.394202
var(e.child_m2)	.2298329	.0019284			.2260097	.2336278
cov(e.child_schooling2017,e.child_m2)	.089823	.0123913	7.25	0.000	.0655365	.1141095

Direct effect

Channel 1

Channel 2

SEM Models Result

Specifications	Model 1: Direct Effect	Model 2: Investment channel	Model 3: Marriage channel	Model 4: Total Effect
Dependent variable	Ln(child's earnings)	Child's schooling	Child's marital status	Ln(child's earnings)
Explanatory variables				
Parent's variables in childhood				
Parental marital status				
remain married	0.035	0.382***	0.123***	0.111***
otherwise	base	base	base	base
Ln(Parental family income)	0.205***	0.688***	0.075***	0.321***
Parental education	O	O	O	O
Child's variables in adulthood				
Child's years of chooling	0.154***	X	X	X
Child's marital status				
married	0.139***	X	X	X
otherwise	base	X	X	X
Child's work experience and its squared term	O	O	O	O
Child's gender	O	O	O	O
Child's region	O	O	O	O
Number of obs.	4,593	4,593	4,593	4,593
R-squared	0.214	0.279	0.071	0.132

Notes: O: variable included in model; X: variable not included in model.
Child's information is from Core PSID 2017 and their parents' information is from Core PSID 1968 to 2015.
Children's adult earnings and their parent's family income have been adjusted to 2000 USD using PCE.
***p-value<0.001; **p-value<0.01; *p-value<0.1.

## The Decomposition of Total Parental Marriage Effects on Child's Earnings

The decomposition of the total effects of parental marital status on child's earnings				
Direct effect $(\hat{\beta}_1)$	Indirect effect through "Investment in child's education" channel $(\hat{\beta}_4 \times \hat{\gamma}_1)$	Indirect effect through "Marriage attitude transmission" channel $(\hat{\beta}_5 \times \hat{\lambda}_1)$	Indirect effect $(\hat{\beta}_4 \times \hat{\gamma}_1 + \hat{\beta}_5 \times \hat{\lambda}_1)$	Total effects $(\hat{\beta}_1 + \hat{\beta}_4 \times \hat{\gamma}_1 + \hat{\beta}_5 \times \hat{\lambda}_1)$ or $(\hat{\alpha}_1)$
0.035	0.059***	0.017***	0.076***	0.111***

Notes: ***p-value<0.001; **p-value<0.01; *p-value<0.1.

- It can be done manually or using sem and gsem.
- The total effect of a successful parental marriage on child's earnings is 0.111, meaning that the workers who grew up in homes in which their parents remained married earn 11.1% (or precisely 11.7%) more than their counterparts who were raised by divorced or separated parents, holding other factors constant.
- This total effect can be decomposed into the direct effect and the indirect effect. The former is the effect after controlling for both the "investment in child's education" channel and the "intergenerational marriage persistence" channel. It is positive but not significant. The latter is the effect through the two channels, which is 0.076.
- The percentage of the total effect that is mediated through the two intergenerational transmission channels is 0.076/0.111=68.5%.
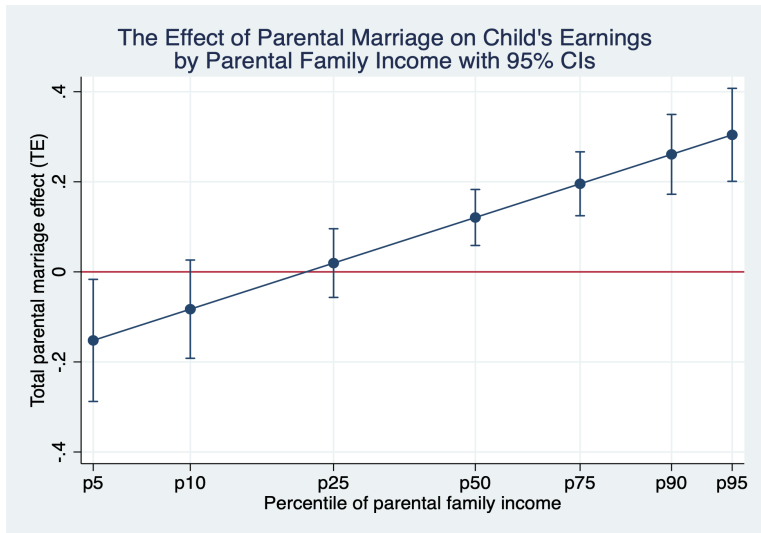
Properties of the Parental Marriage Effect on Child's Earnings

The parental marriage effect and the parental family income effect reinforce with each other. The earnings gap between the two "parental marital" groups is larger and significant for the workers from higher parental income families.
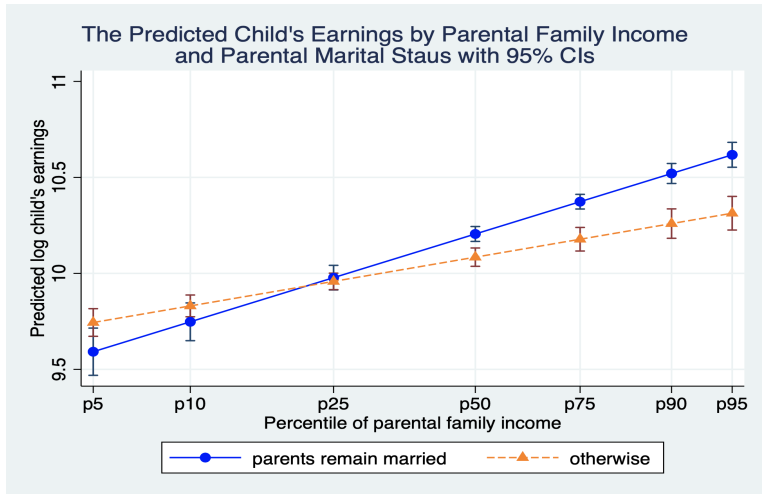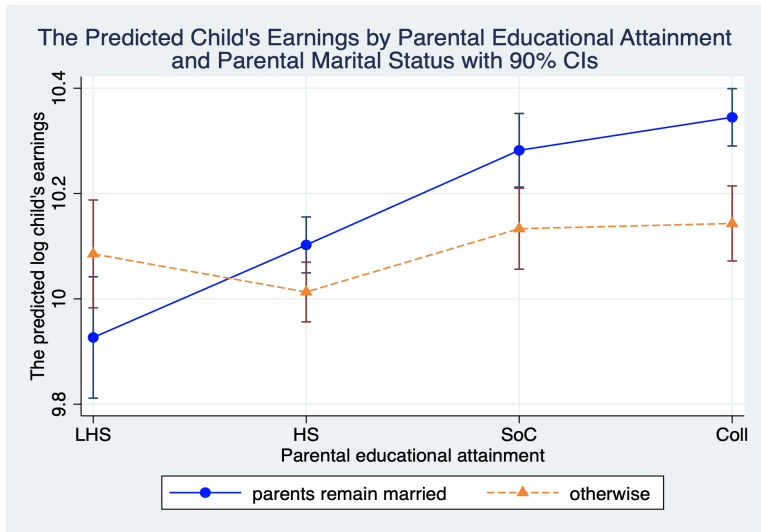

The Predicted Child's Earnings by Parental Family Income and Parental Marital Staus with 95% CIs

Properties of the Parental Marriage Effect on Child's Earnings

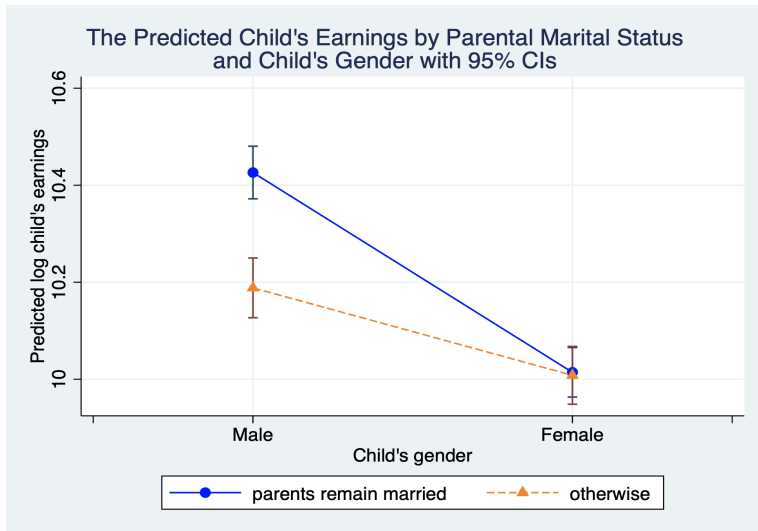The parental marriage effect on child's earnings increases with parental family income.

Properties of the Parental Marriage Effect on Child's Earnings

The earnings gap between the two parental marital groups is larger and significant for workers who have highly educated parents.


The Predicted Child's Earnings by Parental Educational Attainment and Parental Marital Status with 90% CIs

Properties of the Parental Marriage Effect on Child's Earnings

The child's earnings gap between the two parental marital groups is larger for sons than for daughters.

The Predicted Child's Earnings by Parental Marital Status and Child's Gender with 95% CIs

Properties of the Parental Marriage Effect on Child's Earnings

After controlling for parental income and education, as well as child's demographic characteristics, the child's earnings-work experience profile is significantly different between the two parental marital groups from 9 to 26 years of experience.

The Predicted Child's Earnings-Work Experince Profile by Parental Marital Status with 95% CIs
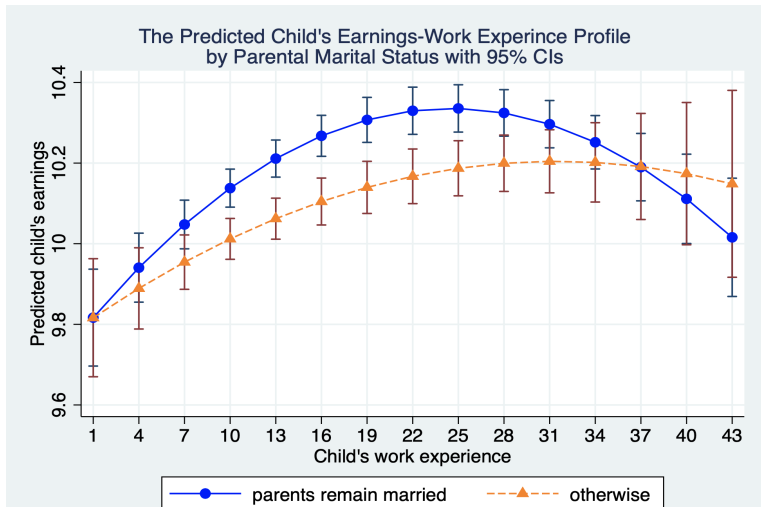
The Summary of Properties of Parental Marriage Effect

The causal effect of successful parental marriage on child's earnings is about 10% on average. It varies with factors. It is greater and more significant

- ✠ for those whose parental families have more resources during childhood;
- ✠ for those whose parents are highly educated;
- ✠ for sons;
- ✠ for those who are in the middle of their career.

For instance, a male worker who grew up in an intact family, whose parent was a college graduate and the average parental family annual income was 61,235 (the 75 percentile, in 2000 USD) during his childhood earns 23.2% more than his counterparts with same backgrounds but grew up in divorced or separated families.

Endogenous Sample Selection

The observations are from the workers who participate in the labour market. The unobserved factors behind the labour force participation decisions could be correlated to the parental marital status. The solution is to use Heckman's two-step:

Step one:

Selection equation: $prob(LFP = 1) = \Phi(\lambda_0 + \lambda_1 \, number\_of\_children$

$+ \lambda_2 \, non\_labour\_income$

$+ exogenous\_variables\_in\_earnings\_equation)$

Step two:

Earnings equation: $ln(child\_earnings) = \beta_0 + \beta_1 \, parent\_marital\_status$

$+ exogenous\_variables$

$+ \alpha IMR + \varepsilon \qquad\qquad if \quad LFP = 1$

where IMR is from the selection equation.

OLS and Selection Correction Models

| Dependent var: Ln(child's earnings)	Direct Effect Models		Total Effect Models	
Method	OLS	Selection Correction	OLS	Selection Correction
Explanatory variables				
Parent's variables in childhood				
Parental marital status				
parents remain married	0.035	0.036	0.111***	0.106***
otherwise	base	base	base	base
Ln(parental family income)	0.205***	0.196***	0.321***	0.296***
Parental education	O	O	O	O
Child's variables in adulthood				
Child's schooling	0.154***	0.146***	X	X
Child's marital status				
married	0.139***	0.143***	X	X
otherwise	base	base	X	X
Child's gender				
male	0.368***	0.350***	0.308***	0.284***
female	base	base	base	base
Child's region	O	O	O	O
Child's work experience and its squared term	O	O	O	O
Inverse Mills Ratio	X	-0.209	X	-0.369*
Number of obs.	4,593	4,593	4,593	4,593
R-squared	0.214	0.214	0.132	0.133

Notes: ***p-value<0.01; **p-value<0.05; *p-value<0.1. O: variable included in model; X: variable not included in model.

Panel Data Regression

| Dependent var: Ln(child's earnings)	Models for Total Parental Marriage Effect		
Explanatory variables	Pooled OLS	Individual Random Effect (RE)	RE+Selection Correction
Parent's variables in childhood			
Parental marital status			
parents remain married	0.107***	0.129***	0.120***
otherwise	base	base	base
Ln(parental family income)	0.336***	0.339***	0.295***
Parental education	O	O	O
Child's variables in adulthood			
Child's gender			
male	0.378***	0.434***	0.387***
female	base	base	base
Child's region	O	O	O
Child's work experience and its squared term	O	O	O
Year fixed effect	O	O	O
Inverse Mills Ratio	X	X	-0.603***
Number of obs.	14,283	14,283	14,283
R-squared within	X	0.039	0.041
between	X	0.144	0.147
overall	0.136	0.134	0.136
Variance sigma_u	X	0.924	0.922
sigma_e	1.013	0.591	0.591
rho (fraction of variance due to u_i)	X	0.709	0.709

Notes: ***p-value<0.01; **p-value<0.05; *p-value<0.1. O: variable included in model; X: variable not included in model.

The Total Parental Marriage Effect on Child's Earnings over Time

The Trend of Child's Earnings over Time by Parental Marital Status with 90% CIs
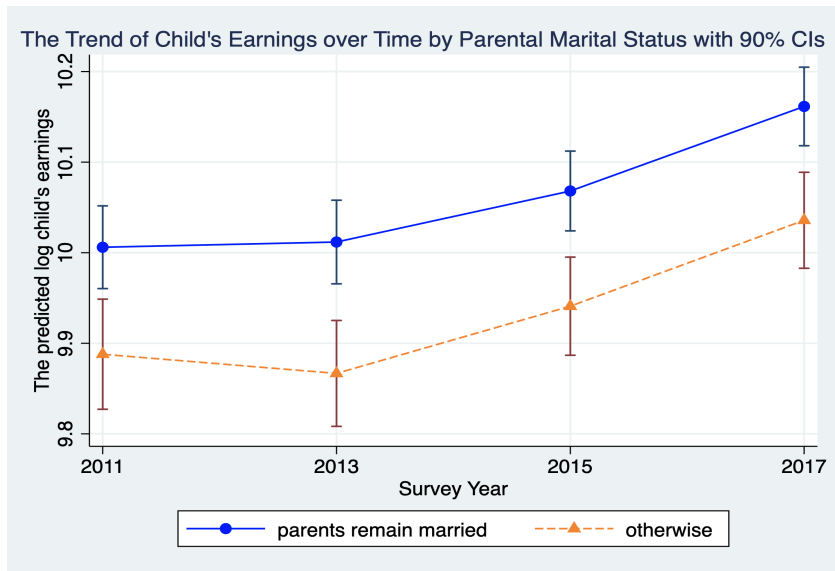
Intergenerational Relative Earnings Change

The inter-generational earnings quintile change

34.51%

29.22%

36.27%
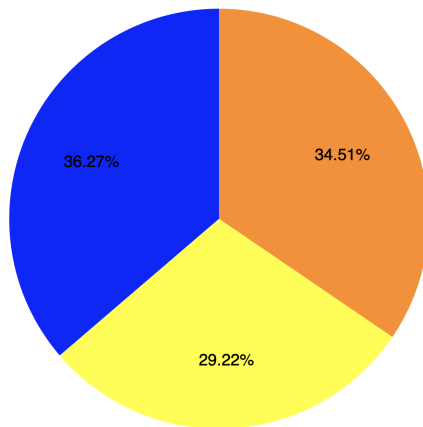
▮ worse: child in lower quintile   ▮ unchanged: child in same quintile
▮ better: child in higher quintile

Source:1968-2017 Core PSID.

Ordered Dependent Variable Regression

```
Ordered probit regression                    Number of obs   =      4,593
                                             Wald chi2(12)   =    1961.33
                                             Prob > chi2     =     0.0000
Log pseudolikelihood = -4213.2791            Pseudo R2       =     0.1618
```

rela_earnings_change2	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
parent_married						
otherwise	0	(base)				
parents remained married	.1726104	.0422868	4.08	0.000	.0897298	.255491
parent_earnings_quintile	-.541104	.0160019	-33.81	0.000	-.5724672	-.5097408
parent_edu						
LHS	0	(base)				
HS	.1273409	.0621313	2.05	0.040	.0055659	.249116
SoC	.3343702	.0712565	4.69	0.000	.1947101	.4740303
Coll	.3422986	.072009	4.75	0.000	.2011636	.4834336
child_gender2017						
Male	.4099056	.0361922	11.33	0.000	.3389703	.480841
Female	0	(base)				
child_exp2017	.0636324	.0077156	8.25	0.000	.0485101	.0787547
c.child_exp2017#c.child_exp2017	-.0010871	.0001713	-6.35	0.000	-.0014228	-.0007514
child_region2017						
Northeast	0	(base)				
North central	-.2038849	.0601218	-3.39	0.001	-.3217215	-.0860484
South	-.1854392	.0566521	-3.27	0.001	-.2964752	-.0744031
West	-.0970326	.0671285	-1.45	0.148	-.2286019	.0345368
Other	-.26471	.2393988	-1.11	0.269	-.7339231	.2045031
/cut1	-1.073265	.1076541			-1.284263	-.862267
/cut2	-.1104697	.1082302			-.322597	.1016577

	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf. Interval]	
0.parent_m~d	(base outcome)					
1.parent_m~d						
_predict						
1	-.049173	.0118357	-4.15	0.000	-.0723705	-.0259754
2	-.001123	.0005284	-2.13	0.034	-.0021586	-.0000875
3	.050296	.012045	4.18	0.000	.0266882	.0739038

Note: dy/dx for factor levels is the discrete change from the base level.

The Probability of Inter-generational Relative Earnings Change by Experience and Parental Marital Status
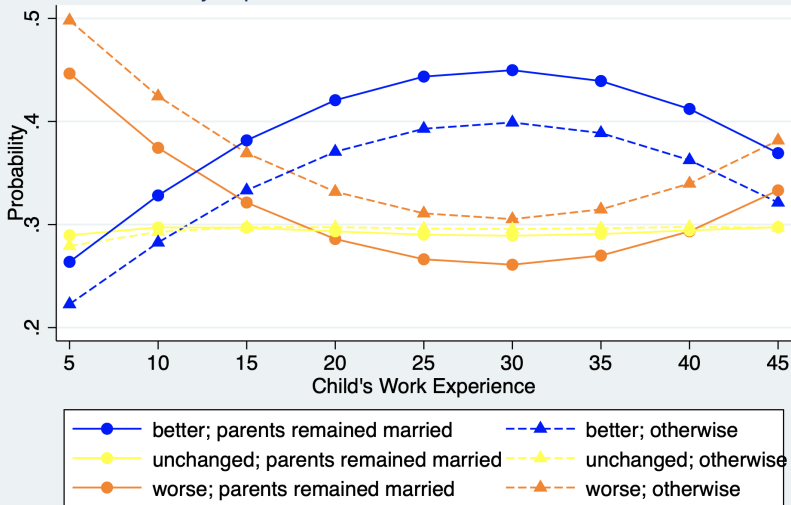
The Stata Commands Used in the Research

- ✠ Graphics: graph box; graph pie; histogram; marginsplot.
- ✠ Estimation: regress; sem; gsem; probit; eregress; heckman; xtreg; oprobit; predict; margins.
- ✠ Data management and description: recode; reshape; label; tabstat; tabulate.
- ✠ Programming: forvalues.

Thank You!
The complete presentation:
https://www.youtube.com/playlist?list=PLVnZIlyvIMyQxXGESeawy-ttg842VtR2s
or click here.