An Investment-and-Marriage Model with Differential Fecundity

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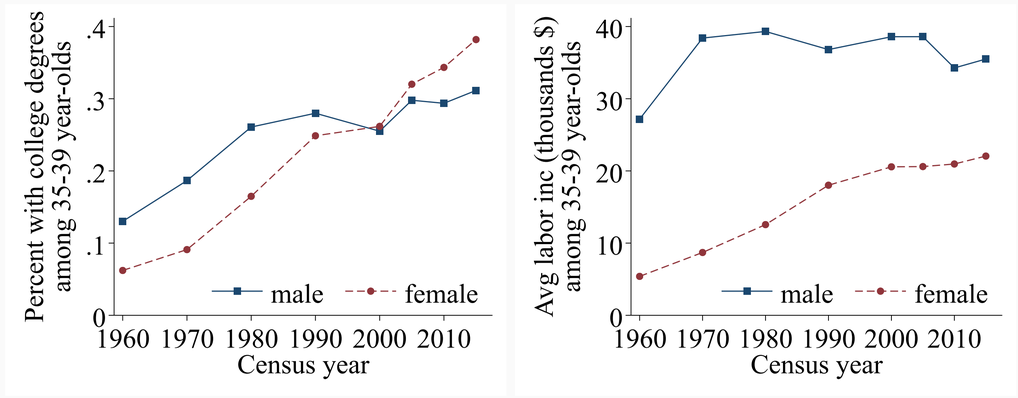
revise & resubmit, ***Journal of Political Economy***

Introduction

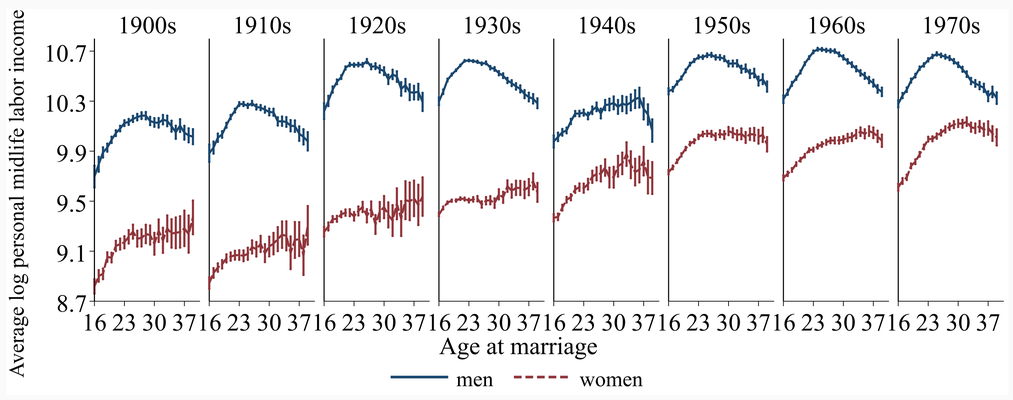
This paper uses an investment-and-marriage model with differential fecundity to provide a unified explanation for three sets of stylized facts for Americans born in the twentieth century.

Three Sets of Stylized Facts

1. **Reversed college gender gap and persistent income gender gap**



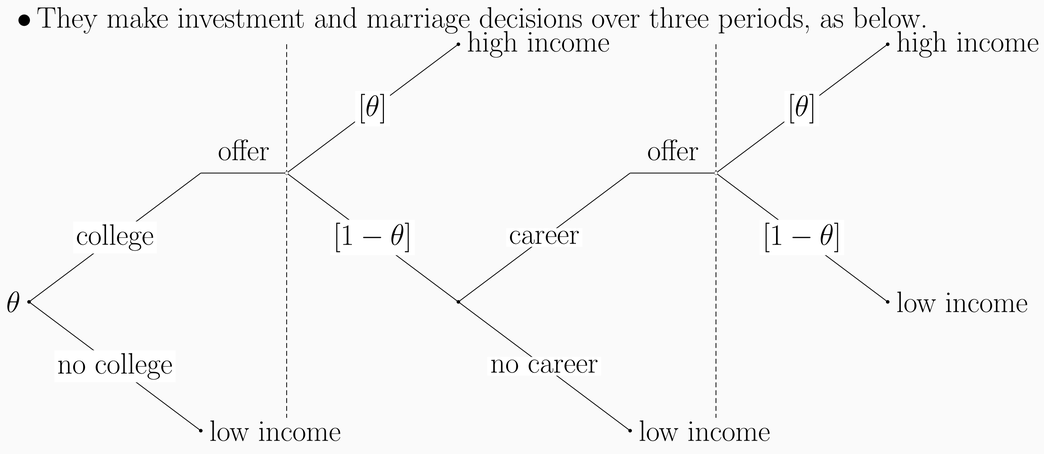
2. **Relationship between age at marriage and income is hump-shaped for men and positive for women**



3. **A hump-shaped relationship between age at marriage and spousal income for women**

Theory

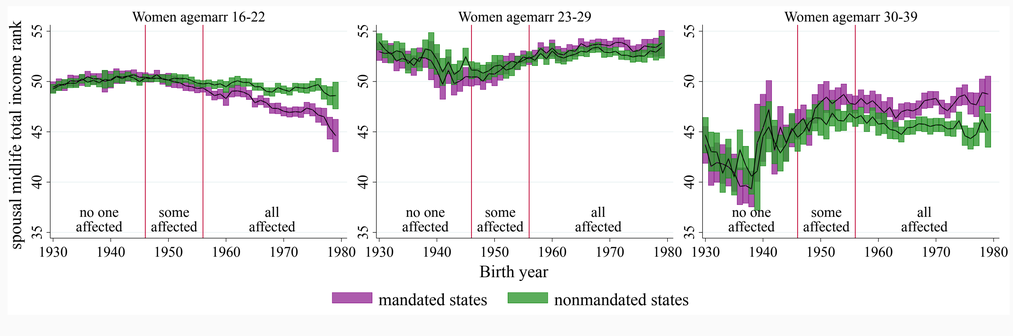
- Unit masses of men and women born with heterogeneous ability θ enter the economy every period.
- They make investment and marriage decisions over three periods, as below.



- Men are fertile for all three periods, but women become less fertile in the third period.
  - **Key consequence**: fewer women than men make career investments because of differential fecundity.
- Their payoffs are income + marriage payoff - investment cost(s), where marriage payoffs are determined by income and fertility characteristics.
- Marriage market is transferable-utilities
  1. $v_m(\tau_m) + v_w(\tau_w) \geq s(\tau_m, \tau_w)$ for any matched pair of τ_m and τ_w, and
  2. $v_m(\tau_m) + v_w(\tau_w) \geq s(\tau_m, \tau_w)$ for any pair of τ_m and τ_w

Explanations for Stylized Facts 2 and 3

- Hump-shaped relationship between age at marriage and income for men
  1. Low-ability men do not go to college and marry in the first period. (L)
  2. High-ability men go to college and the ones who succeed after college marry in the second period. (H)
  3. High-ability men who fail in the second period make a career investment and marry in the third period. (L & H)
- Positive relationship between age at marriage and income for women
  1. Low-ability women do not go to college and marry in the first period. (L)
  2. High-ability women go to college and the ones who succeed after college *and the intermediate-ability women who fail after college* marry in the third period. (L & H)
  3. Extremely high ability women go to college and make career investments if necessary, and marry in the third period with a high average income. (ℓ & mostly h)
- Hump-shaped relationship between age at marriage and spousal income for women
  1. Low-income fertile women marry low-income men. (L)
  2. High-income fertile women marry high-income men. (H)
  3. High-income less fertile women marry lower-income men than high-income fertile women for sure, but might marry higher- or lower-income men than low-income fertile women, depending on the importance of fertility in the marriage market.
     - Evidence: 1985-1995, thirteen states mandated coverage for infertility treatment in insurances. In those states, the marital outcome, measured by spousal income, decreased less for women who married between 16 and 22, and increased more for women who married after 30.



Main Result: Reversed College Gender Gap

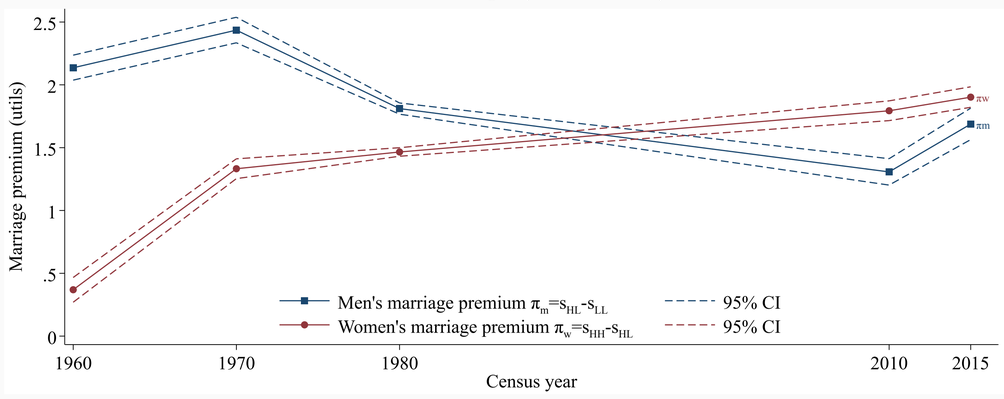
Result. In the model, when everything is gender-symmetric except differential fecundity, *more* women than men go to college, and generically, *fewer* women than men continue to earn a high income.

The opposite college gender gap and income gender gap are reconciled!

Explanations.

- All college-educated men make career investments.
- Only some college-educated women make career investments.
- Fewer women than men earn a high income.
- High-income women are more scarce than high-income men in the marriage market.
- High-income women are more *valuable* than high-income men in the marriage market.
- College generates higher marriage-market returns for women than for men.

Evidence. Choo-Siow estimates of marriage payoffs show that the marriage market returns were higher for men when more men went to college (before 1990s) and were higher for women when more women went to college (after 1990s).



Key Assumptions.

1. differential fecundity, and
2. a competitive marriage market where supply and demand determine payoffs

Calibration

I calibrated the basic model and an extended model adding marriage search frictions to examine counterfactual impacts of the mandates and hypothetical gender equality policies on marriage and labor outcomes.