

# Rising Cohabitation and Child Development

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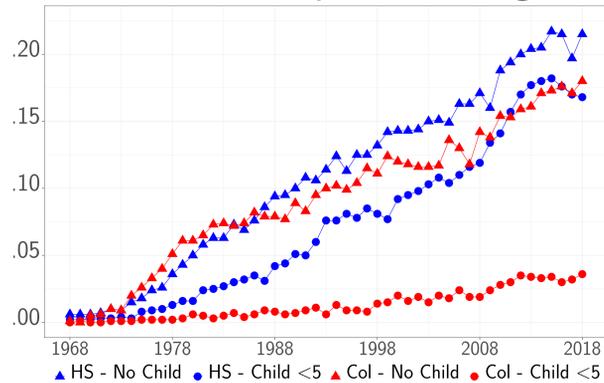
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\*The views expressed in this poster are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Atlanta.

## Motivation

- Cohabitation rates have steadily increased in the U.S. over the past 50 years.
- College-educated couples with small children are less likely to cohabit.

### Fraction of Couples Cohabiting

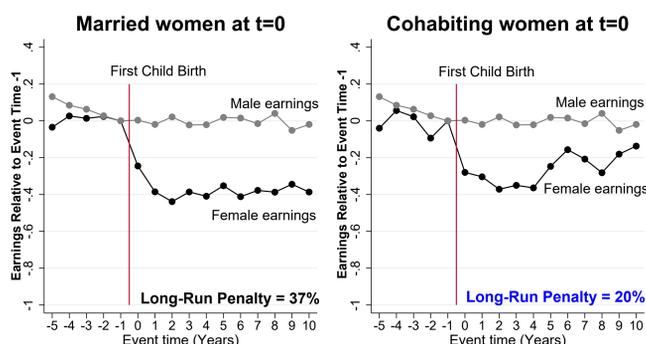


Note: CPS-ASEC data 1968-2018.

## Research Questions

- What explains the differential rise in cohabitation rates by education?
- What are the implications for child investment and child outcomes?

- Stylized Fact I:** Cohabiting women experience **smaller child penalties** than married women.



Note: PSID data 1976–2018. Percentage effects of parenthood on earnings across event time  $t$ . Long-run child penalties defined as the average penalty from event time five to ten. Earnings=0 if not working.

- Stylized Fact II:** Cohabiting women **work more** and spend **less time with children** than married women. Time spent with children  $\uparrow$  in maternal education.

	Edu	Hrs Wrk	Child	NM+L
Married	HS	16.41	18.15	64.82
	Col	22.45	21.95	57.90
	$\Delta$	6.04	3.80	-6.92
Cohabiting	HS	17.73	15.93	65.68
	Col	25.54	17.67	59.38
	$\Delta$	7.81	1.74	-6.30

Table 1: Time Allocations of Women 25-44 with Children < 5

Note: ATUS data 2003–2018. 'Hrs Wrk' is hours worked per week, 'Child' is total weekly hours spent on childcare, and 'NM+L' is the sum of hours spent on home production and leisure.

- Stylized Fact III:** Children of women that ever cohabited and of less educated women have **lower GPA** and are **less likely** to obtain a **college degree**.

	GPA	Prob (College Compl.)
Mother Ever Cohabited	-0.20*** (0.06)	-0.10*** (0.03)
Mother High School	-0.11*** (0.03)	-0.13*** (0.02)
N	5,374	5,374
adj. $R^2$	0.23	0.26

Table 2: Child Development

Note: Add Health Data, Waves I and IV. St.errors in parenthesis clustered at the school level, survey weights used. Additional controls: gender, age, ability (PPVT), father's education, parental income, race, and school FE.

## A 3-Period OLG model of Marriage/Cohabitation and Child Development

- Partners start life as a couple with education  $e \in \{hs, col\}$ , persistent love shock  $\gamma$ , and children whom they are altruistic towards. In period 3 they retire and consume all their savings.
- In periods 1 and 2, they choose to cohabit/marry or separate/divorce; savings ( $a'$ ); goods ( $d$ ) and time ( $n_m, n_f$ ) for home production/leisure; and child investments of woman's time ( $\tau_f$ ) in period 1 and goods ( $m$ ) in period 2.
- Increasing child investments ( $\tau_f, m$ ) increase the probability children complete college  $p^{col}(\tau_f, m|e)$ .
- But increasing  $\tau_f$  also lowers the woman's period 2 human capital  $h_f \equiv H(1 - n_{f,t-1} - \tau_f, e)$ .
- Marriage and cohabitation differ in two ways:
  - Asset Division:** If split, married women receive  $\alpha = 0.5$  of household assets, cohabiting receive  $\alpha < 0.5$ .
  - Separation Costs:** Married couples have (utility) cost  $\kappa > 0$  from divorce, cohabiting couples  $\kappa = 0$ .
- A cohabiting/married couple solves

$$\max_{g=f,m} \left\{ u(c_g, n) + \gamma + \beta EV_{t+1}^{g,C}(a'|\alpha, \kappa) + \beta^k \beta^{3-t} \mathbb{E}[p^{col}(\tau_f, m|e) V_0^{col} + (1 - p^{col}(\tau_f, m|e)) V_0^{hs}] \right\}$$

$$\text{s.t. } c_f + c_m + p_d d + a' = \begin{cases} w_m(1 - n_m) + w_f(1 - n_f - \tau_f) + (1 + r)a & \text{if } t = 1 \\ w_m(1 - n_m) + w_f h_f(1 - n_f) + (1 + r)a - m & \text{if } t = 2 \end{cases}$$

where home goods  $n \equiv F(n_m, n_f, d)$  and future expected utility depends on marital/cohabiting status

$$EV_{t+1}^{g,C}(a'|\alpha, \kappa) \equiv \mathbb{E} \left[ (1 - \mathbb{1}_{sep}) EV_{t+1}^{g,C}(a') + \mathbb{1}_{sep} [EV_{t+1}^{g,S}(a'|\alpha) - \kappa] \right]$$

## A. How does Cohabitation affect Child Development?

### Less Intra-Household Specialization

Unequal **asset division** and no **separation costs**  $\Rightarrow$  cohabiting women are less willing to forego labor market experience (their own human capital) to spend time investing in their children's human capital.

### Higher Separation Risk

No **separation costs** means cohabiting relationships are less stable  $\Rightarrow$  children of cohabiting relationships are more likely to grow up with a single mother, who has less time and money to invest in her kids.

## Calibration to 2015 US

- Model matches educational differences by marital status in

- Hours worked  $l_f$
- Time spent with children  $\tau_f$
- Home production hours  $n_f$
- Money investment in children  $m$

- And generates higher marriage rates for college ( $\sigma^{col}$ ) versus high school ( $\sigma^{hs}$ ).
- The model predicts that cohabitation increases  $l_f$  and reduces  $\tau_f$  (Stylized Fact II).

$\Rightarrow$  The probability children complete college,  $p^{col}(\cdot)$ , declines by **13%** if a mother has ever cohabited (conditional on her education) and by **11%** if a mother has no college degree (Stylized Fact III).

	Married Couples		Cohabiting Couples	
	Model	Data	Model	Data
1. $l_f^{col} - l_f^{hs}$	5.06	6.04	3.14	7.81
2. $\tau_f^{col} - \tau_f^{hs}$	2.75	3.80	6.16	1.74
3. $n_f^{col} - n_f^{hs}$	-7.81	-6.30	-8.56	-6.92
4. $m^{col} - m^{hs}$	1.04	1.50	0.97	1.10
5. $\sigma^{col} - \sigma^{hs}$	0.21	0.15	-	-

	College Couples		High School Couples	
	Model	Data	Model	Data
1. $l_f^{col} - l_f^{mar}$	5.72	3.09	8.22	1.32
2. $\tau_f^{col} - \tau_f^{mar}$	-4.45	-4.28	-8.22	-2.22

Table 3: Allocation Differences by Education

## B. Why are Marriage Rates Higher for College-Educated Couples with Kids?

### College couples have lower costs of specialization

**Larger gender wage gap** makes specialization less costly for college women  $\Rightarrow$  higher returns from marriage for college couples.

### College couples have higher benefits of specialization

College couples have higher returns from investing in kids due to dynamic complementarity in child investment and higher income  $\Rightarrow$  higher returns from marriage for college couples.

## Steady State Comparison: 2015 versus 1975

- To calibrate the 1975 steady state, we adjust

	2015	1975	
Gender Wage Gap	High School	0.75	0.55
	College	0.70	0.70
	College Premium		
Women		0.40	0.33
	Men	0.43	0.20
Price of Home Goods	1	3	

Table 4: Steady State Calibration

- Cohabitation Rates by Education (relative to 2015)

Steady States	Col		HS	
	2015	1975	2015	1975
	0.74	0.70	<	>
			1.00	0.63

Table 5: Experiments

$\Rightarrow$  Qualitatively consistent with facts in Motivation.

- The primary effect is the large decline in the high school gender wage gap between 1975 and 2015 which reduces their returns from marriage.