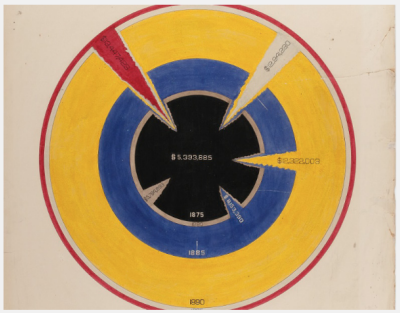
# Announcements

- Research projects!!!
- Officially due during our final exam period (April 29, 5pm)
- Unofficially due with enough time left for me to get grading done (May 7)
- For next week and after classes end, I'm happy to schedule individual times to meet
- On Friday, we'll use the class period as a work session for your projects, I can show you things on Stata, help with data, etc.
- Today and Wednesday we'll use a discussion of gender inequality as a way to review the course
- But first, the official launch of our class website

# Launched

**Economics 449: American Economic Mobility Over Two Centuries**

This site displays the original work of Econ 449 students exploring the history of mobility and inequality in the Williamsburg area through a variety of sources and techniques. Each semester, students build of the work of previous cohorts, expanding the datasets and building a fuller picture of Williamsburg's economic history. Click on the images below to explore the datasets generated by the class.

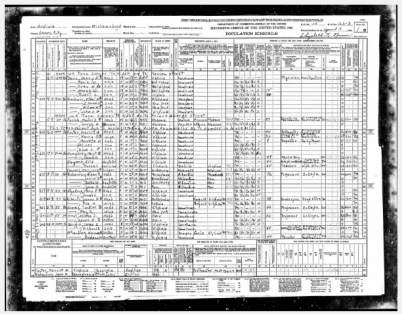


**The Du Bois Project**

Students recreated figures from the 1900 Paris Exhibition works of W.E.B. Du Bois using historical data from Virginia and modern data from the United States. The resulting figures provide insights into the ways racial inequalities varied across the South and evolved over the twentieth century.

**Neighborhood Histories**

Students traced the histories of Williamsburg houses. Manuscript pages from the 1940 Federal Census reveal the neighborhood demographics from over half a century ago. Deed histories uncover the restrictive covenants that shaped the evolution of those neighborhoods.

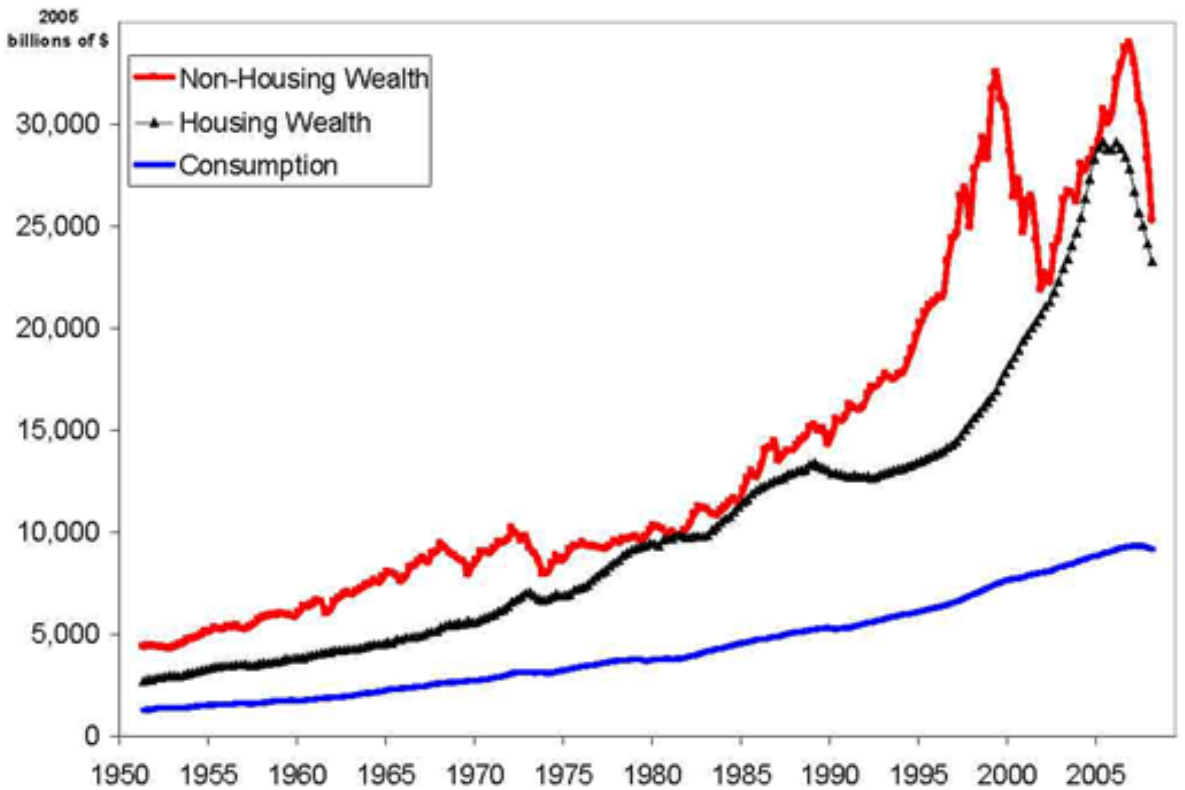


**Family Histories**

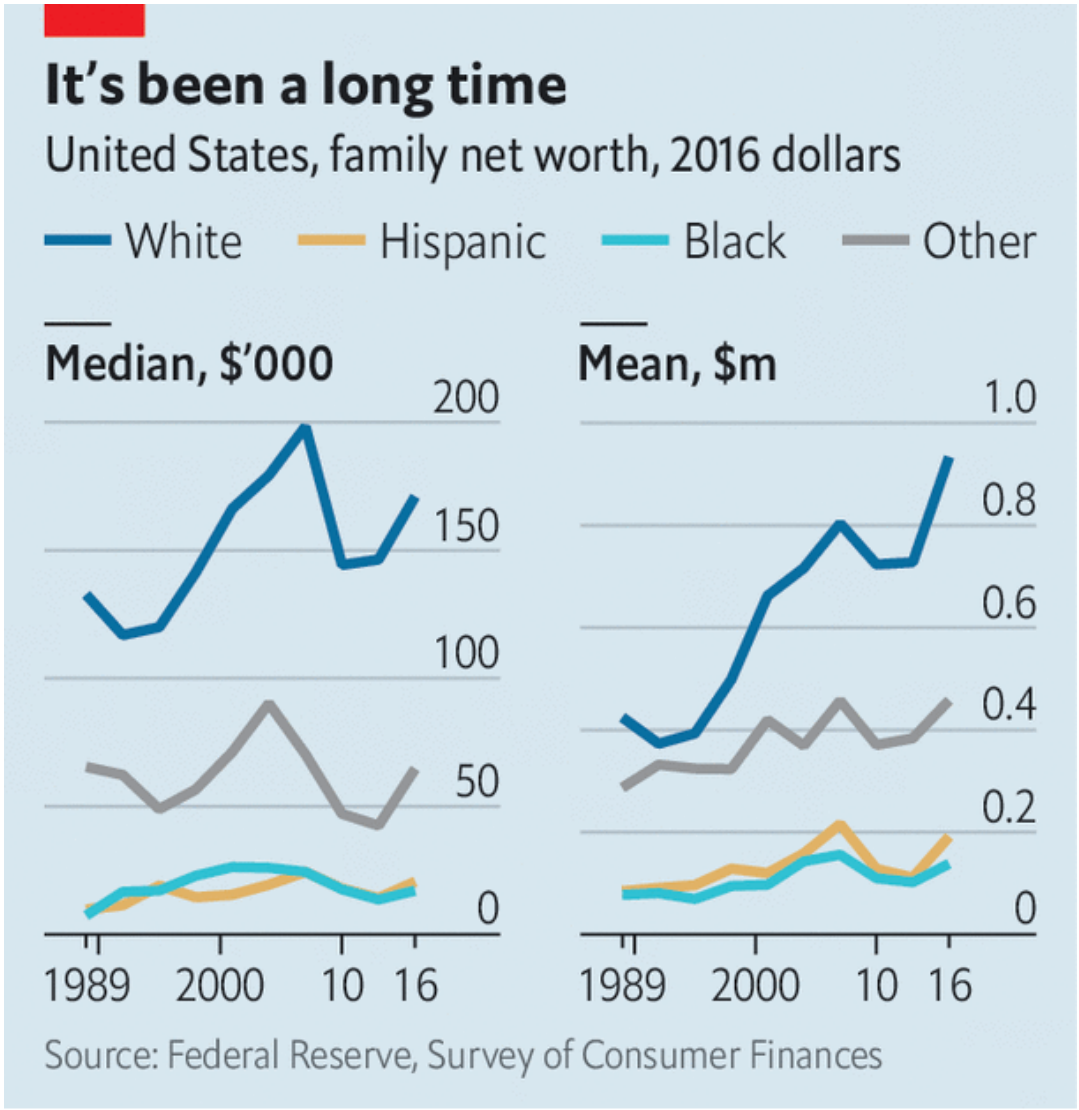
By linking Williamsburg residents from the 1920 Federal Census to the 1940 Federal census, students created an intergenerational dataset capturing occupational and geographical mobility over a time period that witnessed tremendous shocks to the national economy as well as major changes specific to the Williamsburg community.

https://jmparman.people.wm.edu/econ-449-class-website/econ-449-main.html

# Race, Housing and Wealth



# Race, Housing and Wealth




The Economist

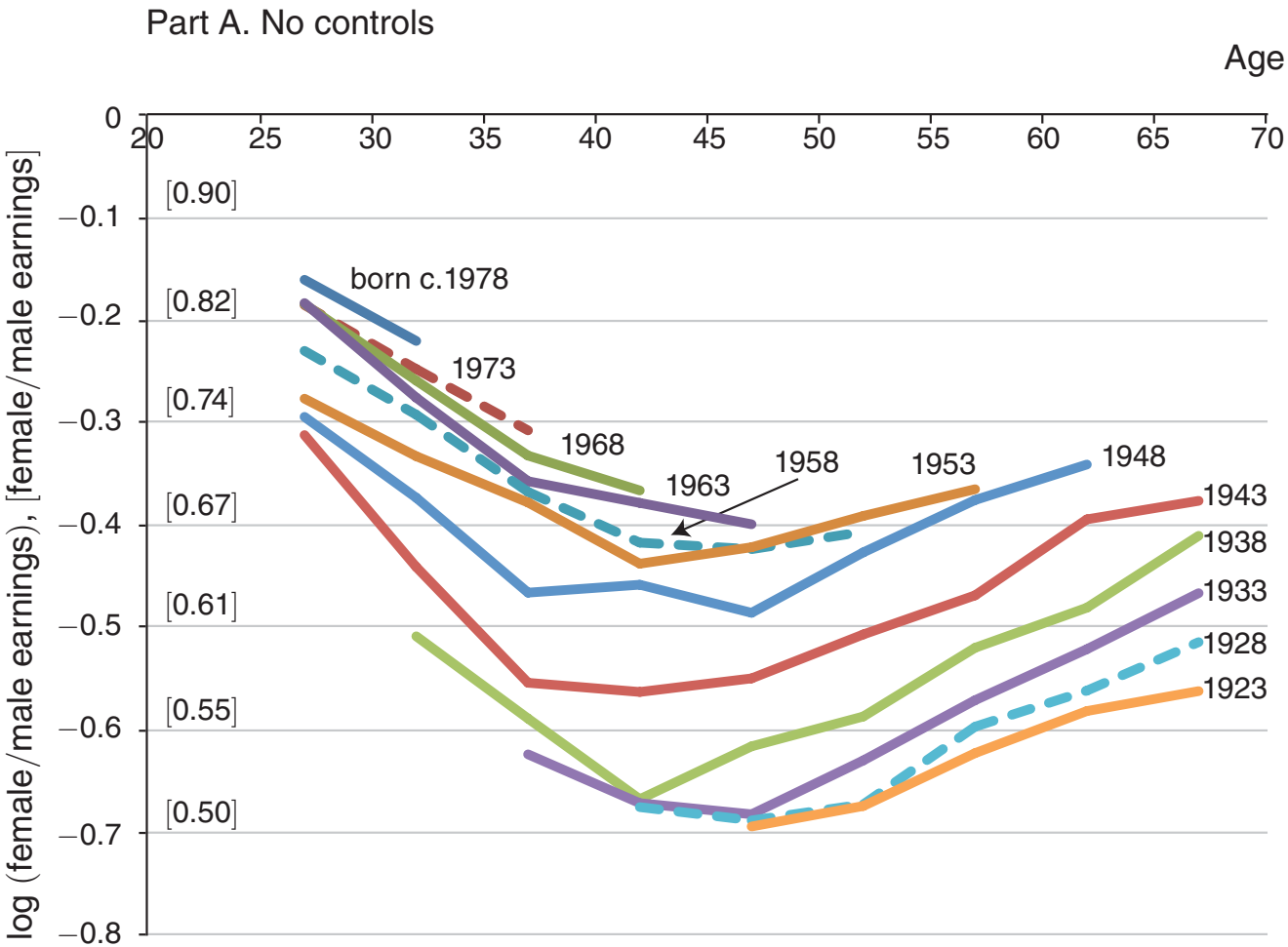
# Gender, Inequality and Mobility

**Fortune 500 chief executives who are women**

# Gender, Inequality and Mobility

**Fortune 500 chief executives named John**

# Female-Male Wage Gaps



# Female-Male Wage Gaps

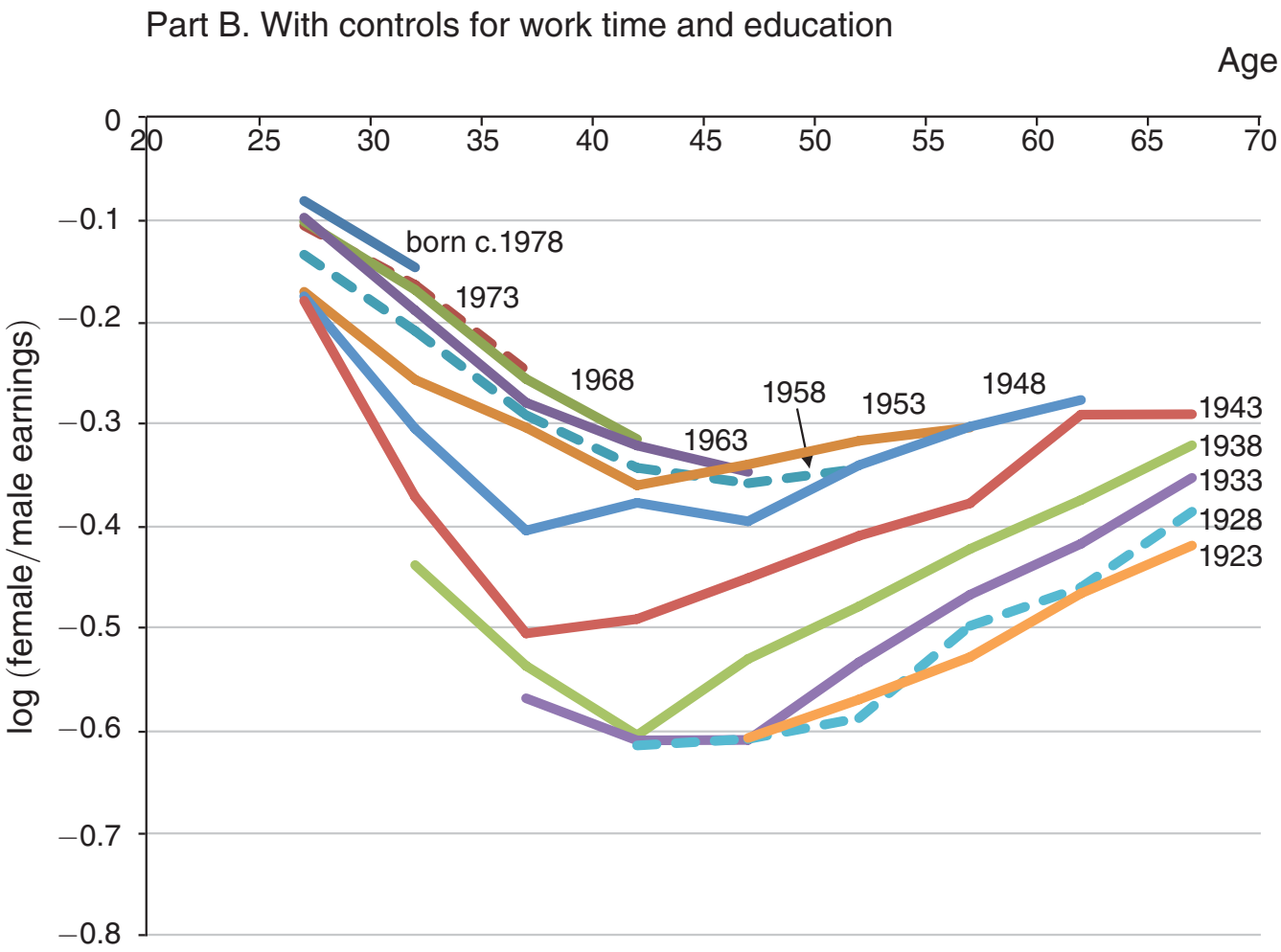



FIGURE 1. RELATIVE EARNINGS OF (FULL-TIME, FULL-YEAR) COLLEGE GRADUATE MEN AND WOMEN FOR SYNTHETIC COHORTS: BORN 1923 TO 1978

# Gender, Inequality and Mobility

- For this week, we'll be thinking about gender, mobility and inequality
- Equality of opportunity and equality of outcomes varies significantly by gender
- There are a range of issues common to things we have already discussed as well as issues unique to gender
- To think about these, we'll review all of the topics we've covered in class and think about the ways in which gender enters in

# What We Have Covered

- Defining and measuring inequality and mobility
- Modern versus historical estimates
- Changes in mobility and inequality over time
- Internal and international migration
- Educational and Technological Change
- Organized Labor
- Formal and informal discrimination

# The Measurement of Mobility

- Let's review the measurement of mobility and rethink it in the context of female mobility
- First, our basic measures:
  - Intergenerational earnings elasticities
  - Income rank-rank correlations
  - Occupational transitions
- Do these adequately capture female mobility?
- Do they lend themselves to thinking about changes over time?

# The Measurement of Mobility and Inequality

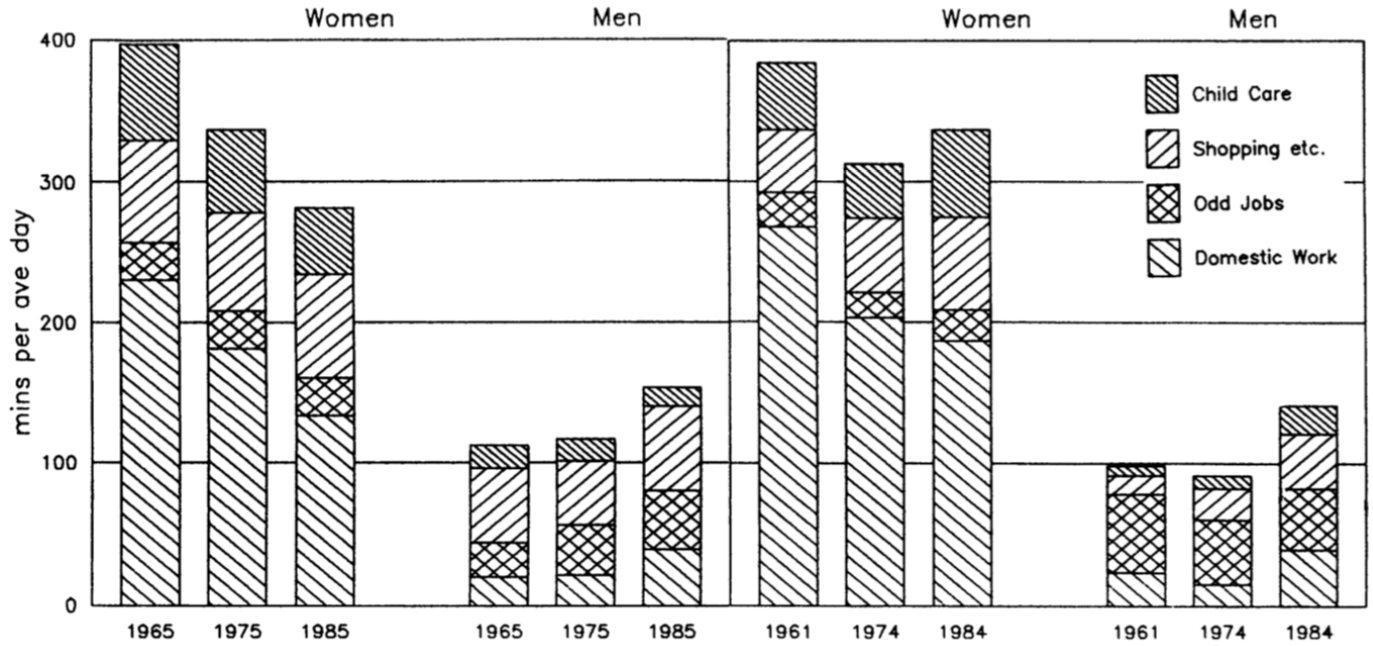



Figure 1. Estimates of the Overall Pattern of Change in Unpaid Work Time for Population Groups Aged 25–45 in the United States (left) and the United Kingdom (right)

# The Measurement of Mobility and Inequality

TABLE 2—DIVORCE LAWS' IMPACT ON DIVORCE PROBABILITIES

| | (1) Differences-in-differences | (2) Probit | (3) Bivariate probit |
|---|---|---|---|
| Effect of change to unilateral divorce/equitable distribution | −0.002<br>(−0.27) | 0.004<br>(0.55) | 0.005<br>(0.43) |
| Effect of change to unilateral divorce/common law | −0.0003<br>(−0.03) | −0.006<br>(−0.64) | 0.020<br>(1.21) |
| Effect of change to unilateral divorce/community property | 0.006<br>(0.79) | −0.004<br>(−0.63) | 0.001<br>(0.04) |

*Notes:* Asymptotic *t*-statistics in parentheses. The dependent variable is equal to one if the woman reports herself as divorced or separated from her husband at the time of the survey. Probit estimates reported in columns (2) and (3) are $\partial P_i/\partial x_{ij} = \cdot\beta_j \cdot \phi(x_i'\beta)$, evaluated at the mean of $x_i$. In addition to divorce-law variables, each regression includes an intercept, age, years of schooling, children ever born and its square, child in household under the age of six, white, year, urban residence, and state dummy variables. The sample in columns (1) and (2) consists of 73,875 married and divorced or separated women ages 18 to 55 from the 1970 and 1980 data sets. The sample in column (3) includes an additional 18,071 never-married women ages 18 to 55 used to estimate the first-stage (selection) equation of the probability of ever-been married.

# The Measurement of Mobility and Inequality

TABLE 4—DIVORCE LAWS' IMPACT ON MARRIED WOMEN'S TIME ALLOCATIONS

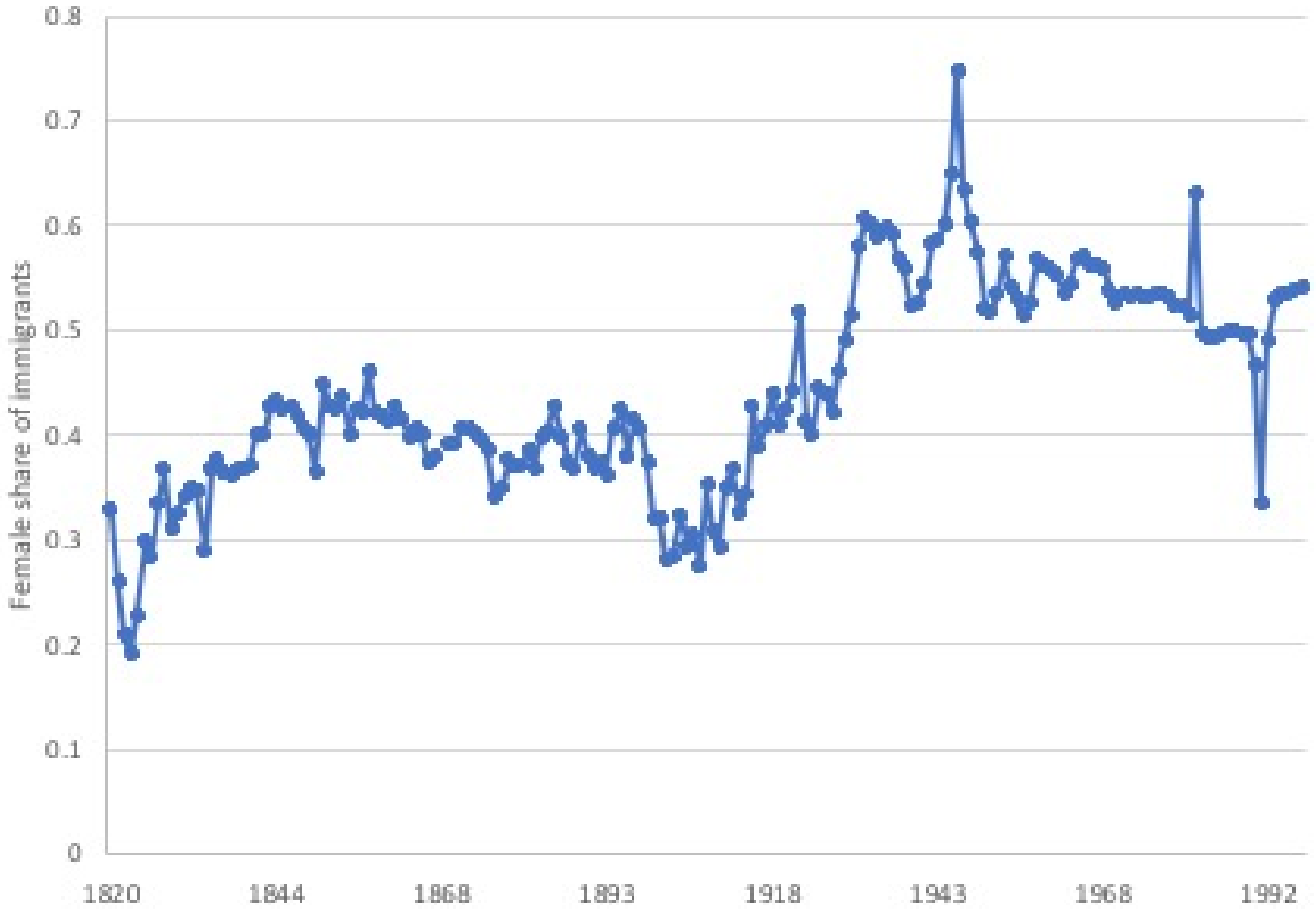
| | Women married in either 1970 or 1980 | | | Women married throughout sample period | | |
|---|---|---|---|---|---|---|
| | Labor market | Home hours | Pure leisure | Labor market | Home hours | Pure leisure |
| Effect of change to unilateral divorce/equitable distribution | −1.40<br>(−1.14) | 1.12<br>(0.91) | 0.28<br>(0.64) | −2.44<br>(−1.55) | 1.64<br>(1.00) | 0.80<br>(0.89) |
| Effect of change to unilateral divorce/common law | −1.91<br>(−0.88) | 2.94<br>(1.36) | −1.03<br>(−0.15) | −7.19<br>(−2.31) | 5.16<br>(1.61) | 2.03<br>(0.74) |
| Effect of change to unilateral divorce/community property | 1.34<br>(0.74) | −4.28<br>(−2.32) | 2.94<br>(1.70) | 0.62<br>(0.25) | −6.85<br>(−2.61) | 6.23<br>(2.33) |
| Sample size | 2,581 | — | — | 1,336 | — | — |

*Notes:* Asymptotic *t*-statistics in parentheses. See footnote to Table 3 for other independent variables included; Census division dummy variables are included rather than state dummy variables. Tobit estimates reported as $\beta_j \cdot \Phi[(x_i'\beta)/\sigma]$, evaluated at the mean of $x_i$. Sample used in first three columns consists of a pooled cross section of married women in 1970 and 1980; the sample used in last three columns is restricted to women who remained married between 1970 and 1980.

# The Measurement of Mobility

- Let's review the measurement of mobility and rethink it in the context of female mobility
- Now consider our data collection techniques:
  - Modern longitudinal datasets
  - Chetty-style modern data
  - Linked datasets
  - Cross-sections based on the socioeconomic content of names
- Can these techniques be applied to females?
- Are there different concerns when it comes to bias?

# Immigration, Inequality and Mobility



# Immigration, Inequality and Mobility

# Immigration, Inequality and Mobility

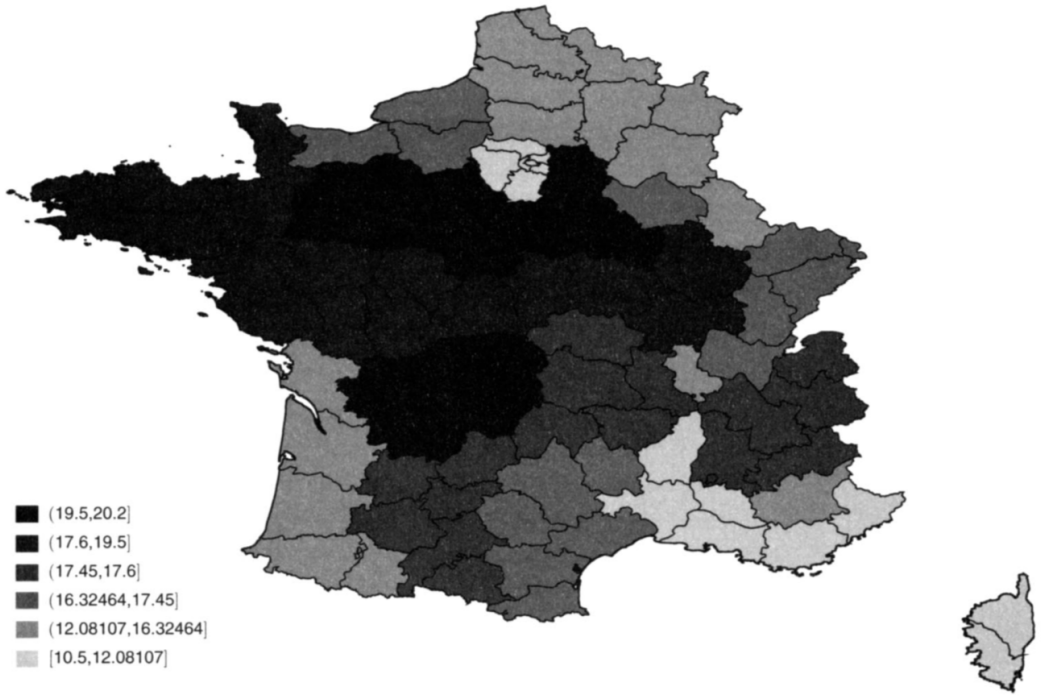



FIGURE 1. THE GEOGRAPHIC VARIATION IN MILITARY MORTALITY RATES

*Notes:* This map shows the geographic variation in the percentage of soldiers killed. A darker color represents a higher mortality rate (see labels for corresponding mortality rate).

# Immigration, Inequality and Mobility

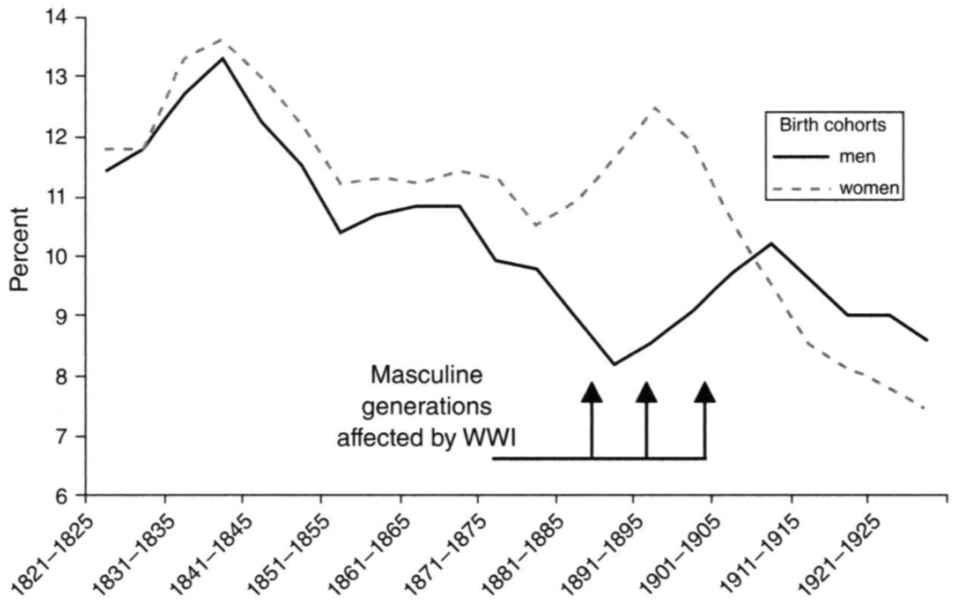



FIGURE 3. PERCENTAGE OF SINGLES AT AGE 50 BY BIRTH COHORT

*Source:* Roussel (1975).

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- We'll leave some time at the end of class today for course evaluations

# What We Have Covered in Class

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- Modern versus historical estimates
- Changes in mobility and inequality over time
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- Organized Labor
- Formal and informal discrimination

# The Measurement of Mobility and Inequality

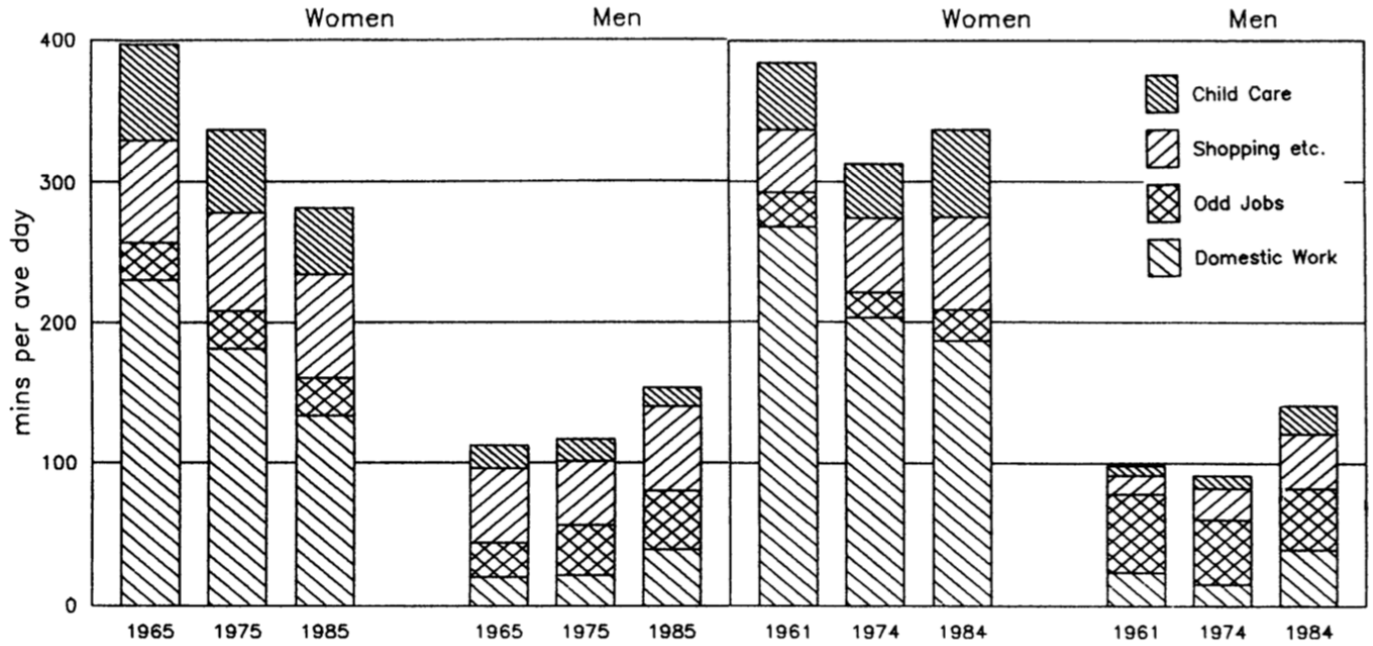



Figure 1. Estimates of the Overall Pattern of Change in Unpaid Work Time for Population Groups Aged 25–45 in the United States (left) and the United Kingdom (right)

# Immigration, Inequality and Mobility

TABLE 3—IMPACT OF MALE SCARCITY ON ASSORTATIVE MATCHING BY CLASS (OLS)
(*Classes defined by own occupation*)

| | All classes of groom | | | Excluding grooms of class 1 and 2 | | |
|---|---|---|---|---|---|---|
| Dependent variable | Class difference | Married down | Low-class bride | Class difference | Married down | Low-class bride |
| Percent of soldiers killed | −0.020* | −0.010** | −0.017*** | −0.035*** | −0.017*** | −0.023*** |
| × postwar | (0.010) | (0.004) | (0.005) | (0.013) | (0.004) | (0.006) |
| Postwar | 0.196 | 0.092 | 0.223*** | 0.491** | 0.240*** | 0.338*** |
| | (0.146) | (0.065) | (0.066) | (0.187) | (0.060) | (0.082) |
| Rural | 0.190** | 0.032 | −0.034 | 0.191** | 0.032 | −0.036 |
| | (0.085) | (0.029) | (0.030) | (0.091) | (0.029) | (0.033) |
| Bride's age (/100) | −0.582 | 0.087 | −0.095 | −0.923* | −0.164 | −0.084 |
| | (0.473) | (0.160) | (0.142) | (0.488) | (0.185) | (0.188) |
| Groom's Age (/100) | 0.355 | −0.166 | 0.134 | 0.430 | 0.033 | 0.048 |
| | (0.377) | (0.138) | (0.127) | (0.364) | (0.130) | (0.151) |
| Groom class dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Département dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| $R^2$ | 0.387 | 0.271 | 0.232 | 0.357 | 0.240 | 0.261 |
| Observations | 3,117 | 2,994 | 3,117 | 2,432 | 2,309 | 2,432 |

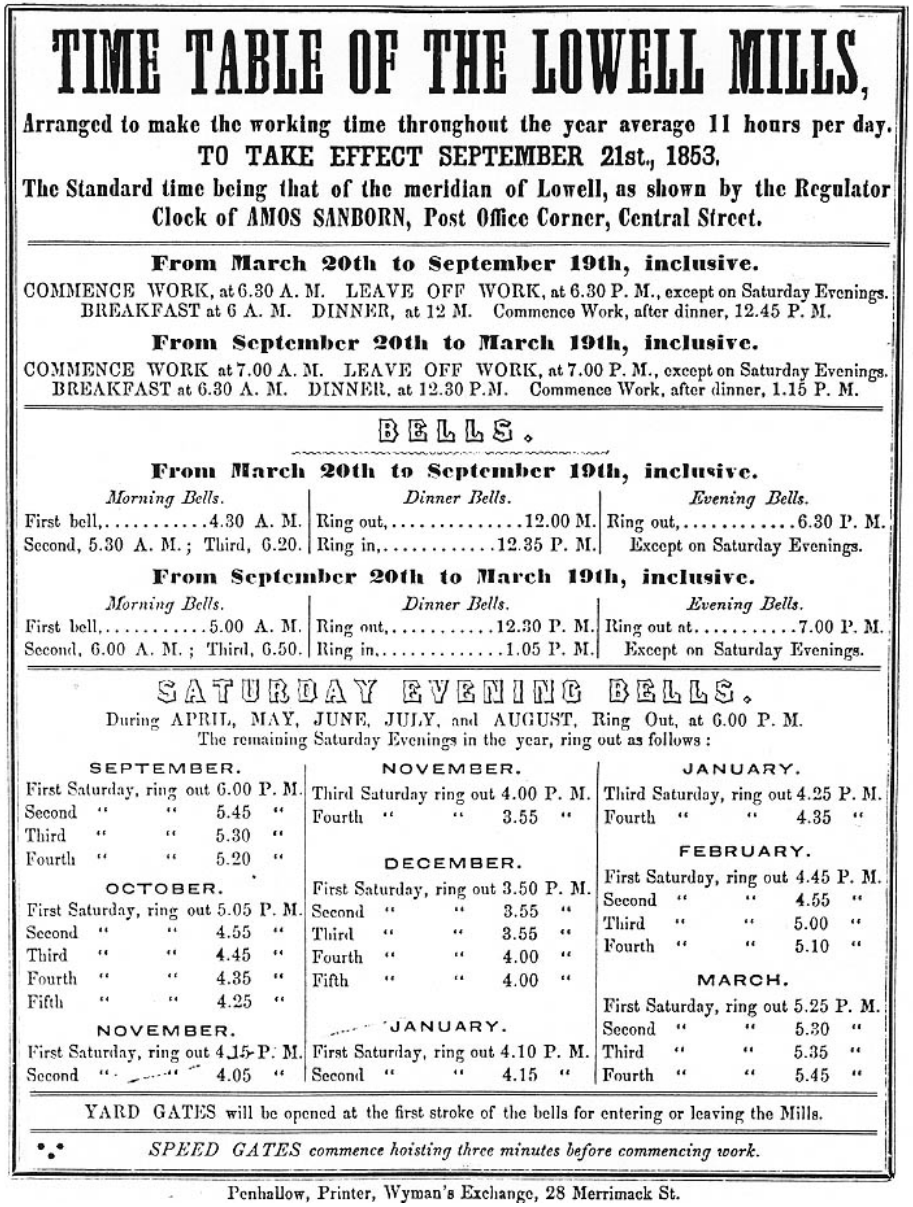
*Notes:* The first three columns are for the full sample of grooms. The second three columns exclude grooms of classes 1 and 2. The dependent variable in the first and fourth columns is the class of the bride minus the class of the groom (thus a greater class difference indicates the groom married a lower class of bride). The dependent variable in the second and fifth columns is a dummy variable for whether the groom married a bride of lower class than himself. The dependent variable in the third and sixth columns is a dummy for the bride being of low class (5, 6, or 7). Classes are defined using own occupation. Standard errors, clustered at the département level, are presented in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

# Organized Labor Well Before the Great Compression



# TIME TABLE OF THE LOWELL MILLS,

**Arranged to make the working time throughout the year average 11 hours per day.**

**TO TAKE EFFECT SEPTEMBER 21st., 1853.**

**The Standard time being that of the meridian of Lowell, as shown by the Regulator Clock of AMOS SANBORN, Post Office Corner, Central Street.**

**From March 20th to September 19th, inclusive.**

COMMENCE WORK, at 6.30 A. M. LEAVE OFF WORK, at 6.30 P. M., except on Saturday Evenings.
BREAKFAST at 6 A. M. DINNER, at 12 M. Commence Work, after dinner, 12.45 P. M.

**From September 20th to March 19th, inclusive.**

COMMENCE WORK at 7.00 A. M. LEAVE OFF WORK, at 7.00 P. M., except on Saturday Evenings.
BREAKFAST at 6.30 A. M. DINNER, at 12.30 P.M. Commence Work, after dinner, 1.15 P. M.

## BELLS.

**From March 20th to September 19th, inclusive.**

| *Morning Bells.* | *Dinner Bells.* | *Evening Bells.* |
|---|---|---|
| First bell,.....4.30 A. M. | Ring out,.....12.00 M. | Ring out,.....6.30 P. M. |
| Second, 5.30 A. M.; Third, 6.20. | Ring in,.....12.35 P. M. | Except on Saturday Evenings. |

**From September 20th to March 19th, inclusive.**

| *Morning Bells.* | *Dinner Bells.* | *Evening Bells.* |
|---|---|---|
| First bell,.....5.00 A. M. | Ring out,.....12.30 P. M. | Ring out at.....7.00 P. M. |
| Second, 6.00 A. M.; Third, 6.50. | Ring in,.....1.05 P. M. | Except on Saturday Evenings. |

## SATURDAY EVENING BELLS.

During APRIL, MAY, JUNE, JULY, and AUGUST, Ring Out, at 6.00 P. M.
The remaining Saturday Evenings in the year, ring out as follows:

| SEPTEMBER. | | NOVEMBER. | | JANUARY. | |
|---|---|---|---|---|---|
| First Saturday, ring out | 6.00 P. M. | Third Saturday ring out | 4.00 P. M. | Third Saturday, ring out | 4.25 P. M. |
| Second " " | 5.45 " | Fourth " " | 3.55 " | Fourth " " | 4.35 " |
| Third " " | 5.30 " | | | | |
| Fourth " " | 5.20 " | DECEMBER. | | FEBRUARY. | |
| OCTOBER. | | First Saturday, ring out | 3.50 P. M. | First Saturday, ring out | 4.45 P. M. |
| First Saturday, ring out | 5.05 P. M. | Second " " | 3.55 " | Second " " | 4.55 " |
| Second " " | 4.55 " | Third " " | 3.55 " | Third " " | 5.00 " |
| Third " " | 4.45 " | Fourth " " | 4.00 " | Fourth " " | 5.10 " |
| Fourth " " | 4.35 " | Fifth " " | 4.00 " | MARCH. | |
| Fifth " " | 4.25 " | | | First Saturday, ring out | 5.25 P. M. |
| NOVEMBER. | | JANUARY. | | Second " " | 5.30 " |
| First Saturday, ring out | 4.15 P. M. | First Saturday, ring out | 4.10 P. M. | Third " " | 5.35 " |
| Second " " | 4.05 " | Second " " | 4.15 " | Fourth " " | 5.45 " |

YARD GATES will be opened at the first stroke of the bells for entering or leaving the Mills.

*** *SPEED GATES commence hoisting three minutes before commencing work.*

Penhallow, Printer, Wyman's Exchange, 28 Merrimack St.

# Schooling, Technology and Mobility

*Figure 1*

**College Graduation Rates (by 35 years) for Men and Women: Cohorts Born from 1876 to 1975**

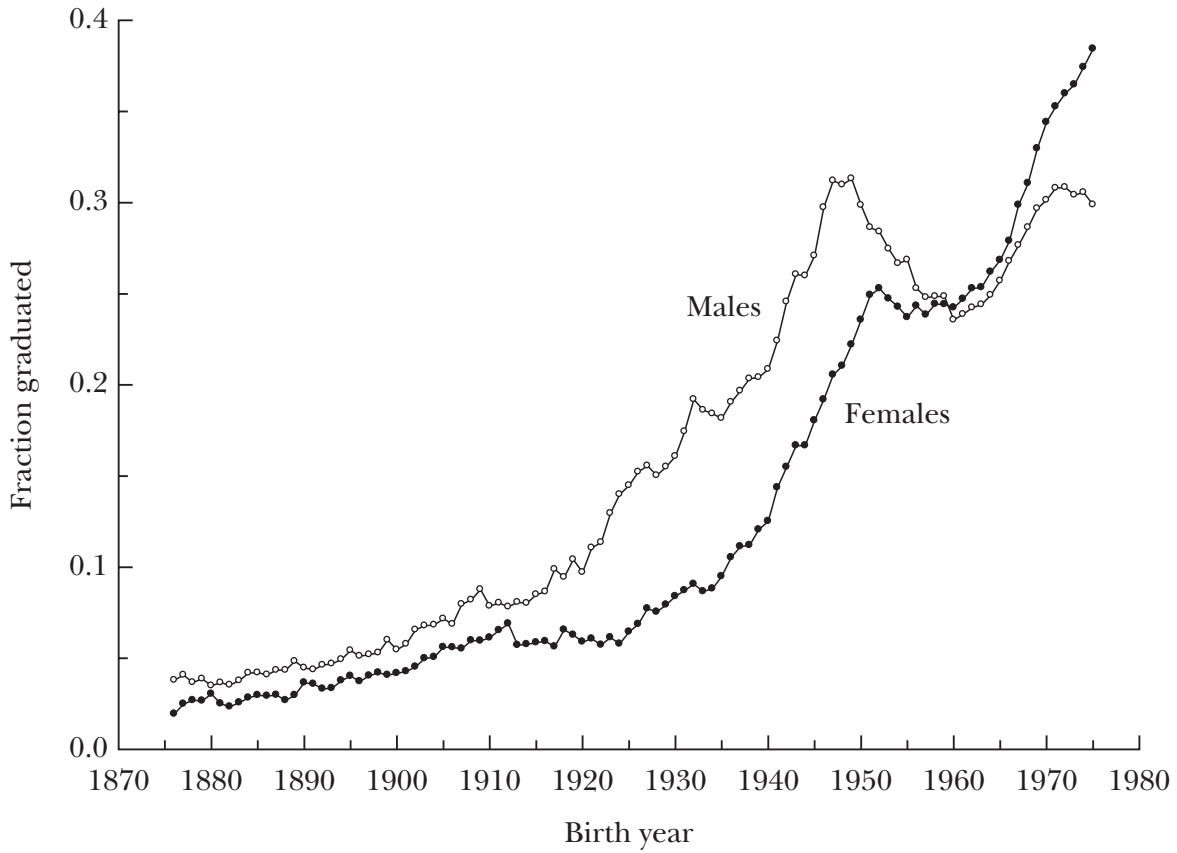
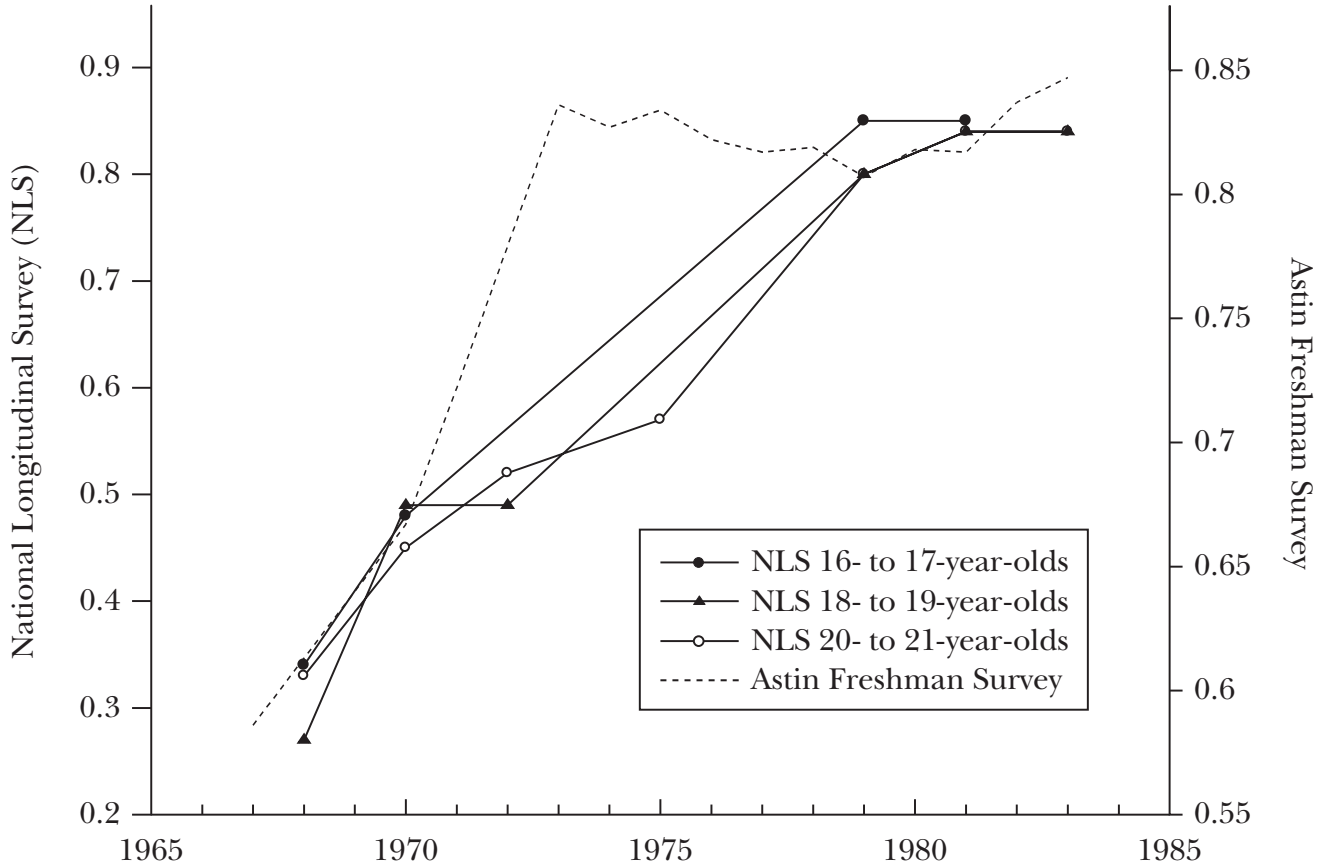


*Figure 6*

**Expectations and Opinions of Female Teenagers and College Freshmen: 1967 to 1984**



# Schooling, Technology and Mobility

*Sources:* Goldin (2005), which uses the 1968 National Longitudinal Survey of Young Women (NLS68) and 1979 National Longitudinal Survey of Youth (NLSY79); Astin Oseguera, Sax, and Korn (2002).
*Notes:* The National Longitudinal Survey (NLS) data are the response to whether an individual stated she expected to be in the paid labor force at age 35 and are given here for white women. The Astin Freshman Survey data are the response to whether the individual disagreed with the statement "the activities of married women are best confined to the home and family." The NLS data link the averages for each age group over time. Thus, the fourteen- to fifteen-year-olds in the NLS68 in 1968 became sixteen- to seventeen-years-olds in 1970 and are linked to the sixteen- to seventeen-year-olds in 1979 in the NLSY79. Also, the question asked in 1968 differs somewhat from that asked in subsequent years. The Astin et al. data are for female college freshman; about 84 percent of these freshmen were 18 years old in 1967 (on December 31) and 80 percent were in 1984 (on December 31).

# Schooling, Technology and Mobility

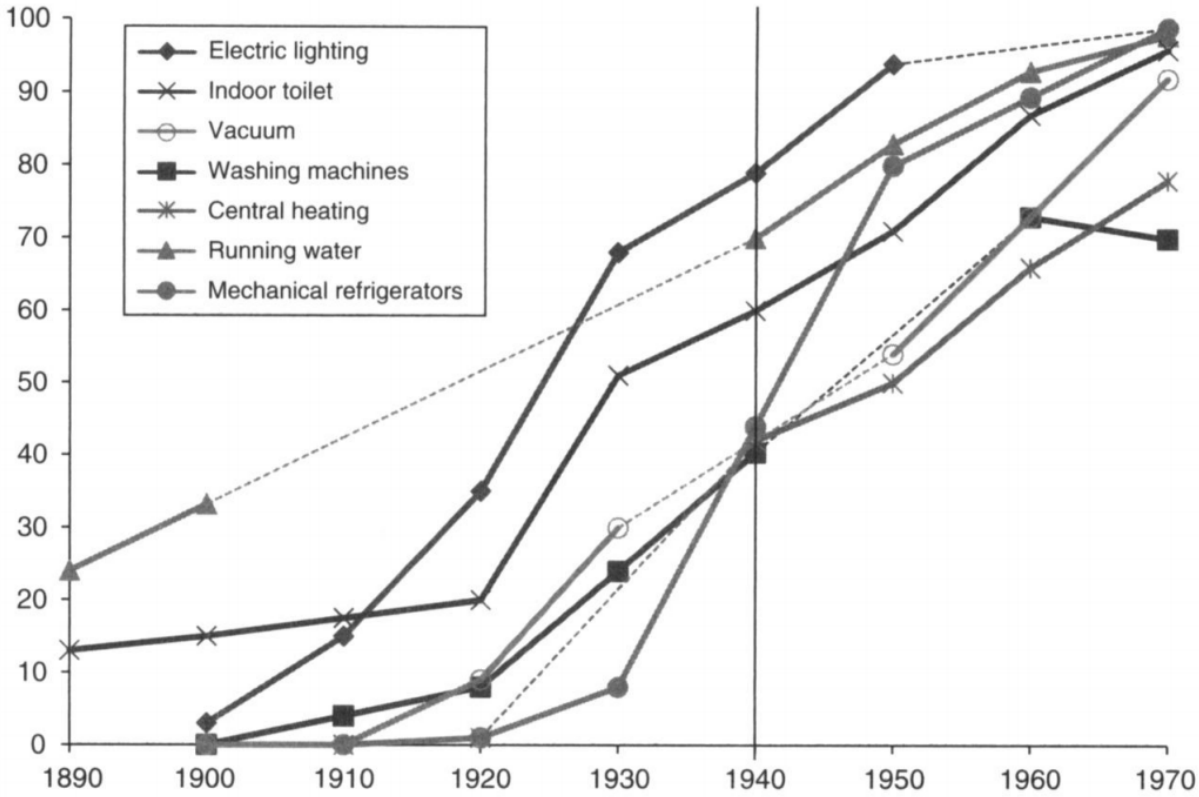
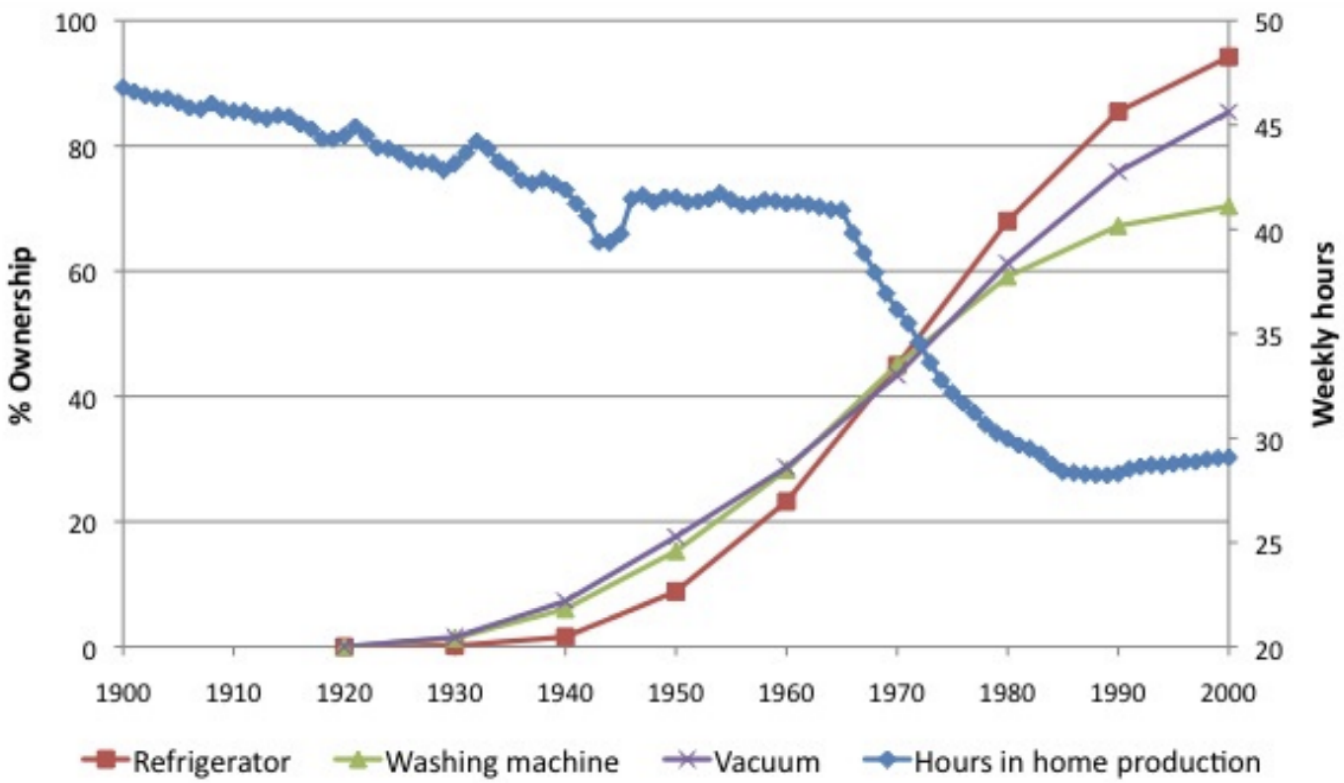



FIGURE 2. PROPORTION OF HOUSEHOLDS WITH MODERN HOUSEHOLD TECHNOLOGY, 1890–1970

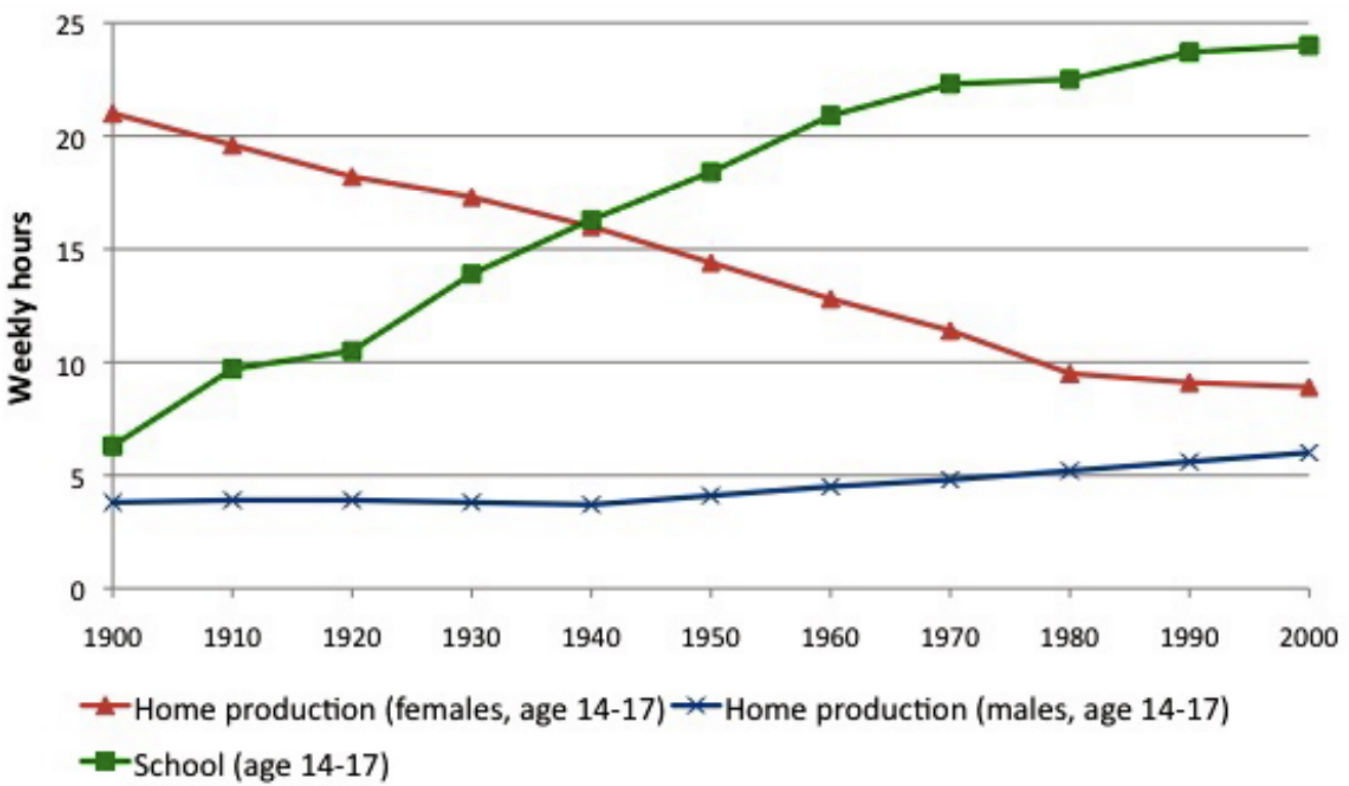
*Note:* Dashed lines indicate linear interpolation between data points.

*Source:* Lebergott (1976, 260–88).

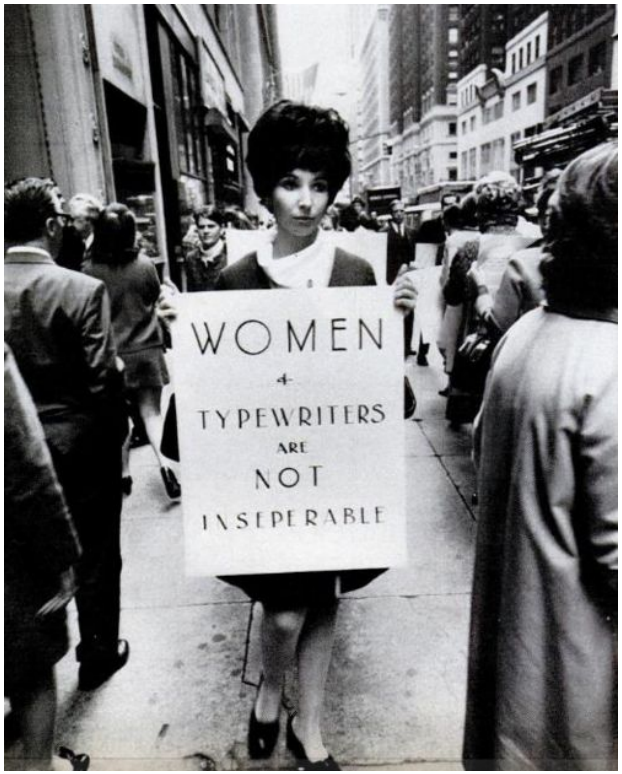
# Schooling, Technology and Mobility



# Schooling, Technology and Mobility



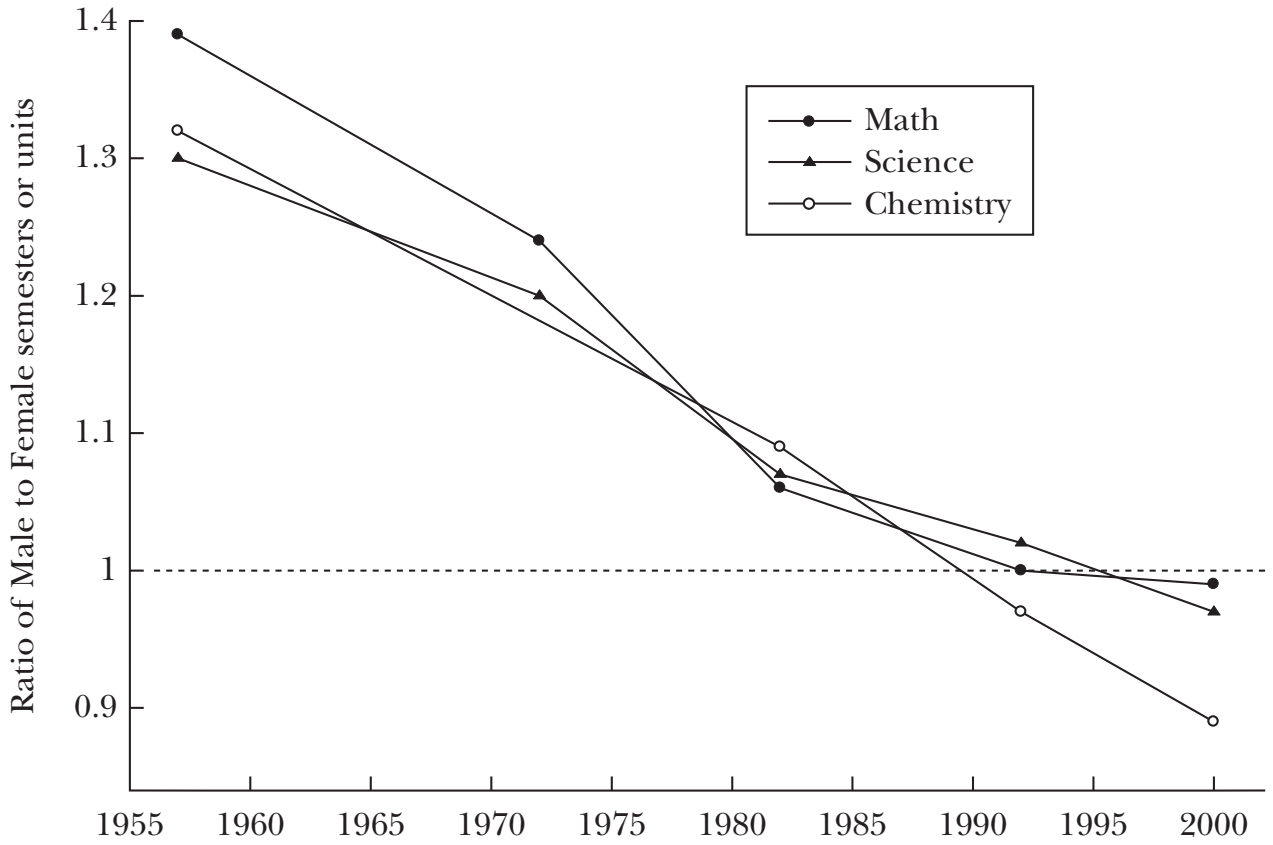
# Schooling, Technology and Mobility



# Schooling, Technology and Mobility

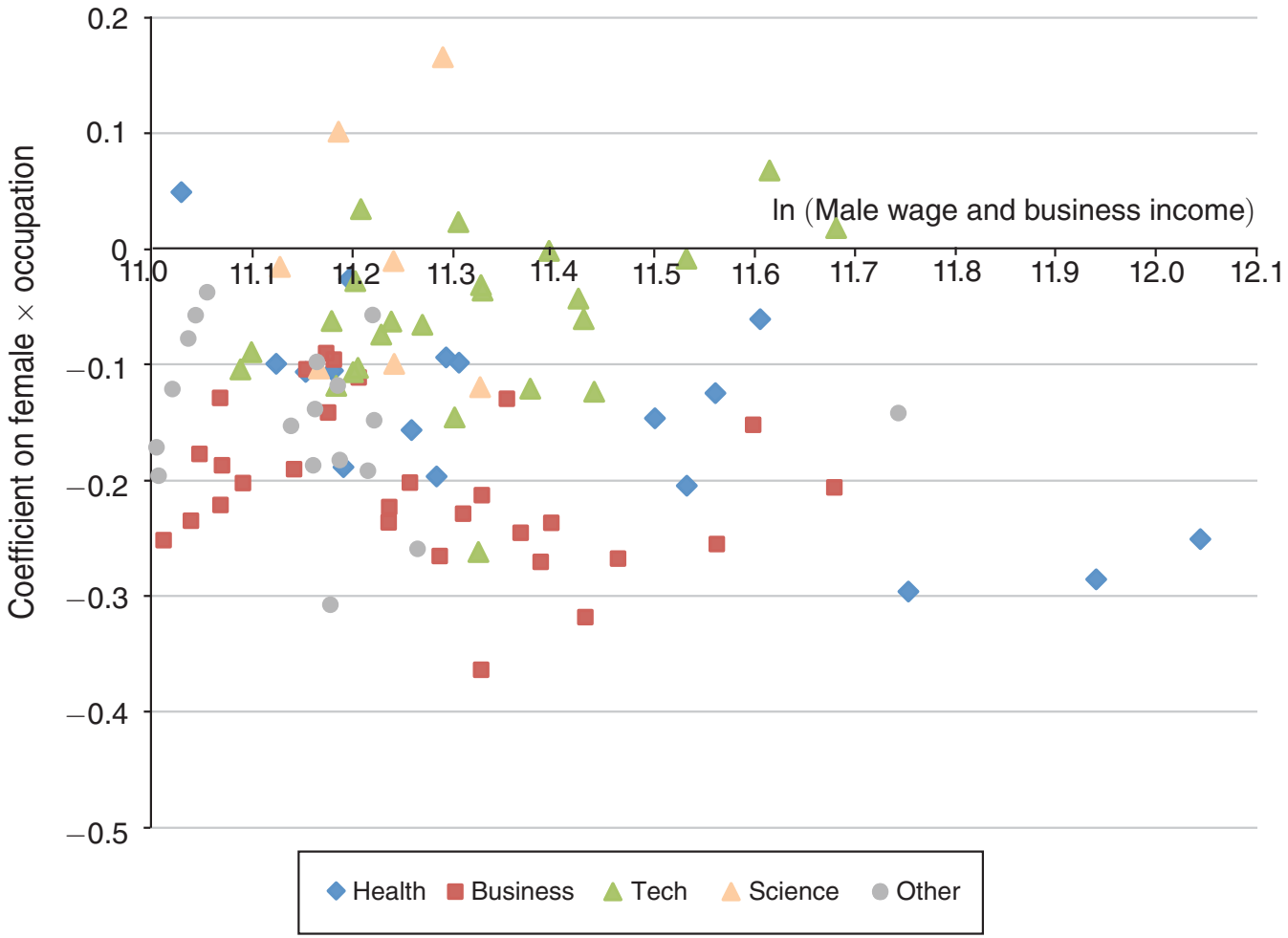
*Figure 5*

**Male-to-Female Ratio of High School Courses in Math and Science, 1957 to 2000**



# Schooling, Technology and Mobility

Part C. Full-time, full-year less than 45 years old for the approximately 95 highest (male) income occupations



# Schooling, Technology and Mobility

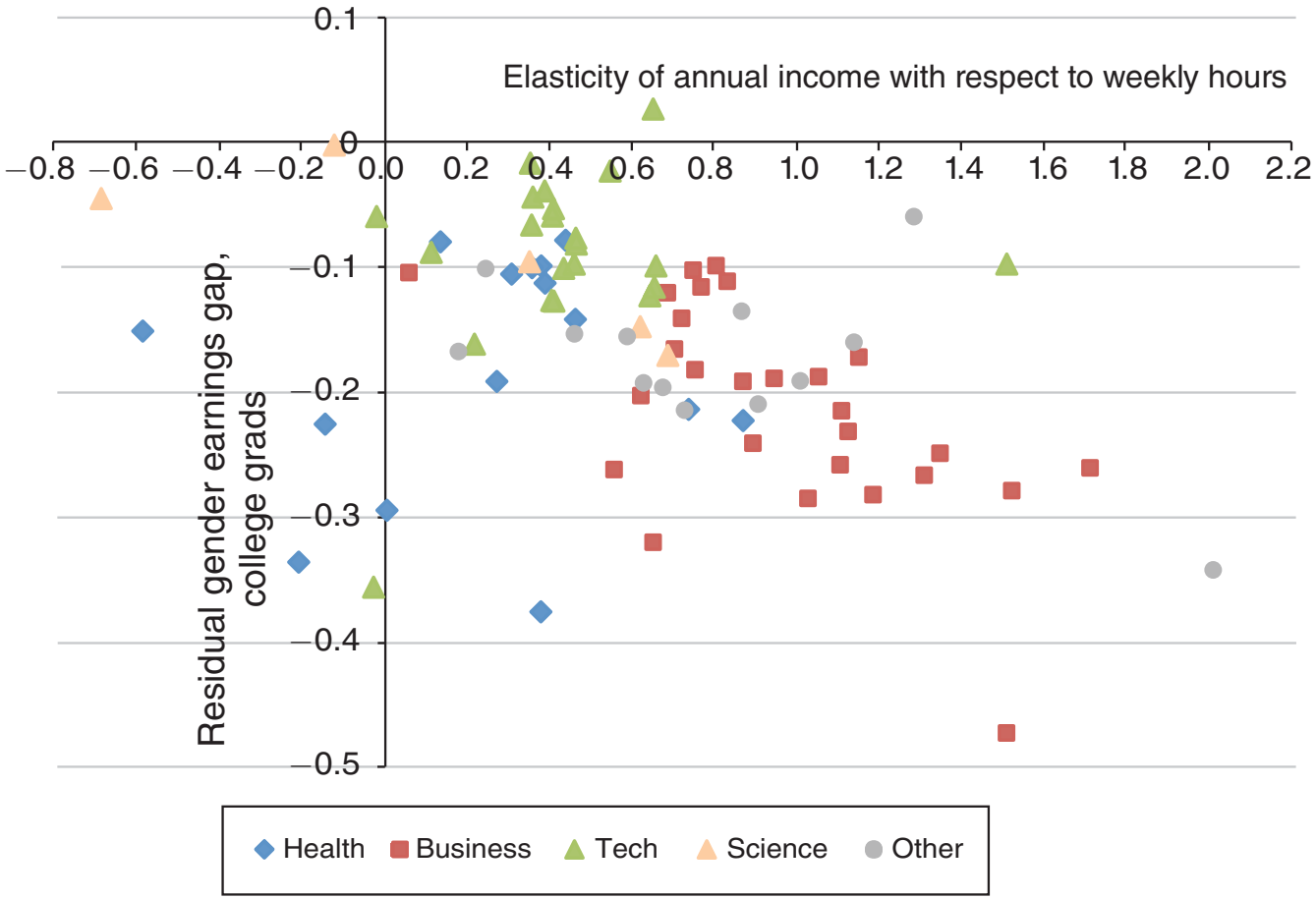
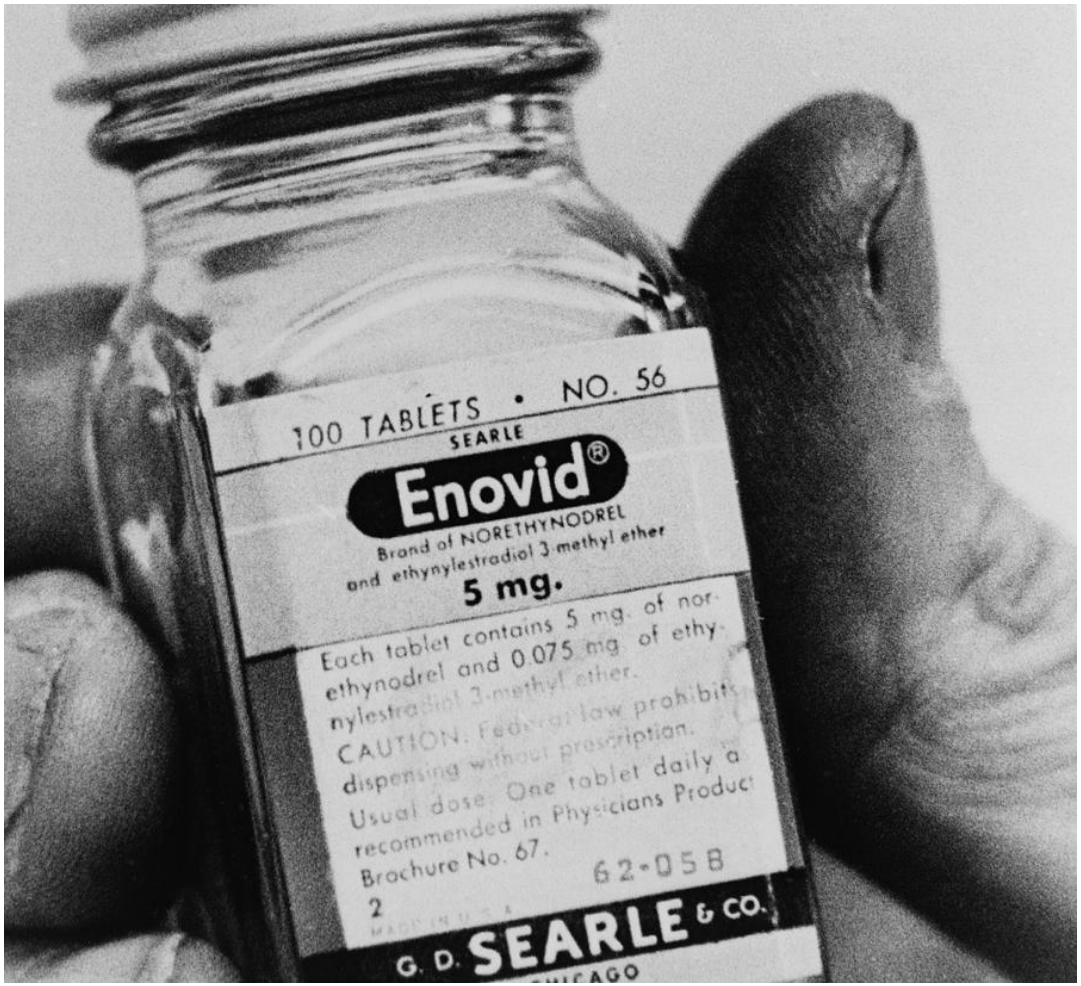



FIGURE 3. RELATIONSHIP BETWEEN THE ELASTICITY OF EARNINGS WITH RESPECT TO HOURS AND THE GENDER EARNINGS GAP

# A Different Role for Technological Change

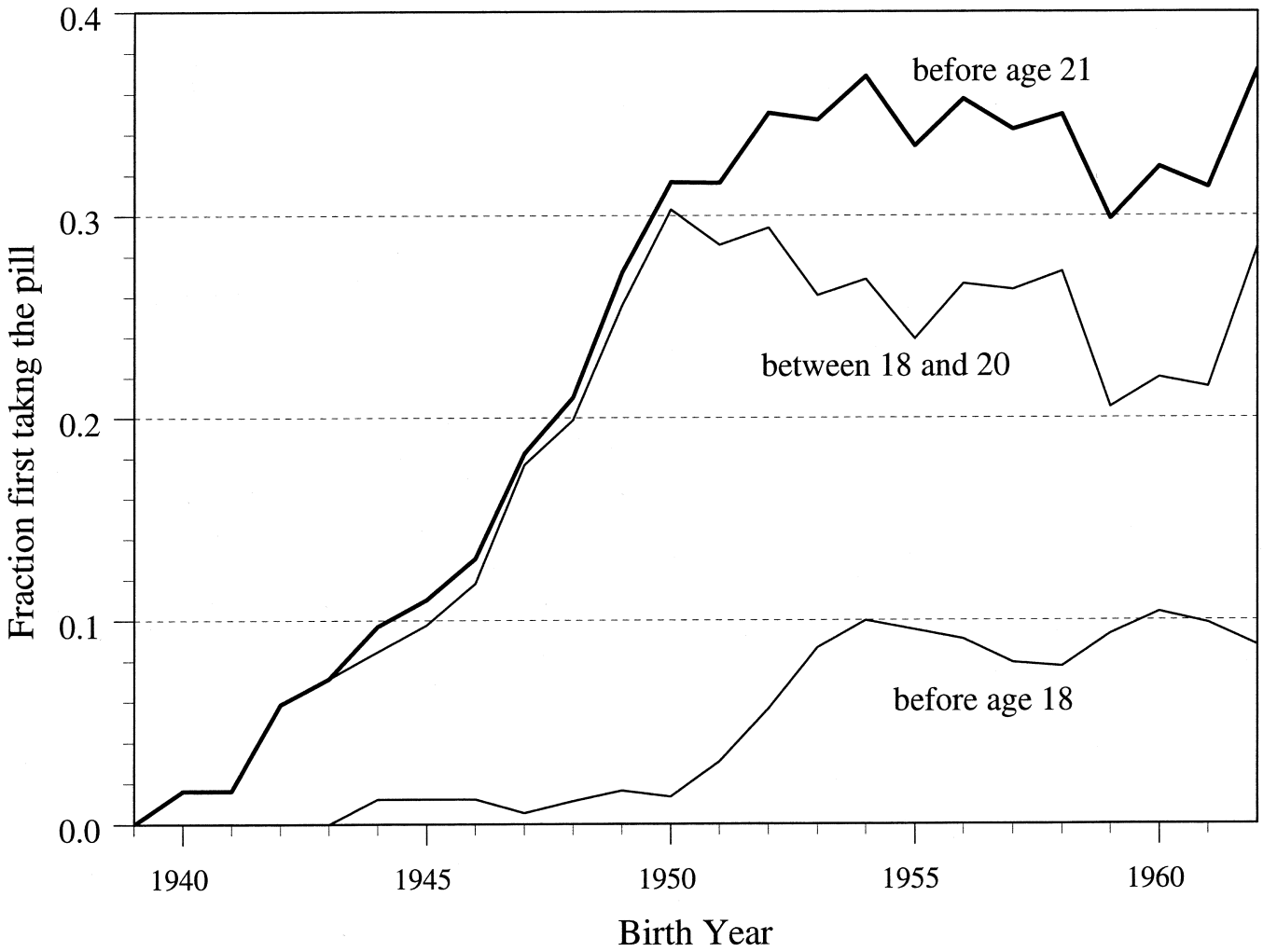



Enovid, 1960

# A Different Role for Technological Change

26th Amendment, 1971

# A Different Role for Technological Change



# A Different Role for Technological Change

TABLE III
THE EFFECT OF EARLY LEGAL ACCESS TO THE PILL ON FERTILITY

| Dependent variable | 1 = First birth before age 22[a] | | | 1 = Before 19[b] | 1 = Before 36[c] | Children ever born[d] |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Mean dependent variable | | 0.497 | | 0.201 | 0.973 | 2.38 |
| ELA to pill | −0.071 | −0.076 | −0.093 | −0.011 | −0.001 | −0.062 |
| | [0.039] | [0.039] | [0.043] | [0.037] | [0.031] | [0.086] |
| Early legal access to abortion | | | −0.074 | −0.086 | −0.006 | 0.242 |
| | | | [0.057] | [0.045] | [0.006] | [0.120] |
| ELA to pill and abortion | | | 0.057 | 0.002 | 0.005 | −0.186 |
| | | | [0.082] | [0.065] | [0.008] | [0.114] |
| Fixed effects | S, C[e] | S, C, SxC[e,f] | S, C, SxC[e,f] | S, C, SxC[e,f] | S, C, SxC[e,f] | S, C, SxC[e,f] |
| Observations | 91791 | 91791 | 91791 | 91791 | 91791 | 91791 |
| Log-likelihood | −62118 | −61885 | −61866 | −43968 | −9892 | −145419 |

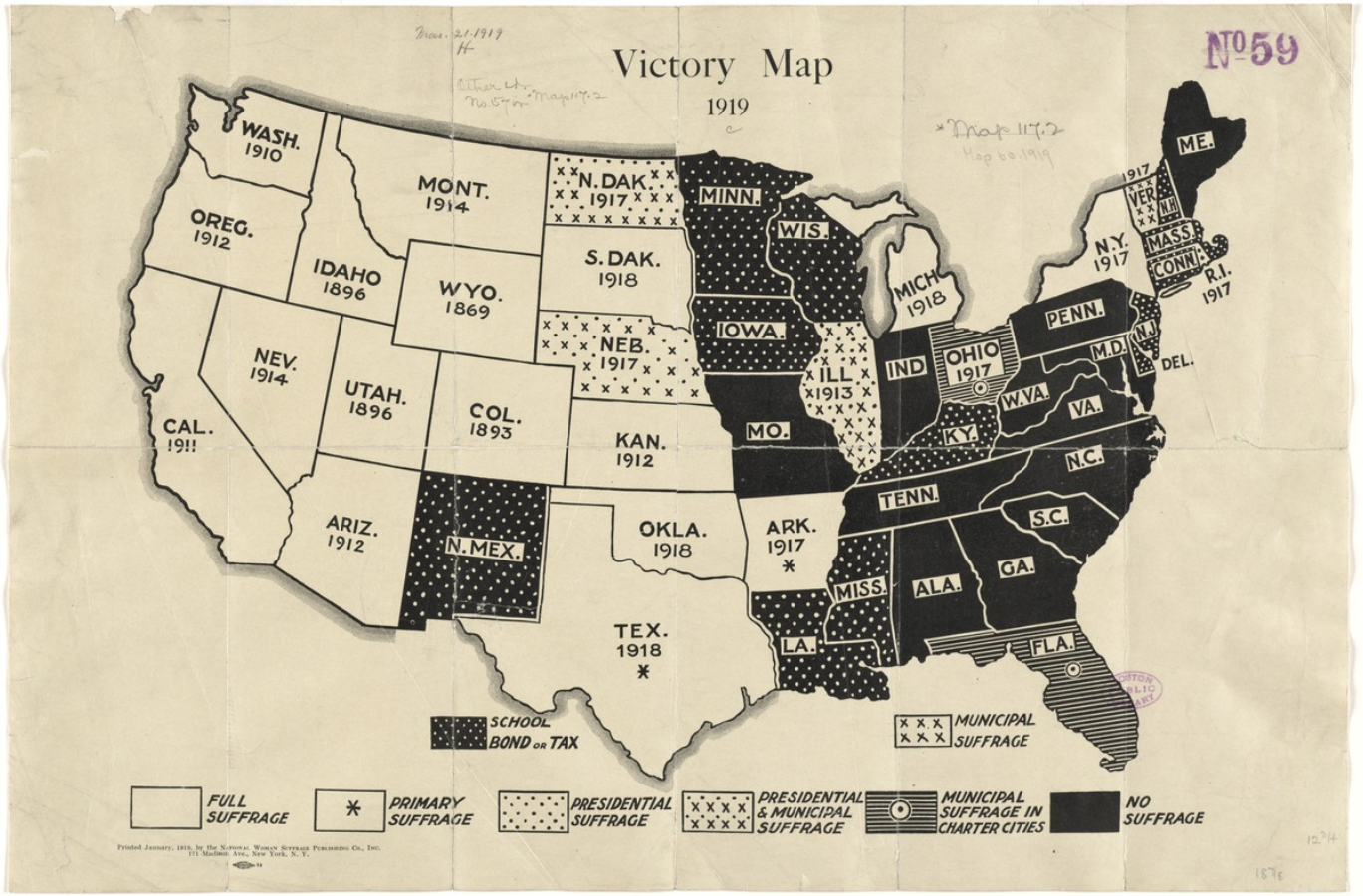
# A Different Role for Technological Change

TABLE IV
THE EFFECT OF EARLY ACCESS TO CONTRACEPTION ON LABOR MARKET PARTICIPATION

| Dependent variable | Mean dependent variable[a] | 1 = In the labor force | | | | |
|---|---|---|---|---|---|---|
| | | March *CPS* | | | | June *CPS* |
| | | (1) | (2) | (3) | (4) | (5) |
| ELA to pill × 21–25 | 0.605 | 0.003 | 0.005 | −0.003 | 0.009 | −0.048 |
| | | [0.006] | [0.006] | [0.008] | [0.009] | [0.059] |
| ELA to pill × 26–30 | 0.580 | 0.039 | 0.042 | 0.040 | 0.028 | 0.005 |
| | | [0.007] | [0.006] | [0.009] | [0.010] | [0.022] |
| ELA to pill × 31–35 | 0.640 | 0.016 | 0.019 | 0.022 | 0.019 | 0.004 |
| | | [0.006] | [0.006] | [0.009] | [0.010] | [0.021] |
| ELA to pill × 36–40 | 0.711 | −0.002 | 0.002 | 0.004 | 0.007 | 0.001 |
| | | [0.007] | [0.006] | [0.010] | [0.008] | [0.023] |
| ELA to pill × 41–44 | 0.752 | −0.006 | −0.003 | −0.007 | −0.007 | 0.091 |
| | | [0.008] | [0.008] | [0.012] | [0.008] | [0.042] |
| Fixed effects | | R, Y, C[b] | R, Y, C, RxYear[c] | R, Y, C, RxYear[c] | R, Y, C, RxYear[c] | S, Y, C, SxYear[d] |
| Age of majority states | | | | X | | |
| Abortion controls[e] | | | | | X | X |
| First birth before 22[f] | | | | | | Yes |
| Observations | | 733419 | 733419 | 245943 | 733419 | 103972 |
| Log likelihood | | −454635 | −454359 | −150263 | −454341 | −59671 |

# Discrimination, Institutional and Otherwise

# Discrimination, Institutional and Otherwise



# Discrimination, Institutional and Otherwise

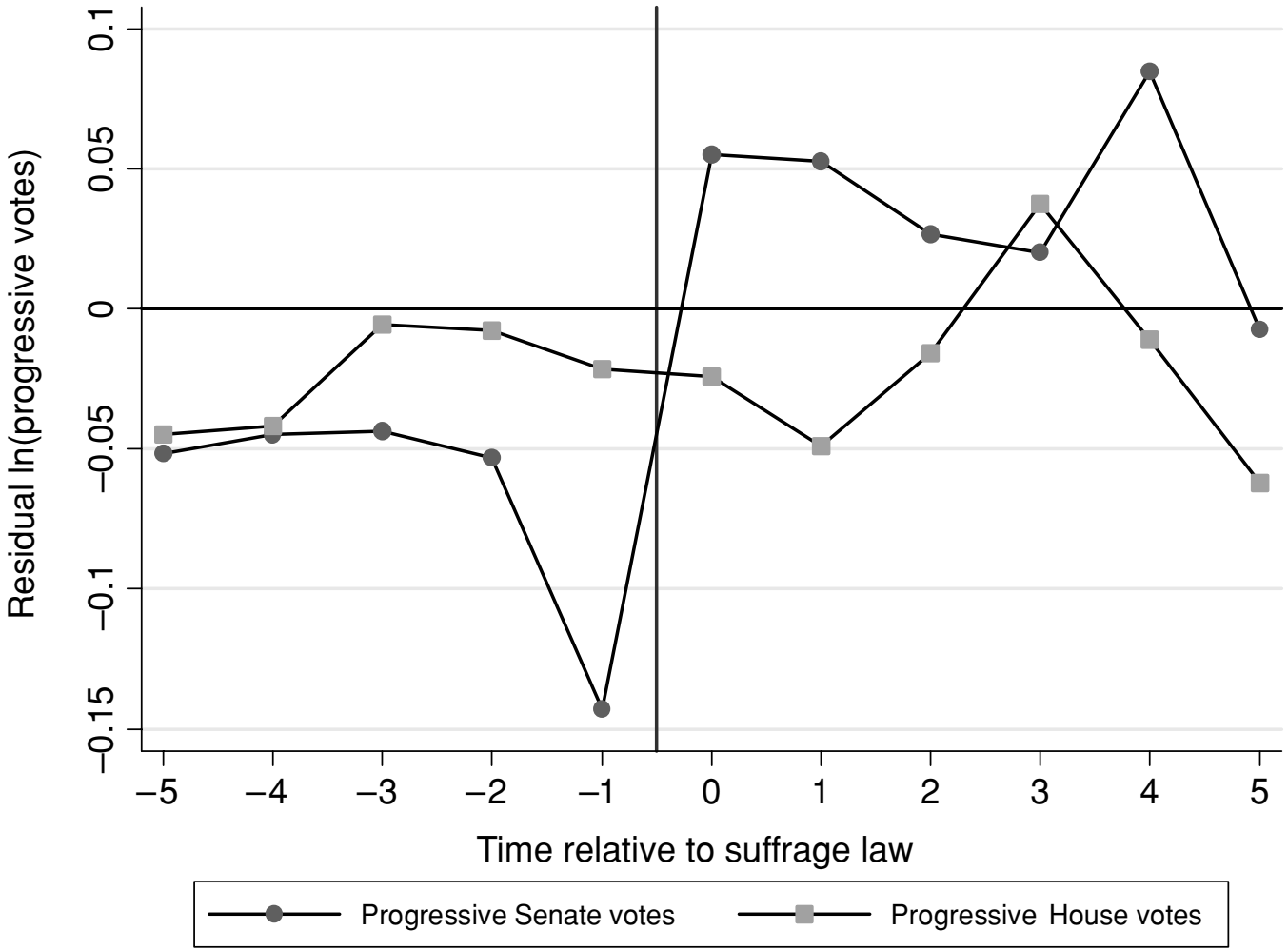



FIGURE III
"Progressive" Legislative Votes and Women's Suffrage Law Timing

# Discrimination, Institutional and Otherwise

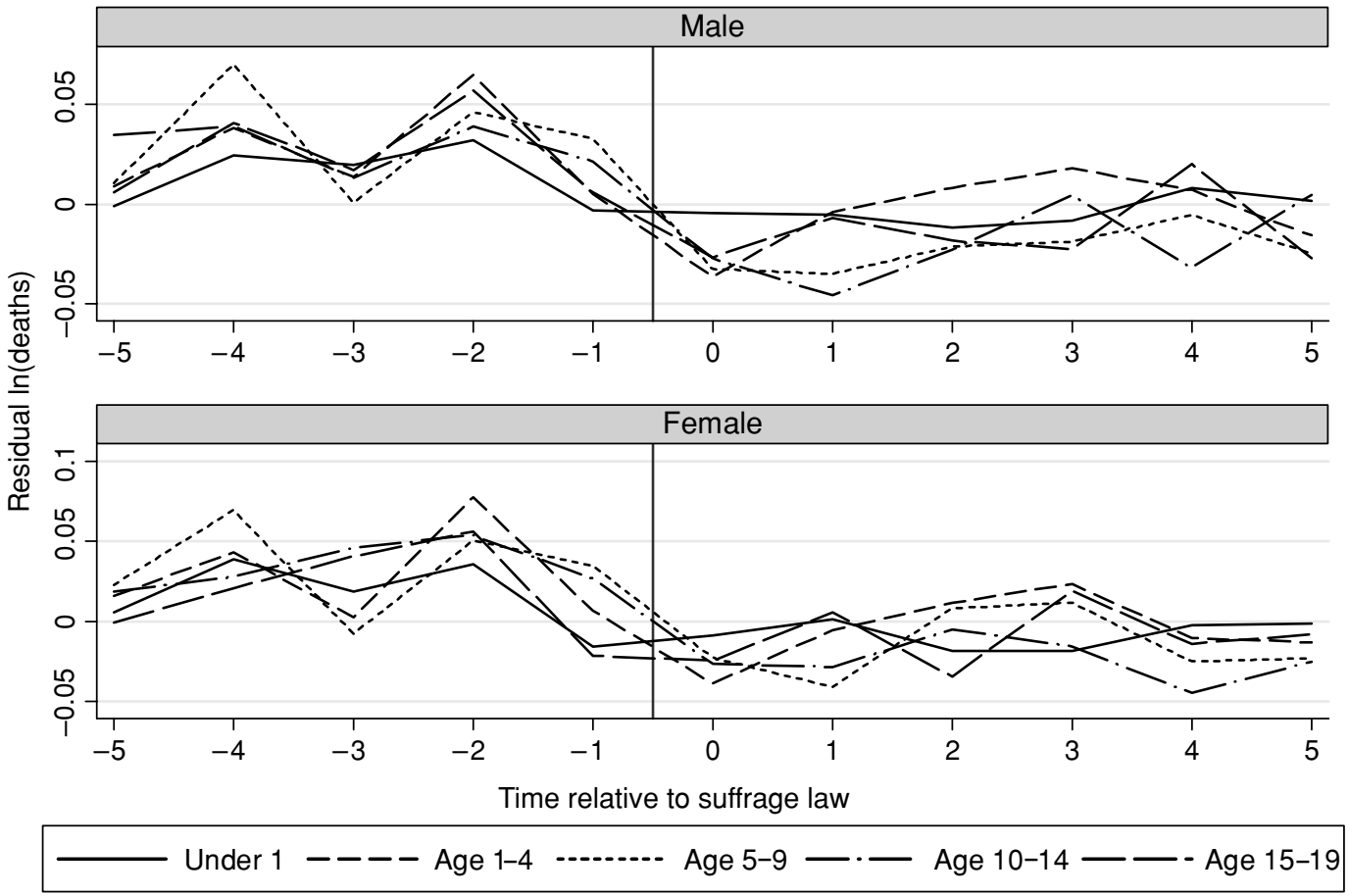



FIGURE IV
Deaths by Age and Sex and the Timing of Suffrage Laws

# Discrimination, Institutional and Otherwise

## Gendered Language in Teacher Reviews

This interactive chart lets you explore the words used to describe male and female teachers in about 14 million reviews from RateMyProfessor.com.

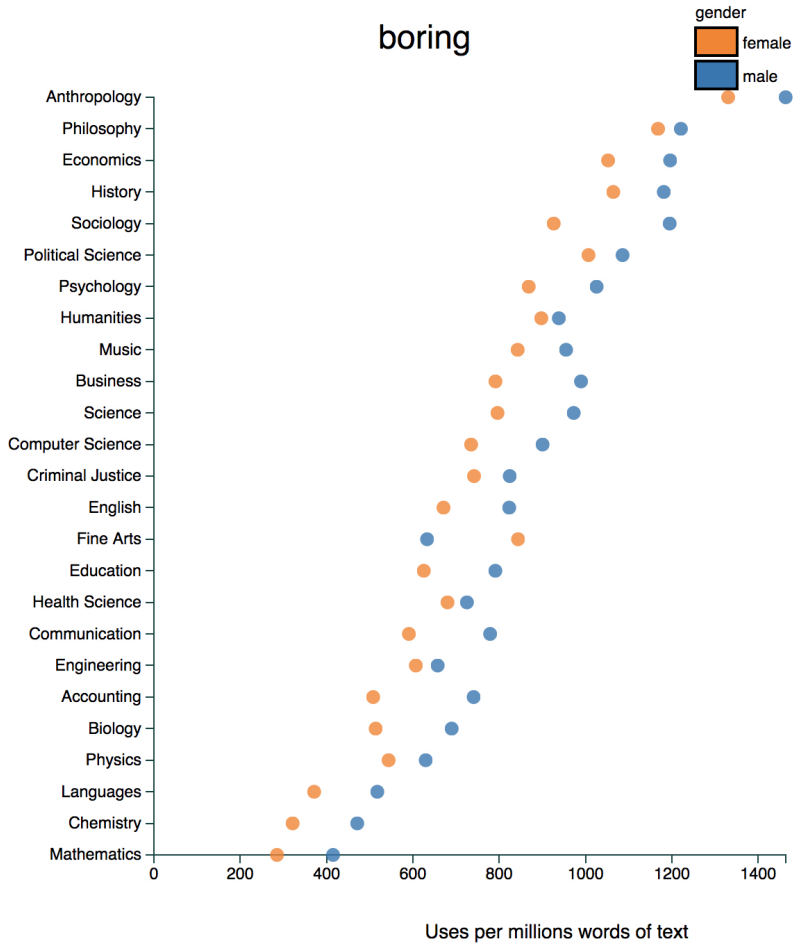
You can enter any other word (or two-word phrase) into the box below to see how it is split across gender and discipline: the x-axis gives how many times your term is used per million words of text (normalized against gender and field). You can also limit to just negative or positive reviews (based on the numeric ratings on the site). For some more background, see here.

Not all words have gender splits, but a surprising number do. Even things like pronouns are used quite differently by gender.

**Search term(s) (case-insensitive):**
**use commas to aggregate multiple terms**

boring

All ratings | Only positive | Only negative




Gendered Language in Teacher Reviews