Returns to Education for Women: Evidence from U.S. Compulsory Schooling Laws [*]

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Abstract

This paper estimates the causal returns to education for women by exploiting plausibly exogenous variation from the first wave of U.S. state compulsory schooling laws. I use legally mandated attendance requirements as instruments for years of education, drawing on the 1940 complete-count census and newly linked longitudinal data. An additional year of education increases women's probability of gainful employment by 7.1 percentage points and raises wages for working women by 16.9 percent, with larger effects for women from low-SES and rural backgrounds. Education also affects marriage outcomes, delaying marriage among advantaged women, increasing the likelihood of remaining unmarried among disadvantaged women, raising divorce rates, and improving spouse quality.

JEL Codes: I26, J16, J24, N32

1 Introduction

The literature on returns to education is one of the largest in labor economics. An increasing body of work now examines women specifically, a development that is well justified: women's educational attainment has risen dramatically worldwide, and in the United States, women now surpass men in several dimensions, including college enrollment and completion, as well as the attainment of master's and doctoral degrees (Goldin, 1990; Goldin, 2006; Goldin, 2021).

Education plays a crucial role in shaping women's economic and social opportunities, particularly in settings where women's access to labor markets is constrained. In such contexts, the returns to education for women may extend beyond earnings and operate through additional channels, including marriage-related decisions such as the timing of marriage and spouse quality. This raises three central questions: how does education affect women's labor market outcomes, how does it shape marriage market outcomes, and how do these returns vary across socioeconomic backgrounds? As women's roles in society have evolved, understanding these questions has become increasingly important.

To examine the causal returns to education on women's labor and marriage outcomes, I exploit plausibly exogenous variations from the first wave of U.S. state compulsory schooling laws. I use legally mandated attendance requirements as instruments for years of education, drawing on the 1940 complete-count census,[1] which provides information on educational attainment as well as labor and marriage outcomes for the relevant cohorts while they were still of working age. I further incorporate the Census Tree linked data (Price et al., 2021; Buckles et al., 2023a) to examine heterogeneity in the returns to education by socioeconomic background, measured using fathers' occupational status. These data rely on user-contributed links from the genealogy platform *FamilySearch.org*, overcoming a major challenge in historical linkage—tracking women who often changed their surnames after marriage—and substantially improving the ability to

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[1]The 1940 census is the first federal census to record educational attainment for the entire population (Ruggles et al., 2021). Although the 1950 complete-count census has recently become available, educational information in 1950 is reported only for sample-line individuals. The affected cohorts were also older in 1950, with many no longer of working age.

follow women longitudinally. Restricting the sample to native-born White women, I find that state compulsory schooling laws strongly predict women's educational attainment, consistent with prior work that has primarily examined men (Stephens and Yang, 2014; Clay et al., 2021).

The analysis yields three main findings. First, I show that women experienced large returns to education in the labor market. The two-stage least squares (2SLS) estimate indicates that an additional year of education increased women's probability of having a gainful occupation by 7.1 percentage points (pp.), a substantial increase relative to a 25% baseline employment rate. Furthermore, conditional on earning positive wages, an additional year of education increased working women's wage earnings by 16.9%. These sizable effects partly reflect an improvement in occupational status: education enabled women to move into higher-paying skilled occupations, such as by increasing the probability of working as a stenographer, clerical worker, and bookkeeper by 1.2-3.3 pp. Labor market gains were especially pronounced for women from disadvantaged backgrounds. On gainful employment, the effect is 9.1 pp. for women from low-SES households and 4.3 pp. for women from high-SES households. Because children from low-SES households started from a lower baseline of employment in 1940, the relative gains in employment were even more pronounced for them, although the difference in estimates by SES is only marginally significant. Additionally, education also had significantly stronger effects in rural areas, raising gainful employment, labor supply, and occupational status. The combined results suggest education helped shift low-SES and rural women out of unpaid household labor and into wage-earning market work.

Second, education also altered women's marriage outcomes, including divorce and the timing of marriage. On average, education increased women's probability of divorcing or separating by 1.4 pp., a large increase relative to the 2.5% baseline. This suggests that education enabled women to leave marriages, potentially by improving their access to labor market opportunities and financial independence. Education also delayed the age at first marriage by 0.7 years, a pattern consistent with the predictions of a simple dynamic model of women's work and marriage decisions under rising educational attainment. This average effect, however, masks stark het-

erogeneity by socioeconomic background. Among high-SES and non-farm women, education primarily postponed marriage by 1.4 years, but did not affect the probability of remaining unmarried. Among women from low-SES and farm households, education instead increased the probability of remaining unmarried by 2.5 pp., with virtually no delay in age at first marriage conditional on marrying. These patterns suggest education operated through different mechanisms by socioeconomic status: it raised the opportunity cost of marriage for low-SES women, while extending the period before marriage among high-SES women.

Finally, I find that education improved spouse quality for married women, as reflected in their husbands' labor market outcomes. 2SLS estimates indicate that one additional year of the wife's education is associated with a 3.9 pp. reduction in her husband's probability of being unemployed, a large effect relative to a 13% baseline unemployment rate. The effect is more pronounced among women from low-SES and farm households. Additionally, the wife's education did not affect husbands' occupational status or labor supply, but it was associated with a 7.4% increase in husbands' wage earnings, and a 9.4–11.6 pp. reduction in the likelihood that husbands reported non-wage income, particularly among women from low-SES, farm, and rural households. The evidence indicates that education shifted disadvantaged women away from self-employed men and into marriages with salaried men earning more stable wages. More broadly, the results are consistent with an interpretation in which education expanded disadvantaged women's ability to search longer and to sort into higher-quality matches.

Compared with men's labor market returns to education during this period (Feigenbaum and Tan, 2020; Clay et al., 2021), women experienced larger gains. This pattern is consistent with findings for later cohorts (Dougherty, 2005) and likely reflects multiple underlying factors, such as the fact that women often start from lower baseline earnings and the sample of working women is more selective than that of men. Similar labor-market constraints have been documented in developing-country contexts (Duflo, 2012; Montenegro and Patrinos, 2014; Jayachandran, 2015), where women also face limited labor force participation and restricted access to skilled employment. Likewise, the positive effects of education on women's marriage market

outcomes in this setting echo patterns observed in developing countries (Hahn et al., 2018; Wang and Ou, 2024; Kaufmann et al., 2013). Together, these findings suggest that the historical United States provides a useful parallel: although institutional contexts differ, women in both settings faced constrained opportunity sets in the labor and marriage markets at low levels of education, making additional education particularly valuable at the margin.

This paper contributes to several strands of literature. First, it adds to the compulsory schooling literature. While a large body of work has examined the effects of first- and second-wave U.S. compulsory schooling laws across different birth cohorts (Angrist and Krueger, 1991; Schmidt, 1996; Margo and Finegan, 1996; Lleras-Muney, 2002; Goldin and Katz, 2011; Stephens and Yang, 2014; Clay et al., 2021), existing studies have mainly focused on men. By examining women, this paper fills an important gap in our understanding of how early education reform shaped women's economic outcomes. Second, the paper contributes to the literature on women's labor market returns to education, which has primarily emphasized earnings conditional on employment (Mincer and Polachek, 1974; Corcoran and Duncan, 1979; Butcher and Case, 1994; Kane and Rouse, 1995; Card, 1999; Buchinsky, 2001, among others). This paper is distinctive in that it analyzes a broader set of labor market outcomes, including employment and occupational status. Third, recognizing that education shapes women's outcomes beyond the labor market, this paper examines how education affects women's marriage, divorce, and spouse quality, extending a related literature centered on women (Benham, 1974; Goldstein and Kenney, 2001; Lefgren and McIntyre, 2006; Kim and Sakamoto, 2017; Shenhav, 2021; Lennon, 2023). It further highlights heterogeneity by socioeconomic background, showing how education differentially shaped outcomes for women from advantaged and disadvantaged households.

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2 Background

2.1 State Laws on Compulsory Attendance, Child Labor, and Continuation

The first wave of U.S. state legislation on compulsory attendance, child labor, and school continuation was enacted in the late nineteenth and early twentieth centuries, specifying the ages during which children were required to attend school. Among these categories of laws, compulsory attendance laws were established first, which set a minimum school entry age, a maximum school leaving age, and a minimum duration of required attendance. Massachusetts was the first state to enact compulsory attendance laws in 1852, and other states in the Northeast (e.g., Vermont and New Hampshire) followed suit quickly, establishing their own compulsory attendance laws in the 1860s and 1870s. By contrast, States in the South generally did not establish compulsory attendance laws until the early 1900s. By 1920, compulsory attendance laws were in place in all U.S. states. Over time, compulsory attendance laws were amended to lengthen required schooling, for example by raising maximum leaving ages. In some states, enforcement mechanisms such as truant officers and fines were introduced. According to W.E.B. Du Bois, who grew up in a small town in western Massachusetts, recalled that "truant laws were enforced" and he was brought up with "the idea of regular attendance at school" (Du Bois, 1983).

Alongside compulsory attendance laws, many states introduced child labor legislation in the early twentieth century.[2] Child labor laws often allowed children to leave school for work at age 14 through exemptions tied to completed schooling levels, which varied by state. While many states specified that children must complete eighth grade to be eligible for a labor permit, some states (such as Arizona, Missouri, and Vermont) required a lower level of schooling (Deffenbaugh and Keesecker, 1935). Additionally, state governments also enacted school continuation laws requiring working children below the maximum leaving age to attend school part-time.

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[2]A few states had enacted child labor laws before 1900, but they lacked enforcement, and there was an increase in child labor between 1880 and 1900 (Bliss, 1905). Between 1900 and 1910, however, more states established child labor laws and committees to enforce these laws, and the share of young children (13 years old and under) working declined below 5 percent by 1930 (Feigenbaum and Russo, 2020), although Moehling, 1999 finds that minimum age limits had little effect in the decline of child labor in the long run.

The required school time was short, usually only a few hours per week, but it increased the opportunity cost of hiring children under the maximum school leaving age since they might not always be excused from school (Goldin and Katz, 2011).

Together, compulsory attendance, child labor, and continuation laws generated substantial variation in required years of schooling across cohorts and states. This paper follows the procedures in Stephens and Yang, 2014 and Clay et al., 2021, which calculate the total number of years of required schooling while taking age limits and exemptions into consideration.[3] Using the data obtained from the replication package of Clay et al., 2021, I show the variations in length of schooling required for birth cohorts born between 1880 and 1910 in Figure 1. Later cohorts faced longer compulsory schooling requirements, and children outside of the South were affected by these laws earlier than children in the South.

2.1.1   Are State Laws Endogenous?

Using state-level compulsory schooling laws as a source of exogenous variation requires addressing potential confounding factors. For example, Lleras-Muney, 2002 shows that enacted compulsory attendance and child labor laws did not predict past educational attainment, alleviating concerns about reverse causality.

Nevertheless, one might worry that these laws are correlated with other state-level factors that also contributed to rising levels of women's education during this period. For instance, early suffrage laws may have improved children's schooling by increasing public spending on education and health (Kose et al., 2021), potentially confounding the effect of compulsory schooling laws. To test this directly, I estimate three sets of regressions where the dependent variables are the adoption of compulsory attendance laws, child labor laws, and school continuation laws. In each regression, the independent variable is a potential source of endogeneity, such as early suffrage legislation or the share of foreign-born individuals. All specifications include state and

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[3]Many previous works have also discussed the variations in length of school attendance generated by state laws, see Moehling, 1999; Lleras-Muney, 2002; Goldin and Katz, 2011; Clay et al., 2012; Rauscher, 2015.

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region by year fixed effects, and standard errors are clustered at the state by year level.

Table A1 explains how different factors affected the passage of compulsory schooling laws. Importantly, two plausible confounders appear unrelated to the timing of legislation. First, early suffrage laws had little impact on the adoption of compulsory attendance, child labor or school continuation laws. Additionally, the establishment of a state federation of the General Federation of Women's Clubs (GFWC), a measure of women's collective activism and a proxy for women's status, was likewise unrelated to the timing of these laws. This suggests that women's political influence was not the primary driver of compulsory schooling laws.

However, some correlations emerge with other state-level characteristics. Industry composition mattered: farming was negatively correlated with the passage of compulsory schooling laws, while manufacturing was positively correlated, though both effects were modest in magnitude. Demographic factors also played a role: states with larger shares of foreign-born and non-white individuals were more likely to pass compulsory schooling laws, whereas states with higher literacy rates were less likely to do so. Since the sample is restricted to native-born White individuals, the endogeneity issue related to demographic variables is partially mitigated.

2.2   Women's Education during the Late 19th and Early 20th Centuries

Beginning in the early nineteenth century, the American education system increasingly embraced gender neutrality, providing similar levels of schooling to female and male students up to age 15 (Goldin and Katz, 2008). Consistent with this institutional background, evidence from both federal and state censuses indicates that women and men attained comparable levels of education. Using the 1940 complete-count federal census, restricted to native-born white individuals aged 28 to 55, I find that women were slightly more likely than men to have completed both eighth and twelfth grade across all birth cohorts in Figure 3 (top figure). To address concerns that this pattern might reflect a selected group of women who had longer longevity than men, I show that the same gender differences are present in the 1915 Iowa state census (bottom

figure), which covers slightly younger cohorts.

While women and men attained similar levels of education, the purpose of education differed sharply by gender. Most women did not attend school with the expectation of pursuing life-long careers; instead, education was framed as a means of acquiring the knowledge and morals needed to become good wives and mothers. Yet the very skills designed to improve women's performance as homemakers often enhanced their opportunities in the labor market. Training in bookkeeping and accounting, for instance, was intended to help women manage household finances after marriage, but it also opened opportunities for paid work as bookkeepers. Like-wise, instruction in typewriting and stenography enabled many women to work as secretaries or stenographers, often for a short period before marriage (Rury, 1984).

This acquisition of transferable skills through education directly influenced women's employment prospects and the returns to education. Educated women gained access to skilled occupations that offered higher wages (Goldin and Katz, 2008). The value of their education was further amplified by demand-side factors (Becker, 1985); technological advancements, for example, created entirely new job categories like telephone operation, which became a major employer for American women in the early 20th century (Feigenbaum and Gross, 2024). Occupational segregation may have also further increased the value of education, as men were often funneled into management and administrative roles, leaving lower-ranked positions that educated women could fill.

On the other hand, education was also seen as enhancing women's value in the marriage market. Reformers and educators argued that schooling made women more efficient homemak-ers and better mothers by combining moral instruction with practical training in domestic skills such as sewing and cooking—qualities considered essential for managing households and rais-ing children (Rury, 1991; Nash, 2005). Additionally, education enabled women to contribute di-rectly to household income through skilled employment, providing valuable insurance in times of a husband's job loss.

3   Conceptual Framework

While the historical evidence highlights that women's education improved outcomes in both labor and marriage markets, it remains unclear how these benefits influenced women's decision-making processes. The model below formalizes these trade-offs and helps interpret the differential effects across groups. Suppose time is discrete, denoted by $t = 0, 1, 2, \ldots$, and schooling is represented by s. Each woman starts out unmarried, and her labor market payoffs are defined as follows:

- If the woman works, she gets $u_W(s) = w(s) - c$, where $w(s)$ is the wage earnings that depend on schooling, and c is the cost of leisure.

- If the woman does not work, she gets u_N which can be normalized to 0.

For every period, the woman also has probability π to receive a marriage offer with match quality θ drawn from a distribution $F(\theta)$:

- If the woman accepts the marriage offer, she gets a payoff $u_M(s, \theta) = m(s) + \theta$ for every period after, with a discount factor β. Once married, she no longer faces work decisions due to marriage bars.

- If the woman does not accept the marriage offer, she remains single and continues to face work decisions.

As a result, the Bellman values for an unmarried and a married woman are:

$$V_U(s) = \max\{u_W(s), u_N\} + \beta\Big[(1 - \pi)\, V_U(s) + \pi\, \mathbb{E}_\theta\big[\max\{V_U(s), V_M(s, \theta)\}\big]\Big],$$

$$V_M(s, \theta) = \sum \beta^t u_M(s, \theta) = \frac{m(s) + \theta}{1 - \beta},$$

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This means that the woman will accept a marriage offer if and only if $\theta \geq \theta^*(s)$ where $V_M(s, \theta^*(s)) = V_U(s)$ and $\frac{d\theta^*}{ds} = (1 - \beta)V_U'(s) - m'(s)$. One immediate implication of this condition is that education allows women to search for longer, since a higher level of education increases the marginal surplus of work, and raises $\theta^*(s)$—the reservation quality of a marriage offer. However, the effect of education on the probability of ever marrying is ambiguous. Although higher education increases $\theta^*(s)$ and thus delays marriage, it may also improve the distribution of offers $F(\theta)$ by expanding women's social networks and exposure to higher-quality potential partners, resulting in better matches without necessarily reducing overall marriage rates. Hence, education may delay marriage without deterring it.

Overall, the model suggests that women's selection into marriage depends on whether the marginal surplus from marriage exceeds the marginal surplus from remaining unmarried, as they continue working and searching in the labor and marriage markets. The differences between the marginal surplus from work and marriage may depend on various factors, such as family socioeconomic background. To capture heterogeneity by SES, let x denote a woman's socioeconomic status. In the labor market, higher education increases potential earnings $w(s, x)$, but the marginal return to education could be larger for those from lower SES backgrounds (i.e., $\frac{\partial^2 w(s,x)}{\partial s \, \partial x} < 0$), reflecting their initially lower access to high-paying jobs. In the marriage market, higher education increases $u_M(s, \theta, x) = m(s, x) + \theta$, where $m(s, x)$ captures the contribution of schooling and socioeconomic background to marriage. Similarly, it could also be the case that $\frac{\partial^2 m(s,x)}{\partial s \, \partial x} < 0$, which indicates that as SES increases, the marginal effect of education on the marriage market decreases, and education raises marriage market returns more strongly for women from lower SES backgrounds.

4 Data

4.1 Compulsory Schooling Laws

Data on compulsory attendance, child labor, and school continuation laws are obtained from the replication package of Clay et al., 2021, who extends previous research by Eisenberg, 1988; Schmidt, 1996; Moehling, 1999; Lleras-Muney, 2002; Goldin and Katz, 2011; Stephens and Yang, 2014. The data provide cohort-by-state level variation in years of compulsory schooling required for various birth cohorts.

4.2 1940 Complete-Count Census

Data on women's labor and marriage market outcomes are based on the 1940 complete-count census (Ruggles et al., 2021), the first federal census to record educational attainment for the entire population. I restrict the sample to native-born White women aged 28 to 55 (who were born between 1885 and 1912), which ensures that respondents were of working age. Foreign-born individuals are excluded because many may have completed their schooling outside the United States and therefore would not have been exposed to state-level compulsory schooling laws. Additionally, Black women are not included, as Southern states adopted schooling laws substantially later than other regions, and both enforcement and compliance remained weak even after passage (Margo, 1990; Lleras-Muney, 2002; Stephens and Yang, 2014).

4.3 Census Tree Data

To study the heterogeneous returns to education based on family socioeconomic background, I use the linked data for women from the Census Tree Project (Price et al., 2021; Buckles et al., 2023a). The Census Tree data rely on user-contributed links from FamilySearch.org, a genealogy platform where users find their ancestors using historical records. This approach overcomes a major challenge in historical data linkage—tracking women who often changed their names

after marriage—and substantially improves the ability to link women longitudinally.

In particular, I use the Census Tree linked data to follow women in the 1940 census back to their childhood censuses, either in 1900, 1910, or 1920 (Buckles et al., 2023b; Buckles et al., 2023c; Buckles et al., 2023d). The linked data provide information on the father's occupation and occupational score, which are used as measures of socioeconomic background. An occupational score is a numerical measure assigned to each occupation, with higher scores indicating higher SES. I classify women as being from a high-SES household if their father's occupational score is above the median or if he held a skilled occupation. I also classify women's childhood farm and urban status based on their fathers' reported status. For married women, I similarly use Census Tree to link husbands observed in 1940 to their own childhood census records and construct parallel measures of spousal socioeconomic background.

One concern with genealogy data is that married women or women with children are more likely to be successfully tracked over time. Comparing descriptive statistics from the Census Tree linked sample to the 1940 census population in Table A4, I find that linked women are 0.9 years older and 2.2 pp. more likely to have ever married, though their educational attainment is very similar across both samples. To address this imbalance, I apply inverse probability weighting to the linked sample following Bailey, Cole, et al., 2020.

5 Empirical Strategy: IV

Education is an endogenous choice that often correlates with family socioeconomic backgrounds, making OLS estimates unlikely to capture causal effects. Selection issues, where unobserved family advantages affect both education and employment, can make OLS estimates understate the true effect of education. To address this, I instrument years of schooling using laws related to compulsory schooling, child labor, and school continuation. The IV estimates help mitigate omitted variable bias and better identify the causal effect of education.

5.1 Compulsory Schooling Laws As Instruments

Almost 90% of women aged 28 to 55 in 1940 had been affected by compulsory schooling laws when they were young. As shown in Figure 2, among those who were required to attend school, the vast majority were required to attend school for at least six years and at most ten years, while very few were required to attend school for only one to five years. Due to this non-linearity in the number of required years of attendance, I use a group of dummy variables that indicate different lengths of compulsory schooling as instruments for years of schooling completed. In particular, the instruments consist of four dummy variables, equal to 1 if the required number of years of attendance is six, seven, eight, and nine years or above.

The positive effect of compulsory schooling on years of schooling completed is illustrated in Figure 4 and Table A2. The results show that requiring children to attend school for six, seven, eight, and nine years or above increased their probability of completing sixth, seventh, eighth, and ninth grade respectively, which suggests that compulsory schooling laws are effective in increasing years of education. Among these estimates, requiring children to attend school for nine years or more has the largest effect, increasing the probability of finishing ninth grade by 4.1%, although it does not affect the probability of completing high school.

The instrumental variables specification used to estimate the returns to education for women is the following:

$$Y_{icsr} = \beta_0 + \beta_1 Educ_{icsr} + \gamma_s + \gamma_{cr} + \epsilon_{icsr}$$

$$Educ_{icsr} = \alpha_0 + CA'_{icsr}\Omega + \theta_s + \theta_{cr} + u_{icsr}$$

Y_{icsr} is the outcome variable in the 1940 census (that measures labor market returns or marriage market returns) for individual i who was born in birth cohort c, state s, and region r, and $Educ_{icsr}$ is the years of schooling completed. CA_{icsr} is a vector of instruments consisting of four dummy variables, equal to 1 if the required number of years of attendance is six, seven, eight,

and nine years or above. The specification also includes birth state fixed effects γ_s and birth year by birth region fixed effects γ_{cr}, with the standard errors clustered at the birth year by birth state level. With both fixed effects, β_1 captures changes within the state over time and variations across states but within the same region and birth cohort.

5.2 First Stage Results

Table 1 presents the first stage estimates of the instruments on years of schooling completed for several groups of women. Column 1 includes all native-born White women born between 1885 and 1912. The results first show that women required to attend school for six years did not experience a large positive effect on years of education relative to women who were not required to attend school and women who were required to attend school for one to five years. In contrast, requiring women to attend school for seven, eight, and nine years or above increases women's educational attainment by 0.069, 0.078, and 0.153 years, respectively. More years of required attendance appear more effective in increasing women's educational attainment.[4] The Kleibergen-Paap Wald F-statistic in Column 1 is around 16.

The magnitudes of all these estimates in Column 1 are slightly smaller than those of men (shown in Stephens and Yang, 2014 and Clay et al., 2021), indicating that the laws might have a slightly weaker effect on increasing women's education. This may reflect that teenage women's labor was valued less than men's and that girls were more likely than boys to attend school in the first place. Columns 2 through 5 further restrict the sample to currently married women in 1940, working women who earned positive wages in 1940, sample-line women in the 1940 census (which is less than 5 percent of the female population), and women born outside the South. These different samples allow examination of returns to education across groups. The first-stage results from Columns 2, 3, 4, and 5 are similar to those of Column 1, suggesting that compulsory schooling laws have a positive effect on years of education for married women,

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[4]The results are similar if we include compulsory schooling for one to five years as an instrument in the first stage. See more details in Table A3.

working women, sample-line women, and women born outside the South as well. The results for working women in Column 3 differ slightly, as the coefficients do not increase monotonically with required years of attendance. This may reflect selection, since the sample includes only women earning positive wages, which is less than 25% of the female population in the analysis. In addition, the F-statistic for sample-line women is below 10, suggesting weak instruments, likely due to the much smaller sample size.

5.3   First Stage Results By Socioeconomic Background

The IV estimates capture the local average treatment effect (LATE), which reflects the effect of education among compliers subject to compulsory schooling laws. Compliance with these laws may be correlated with factors such as family socioeconomic background (SES) and urban status. As a result, I additionally examine the heterogeneous effect of compulsory schooling laws on education by household socioeconomic background using the linked Census Tree sample of women. The household socioeconomic background is measured by (1) the father's occupational score, where a higher score reflects higher occupational status, and (2) the father's occupation category, classified as skilled (e.g., managers, carpenters, motormen) or unskilled/other (e.g., guards, farm laborers).

Since the linked sample of women differs from the complete-count sample of women, we might be concerned that the selection into the linked sample could bias the results. To mitigate this concern, I show that the first stage results from the linked sample of women (Column 1 of Table 2) are similar to those of the complete-count sample of women aged 28 to 55 in 1940 (Column 1 of Table 1). This indicates that compulsory schooling laws positively affected educational attainment for women in the linked sample, providing reassurance about the validity of the estimates. Columns 2 to 5 of Table 2 show that compulsory schooling laws affected children from high and low socioeconomic backgrounds differently. For children from higher socioeconomic backgrounds (fathers with above-median-level occupations), compulsory schooling laws requiring six to nine or more years of schooling increased educational attainment. Conversely,

for children from lower socioeconomic backgrounds (fathers with below-median occupations), only laws requiring nine or more years of schooling increased education; other laws had little or no effect. This suggests that children from higher socioeconomic backgrounds were more likely to comply with compulsory schooling laws, possibly because the opportunity cost of an extra year of schooling was relatively low, whereas many children from lower socioeconomic backgrounds may not have complied with laws requiring fewer than nine years of schooling.

The lack of benefit from certain compulsory schooling laws for children from lower socioeconomic backgrounds is initially surprising, since the laws should reduce educational inequality between different class backgrounds (Rauscher, 2016). This pattern may reflect the non-linear returns to education. For children from low SES households facing significant economic constraints, only higher educational requirements that substantially improved labor market prospects could justify the opportunity cost of staying in school. While mandates of six to eight years of schooling did little to improve job prospects, requiring nine or more years effectively initiated high school, opening access to more skilled occupations.

Additional analysis by household type indicates that compulsory schooling laws were less effective in raising educational attainment among children from farm versus non-farm households, but were similarly effective for children in rural and urban settings (see Columns 6–9 of Table 2). Overall, these results suggest that requiring fewer than nine years of schooling had little impact on the educational attainment of children from lower socioeconomic backgrounds.

6   Women's Labor Market Returns

Given women's more elastic labor supply, education is expected to affect labor market participation at the extensive margin. Accordingly, the first outcome of interest is whether a woman was employed in 1940, defined as reporting a gainful occupation in the 1940 Census.[5] Column

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[5]Based on instructions to census enumerators, occupations were defined as words "which most accurately indicate the particular kind of work done by which the person enumerated earns money or a money equivalent." More details can be found here: https://usa.ipums.org/usa/voliii/inst1920.shtml.

1 of Table 3 shows that an additional year of education increased the probability of employment by 2.2 pp. in the OLS specification, while the IV estimate suggests a much larger effect of 7.1 pp.,[6] a substantial increase given that only 25% of women held gainful occupations in 1940. This indicates that education played a crucial role in expanding women's access to paid employment in the labor market. Consistent with these findings, education also raised women's labor supply, as indicated by positive OLS and IV estimates in Columns 2 and 3. In particular, the IV results suggest that an additional year of schooling increased weeks worked per year by 3.4 and hours worked per week by 2.3.[7]

In addition to increasing labor force participation, education also has improved women's wage earnings and shaped the kinds of jobs women entered. Among working women who earned positive wages in 1940, the OLS and IV estimates in Column 4 show that an additional year of education substantially increased women's earnings by 11.2-16.9%. The large returns on earnings partly reflect the selective group of women who were gainfully employed, but it could also indicate that education enabled women to move into better-paid skilled jobs by providing transferable skills (e.g., stenography, typewriting, accounting) valued across clerical, bookkeeping, and secretarial roles. Consistent with this hypothesis, I show that an additional year of education increased women's probability of being a stenographer, a clerical worker, and a bookkeeper by 1.2 to 3.3 pp. in Columns 5 to 7 of Table 3. On the contrary, education had a null effect on becoming a teacher, an occupation that had already been female-dominated since the nineteenth century (Perlmann and Margo, 1999), where additional education did little to further lower barriers to entry. Finally, an additional year of education lowered the probability of women being service workers by 1.8-1.9 pp., indicating that education helped women move out

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[6]The larger IV estimate likely reflects that it is a local average treatment effect, capturing the impact on women who complied with compulsory schooling laws, and these women likely possessed high ability but would not have accomplished certain level of education without such laws.

[7]Note that the results from Table 3 are the average effect among native-born White women aged 28 to 55 in 1940, and the identification strategy cannot separate the effect of education on earnings over the life cycle. We might expect education not only benefit women immediately after graduation but also benefit women when they have the option to rejoin the labor force when they are older and after the children leave the households (Bailey, 2006, Goldin, Kerr, et al., 2022). The effects over the life cycle are more difficult to examine due to the lack of panel data during this period.

of lower-paying occupations that often involve manual labor.

Examining heterogeneous returns by parental socioeconomic background shows that women from low-SES households may have benefited more from education. As shown in Panels A and B of Table 4, an additional year of education increased the probability of gainful employment by 4.3 pp. for children whose father's occupational score was above the median level while it increased the probability of gainful employment by 9.1 pp. for children whose father's occupational score was below the median level. Because children from low-SES households began with lower gainful employment rates (16.2% vs. 24.1% for high-SES), they experienced larger employment gains, both in absolute and relative terms, though the difference by SES is only marginally significant. The lower baseline employment rate among low-SES women likely reflects higher level of unpaid household labor, including farm work and homemaking. The larger estimated return therefore suggests that education facilitated a shift from unpaid family labor into paid market employment, particularly for women from disadvantaged backgrounds.

By contrast, differences in labor supply and wages between SES groups are considerably smaller. While education increased low-SES women's likelihood of entering the labor market, their subsequent gains in labor supply and wage earnings were similar to those of women from high-SES households. Taken together, this pattern implies that education primarily expanded access to paid employment, especially for those with fewer initial market opportunities.

Consistent with the evidence by SES groups, there are also large differences in the effect of education for those from farm and nonfarm households,[8] and those from rural and urban areas. As shown in Panels C and D, and Panels E and F of Table 4, an additional year of education significantly increased gainful employment and labor supply among women from farm households and rural areas, while showing little to no effect for their urban counterparts. This pattern supports the hypothesis that the marginal returns to schooling were higher in rural settings, where access to formal labor market opportunities was more limited. Education in these environments

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[8]Given the shifting economic status of farm households, I examine heterogeneity within this group, particularly among women from farm households by farm ownership status in Section 12.1.

likely provided transferable skills that enabled rural women to enter skilled, paid work outside the household.

Because compulsory schooling laws were adopted later in the South, and the affected birth cohorts in the South were among the youngest in 1940, it is important to check whether Southern-born White women drive the results. I show in Table A6 and Table A7 that the estimates remain unchanged when the sample is restricted to women born outside the South.

7 Women's Marriage Market Returns

7.1 Marriage Formation and Dissolution

Given the positive returns to education in the labor market, one might expect that additional schooling would reduce women's likelihood of marriage, as some might forgo marriage to pursue careers. Consistent with this intuition, the OLS estimate in Column 1 of Table 5 shows a positive association between education and being never married: an additional year of schooling is associated with a 1.36 pp. increase in the probability of remaining never married. In contrast, the IV estimate is negative (–0.41) but small relative to the 12.5% of women aged 28–55 who were never married in 1940. It is also not statistically significant, providing no clear evidence that education affected the probability of never marrying. Although education had limited effects on marriage formation overall, it appears to have influenced the timing of marriage. As shown in Column 3, an additional year of schooling increased women's age at first marriage by 0.38 to 0.75 years, consistent with findings from the post–World War II United States (Lennon, 2023) and mid-twentieth-century United Kingdom (Powdthavee and Adireksombat, 2010).

However, comparing women across socioeconomic backgrounds in Table 6 reveals a striking pattern. Among women from low-SES and farm households, an additional year of education increased the probability of remaining unmarried in 1940, but had little effect on the age at first marriage for those who did marry. In contrast, for women from high-SES and non-farm

households, education primarily delayed the timing of marriage, but did not change the overall probability of ever marrying. Together, these results point to distinct mechanisms through which education shaped marriage decisions by social status: it mainly raised the opportunity cost of marriage for low-SES women, while delaying marriage among high-SES women. For low-SES women in particular, education likely raised the minimum standard of a marriage offer, allowing them to search for longer and improving match quality for those who ultimately married.

Beyond influencing marriage timing and formation, education also appears to have increased women's ability to leave marriages. Column 2 of Table 5 shows that an additional year of education increased the probability of divorce or separation by 0.06 pp. in the OLS estimates and by 1.43 pp. in the IV estimates, despite only 2.5% of women in the 1940 sample being divorced or separated. These findings suggest that more educated women may have been better able to leave marriages, possibly because they could achieve financial independence through improved labor market opportunities. That said, the effects do not differ substantially by socioeconomic background, suggesting that education may have strengthened women's bargaining power within marriage across both high- and low-SES groups.

Among married couples, there is also strong evidence of assortative matching. Column 4 of Table 5 shows that each additional year of a wife's education is associated with 0.7 to 0.9 additional years of her husband's education, consistent with findings from prior research on assortative mating in the historical United States (Goldin, 2004; Bailey, Guldi, et al., 2014).

7.2   Spouse Quality Among Married Couples

More education may have enabled women to secure higher-quality matches in the marriage market. To assess this, I examine the effect of women's education on their husbands' labor market outcomes. Because men and women were subject to compulsory attendance laws during the same period, it is difficult to separate the effect of a wife's education on match quality from her husband's education. To mitigate this concern, I control for the husband's years of education

in the specification. While this does not fully establish causality, it allows me to assess whether a wife's education, partly independent of her husband's, contributes to spouse quality.

The primary outcome of interest is whether the husband was unemployed in 1940, including men working on public emergency projects under the New Deal.[9] Since unemployment remained widespread after the Great Depression, a lower probability of unemployment can be taken as an indicator of higher spouse quality. Column 1 of Table 7 shows that, in the OLS specification, both the wife's and husband's education are associated with a 0.84–0.92 pp. decrease in the husband's probability of unemployment. By contrast, the IV estimate implies a larger effect: an additional year of the wife's education is associated with a 3.9 pp. reduction in her husband's probability of being unemployed, a sizable magnitude given that only 13% of husbands in the sample were unemployed. This suggests that education helped women marry men who were more likely to remain employed after an economic downturn.

These patterns are especially pronounced for women from low-SES backgrounds. Heterogeneity estimates in Table 8 show that the effect of a wife's education on husband unemployment is largest among low-SES women and those raised in farm households. Combined with the evidence on marriage formation in Table 6, this suggests that education influenced low-SES women's marriage decisions, helping them avoid partners at high risk of unemployment.

While education did not meaningfully change husbands' occupational status or labor supply (see Columns 2–4 in Table 7), an additional year of the wife's education was positively correlated with the husband's wage earnings by 7.4%, with the coefficient being significant at the 10% level. This effect may reflect that a more educated wife enhanced her husband's productivity, or that more educated women were more likely to marry highly productive men. Furthermore, among women from low-SES, farm, and rural households, the wife's education was also positively associated with a 9.4–11.6 pp. lower probability that her husband had non-wage income (see Column 6 of Table 8). This indicates that education made low-SES women substantially less

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[9]Public emergency work projects during this period were designed to move workers from unemployment to temporary relief employment. Thus, participation in such projects indicates prior unemployment.

likely to marry self-employed men and more likely to marry men with stable wages.

Finally, the results remain similar when restricting the sample to non-Southern-born women (see Table A8 and Table A9). This helps alleviate concerns that the main findings are driven by Southern-born White women, who were affected by later adoption of compulsory schooling laws and were relatively younger in 1940.

8 Discussion

Relative to men's returns to education on earnings during this period—estimated at 7.7% in Clay et al., 2021, which also exploits variation from compulsory schooling laws, and 4.4% using a twin design in Feigenbaum and Tan, 2020—women experienced larger gains. This pattern, consistent with findings for later cohorts (Dougherty, 2005), likely reflects multiple underlying mechanisms. Since women often start from lower levels of earnings, a given increase in wages mechanically translates into a larger percentage return. At the same time, education facilitates access to higher-paying skilled occupations that were previously less available to women. Finally, women's labor force participation is limited at low education levels, as many primarily engage in unpaid household work. Additional education enables women to enter wage-earning market work, making the pool of working women more selective than that of men.

These mechanisms mirror those emphasized in studies of developing-country contexts (Duflo, 2012; Montenegro and Patrinos, 2014; Jayachandran, 2015), where women also face limited labor force participation and restricted access to skilled employment. In such settings, social norms and institutional barriers often constrain women's ability to work or advance within the labor market, so that even modest increases in education can translate into substantial economic gains. Similarly, the positive returns on women's marriage market outcomes in this setting echo patterns observed in developing countries. Hahn et al., 2018; Wang and Ou, 2024 show that additional years of secondary schooling enable women in Bangladesh and China to marry better-educated spouses with higher occupational status or earnings, while Kaufmann et al., 2013 find

that college education helps women in Chile to find partners of better quality.

The historical United States thus provides a useful parallel: although institutional contexts differ, women in both settings face constrained opportunity sets in the labor and marriage markets at low levels of education. As a result, additional education expanded women's access to (1) wage-earning employment and higher-paying occupations, and (2) higher-quality spouses, as measured by their education, occupation, and income.

9   Conclusion

This paper examines the causal effect of education on women's labor market and marriage outcomes. Exploiting plausibly exogenous variation from state-level compulsory schooling laws in the early twentieth-century United States, I show that additional education had substantial impacts on both economic and social dimensions of women's lives. An additional year of education increased women's probability of employment and their wages, with particularly large gains for women from low-SES and rural households. Education also affected marriage outcomes, delaying marriage, increasing the likelihood of remaining unmarried, and improving the labor market outcomes of husbands, especially for disadvantaged women.

These findings point to several directions for future research. First, examining other historically marginalized groups, such as Black women and immigrants, could shed light on how education reforms shape returns to education across racial and nativity lines. Second, further work could explore long-term intergenerational effects, such as how women's education influences the human capital and economic outcomes of their children. More broadly, understanding these mechanisms can inform current debates about the role of education in promoting gender equality and social mobility, both historically and in contemporary settings.

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10 Figures

Figure 1: States with Different Lengths of Compulsory Schooling

(a) Birth Cohort 1880
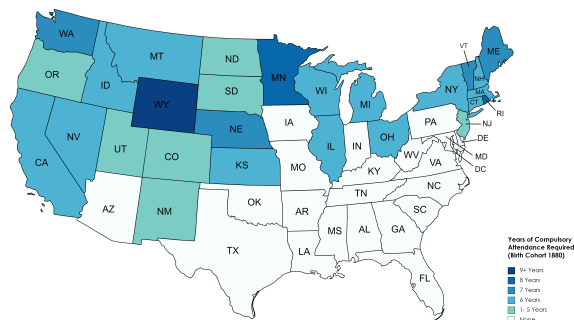
(b) Birth Cohort 1890
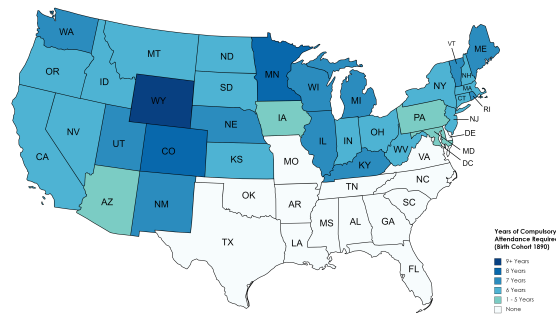
(c) Birth Cohort 1900
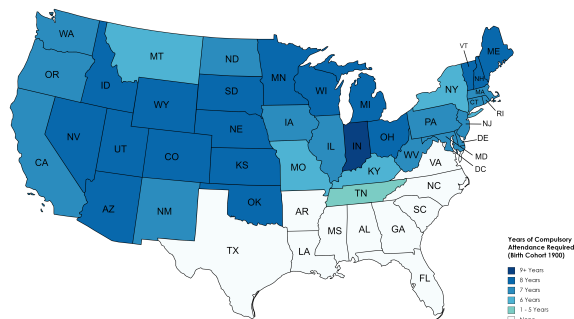
(d) Birth Cohort 1910
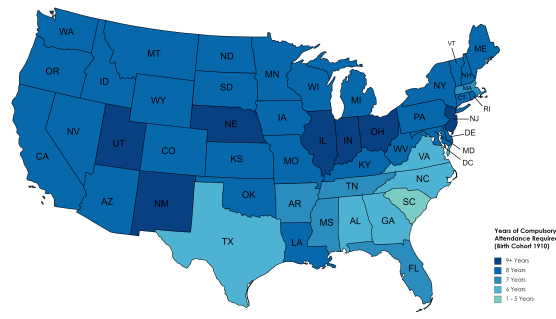
The figure illustrates the lengths of compulsory schooling for birth cohorts 1880, 1890, 1900, and 1910 in different states. Lengths of compulsory schooling are categorized into (1) None; (2) 1-5 years; (3) 6 years; (4) 7 years; (5) 8 years; (6) 9 years and above.

Figure 2: Share of Population Under Various Lengths of Compulsory Schooling (%)

Share of Population Under Various Length of Compulsory Attendance (%)
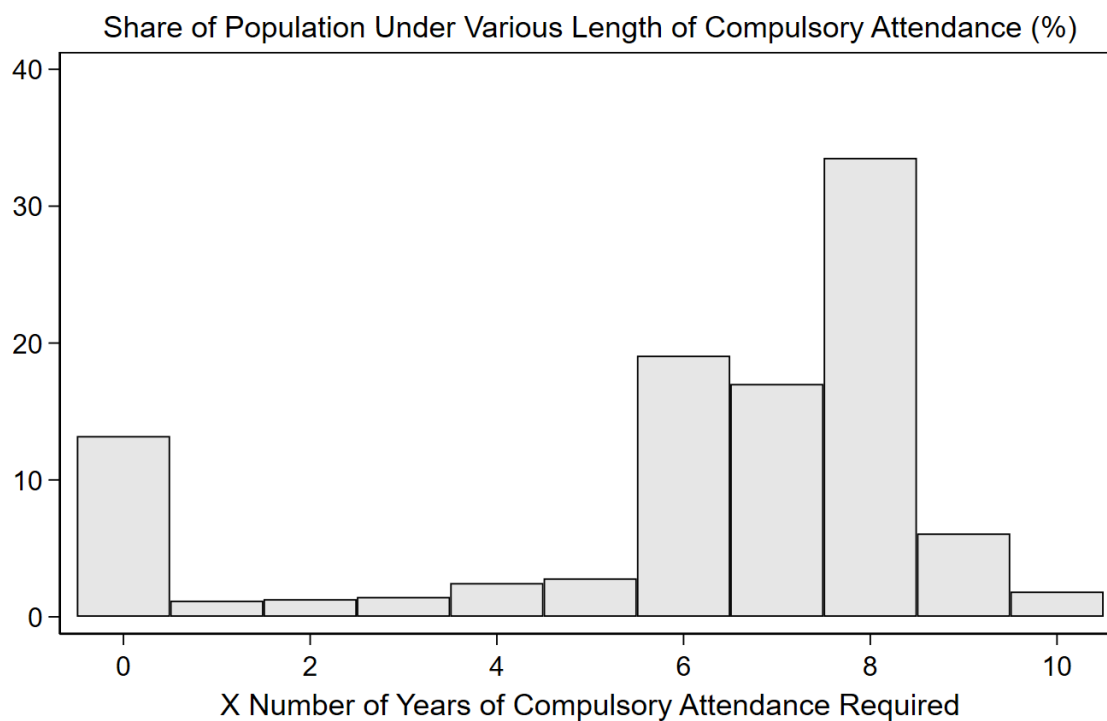
The figure shows the share of the population that was under various lengths of compulsory schooling laws in 1940. The sample is restricted to white and native-born women who were born between 1885 and 1912.

Figure 3: Share of Population that Completed 8th and 12th Grade by Gender (%)
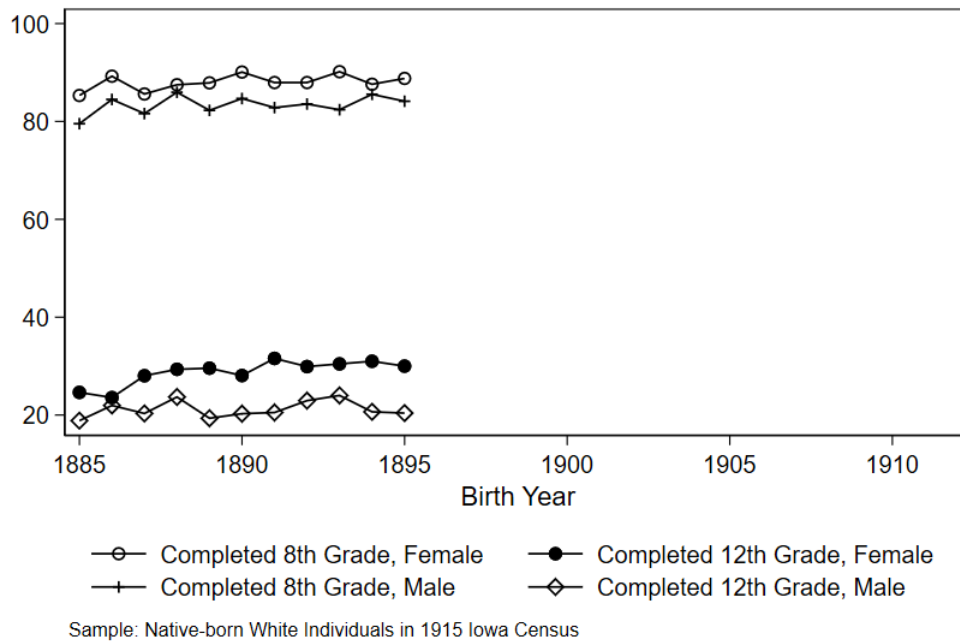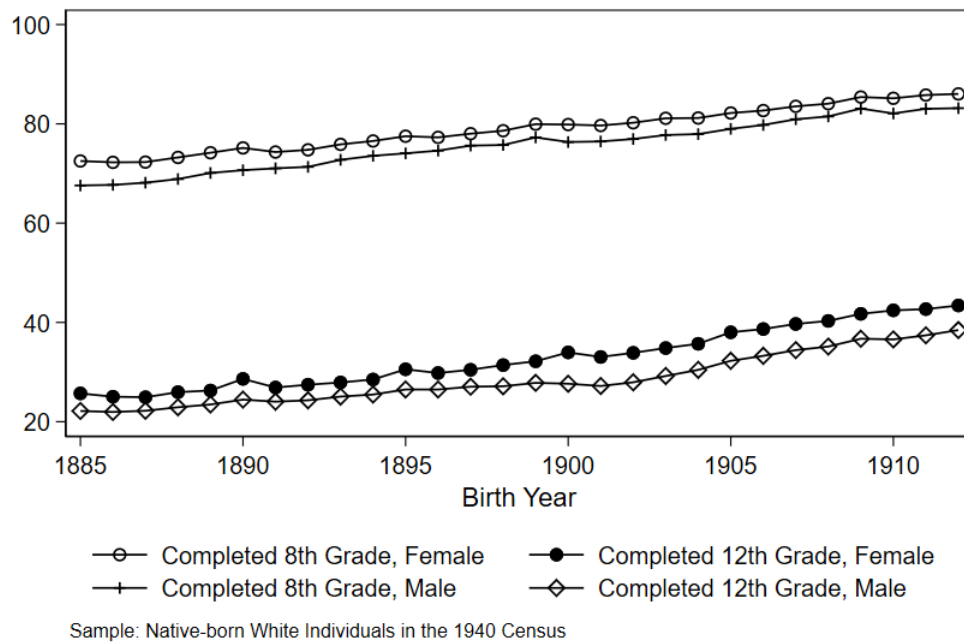
The figure at the top shows the share of the population completed 8th and 12th grade as reported in the 1940 Decennial Census. The sample is restricted to white and native-born people who were born between 1885 and 1912. The figure at the bottom shows the share of the population completed 8th and 12th grade as reported in the 1915 Iowa State Census. The sample is restricted to white and native-born people who were at least 20 years old when the 1915 Iowa State Census was taken.

Figure 4: The Effect of Compulsory Schooling Laws on Years of Education
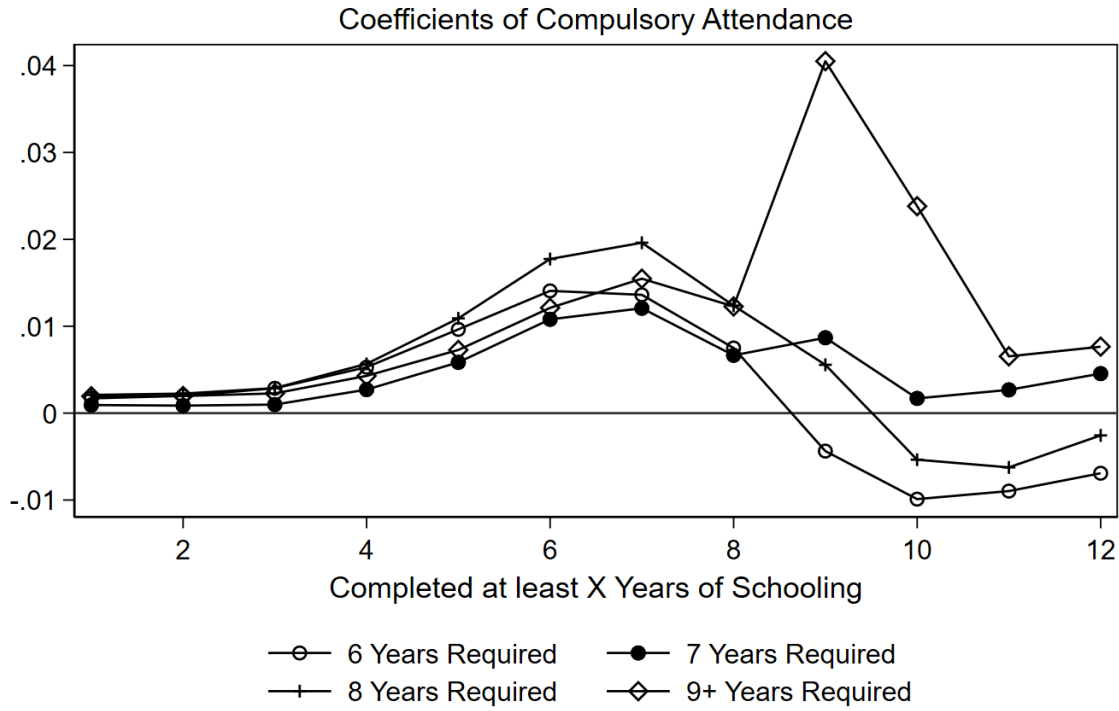
The figure plots the coefficients of dummy variables that indicate different lengths of compulsory schooling laws from separate regressions. Each regression has a different outcome variable that indicates whether one completed at least X years of education, where X ranges from 1 to 12. Detailed results from the regressions are shown in Table A2. The sample is restricted to white and native-born women who were born between 1885 and 1912 (N=18836237).

11 Tables

Table 1: First Stage - The Effect of Compulsory Schooling Laws on Years of Education

Required Years of Schooling	(1) All Women	(2) Married Women	(3) Working Women	(4) Sample-line Women	(5) No South
6 Years	0.018	0.010	0.111***	0.030	0.009
	(0.013)	(0.013)	(0.018)	(0.020)	(0.015)
7 Years	0.069***	0.060***	0.193***	0.081***	0.060***
	(0.015)	(0.016)	(0.022)	(0.023)	(0.017)
8 Years	0.078***	0.067***	0.206***	0.096***	0.063***
	(0.017)	(0.018)	(0.023)	(0.025)	(0.018)
9 Years +	0.153***	0.154***	0.184***	0.168***	0.138***
	(0.023)	(0.024)	(0.028)	(0.032)	(0.023)
N	18836237	14902197	4151245	936920	14784416
F Stats	15.983	15.541	24.121	8.392	15.283

The outcome variable is years of education completed reported in the 1940 census. The independent variables are dummy variables indicating years of required compulsory schooling. The regression includes birth state fixed effects and birth year by region fixed effects. The sample from Column 1 is White, native-born women who were born between 1885 and 1912. Columns 2, 3, 4, and 5 further restrict the sample to currently married women in 1940, working women who earned positive wages in 1940, sample-line women in the 1940 census, and women born outside of the South. Kleibergen-Paap Wald F-statistic is reported.

Table 2: First Stage by Socioeconomic Background - The Effect of Compulsory Schooling Laws on Years of Education

	(1) All	(2) > Median OccScore	(3) <= Median OccScore	(4) Skilled Occ.	(5) Other Occ.
Required Years of Schooling					
6 Years	0.030*	0.013	0.007	-0.013	0.010
	(0.014)	(0.018)	(0.016)	(0.017)	(0.016)
7 Years	0.074***	0.086***	0.016	0.079***	0.007
	(0.015)	(0.021)	(0.018)	(0.020)	(0.018)
8 Years	0.095***	0.103***	0.032	0.081***	0.024
	(0.017)	(0.022)	(0.021)	(0.021)	(0.021)
9+ Years	0.205***	0.211***	0.225***	0.213***	0.148***
	(0.024)	(0.030)	(0.033)	(0.029)	(0.031)
N	4761628	2148175	2613453	1711690	2785253
F Stats	19.565	16.328	16.616	21.704	7.577

		(6) Non-Farm	(7) Farm	(8) Rural	(9) Urban
6 Years		0.033	-0.020	0.026	-0.032
		(0.017)	(0.017)	(0.015)	(0.020)
7 Years		0.100***	-0.013	0.036*	0.066**
		(0.020)	(0.020)	(0.017)	(0.023)
8 Years		0.125***	-0.008	0.059**	0.068**
		(0.021)	(0.024)	(0.021)	(0.025)
9+ Years		0.228***	0.191***	0.231***	0.130***
		(0.028)	(0.035)	(0.032)	(0.032)
N		2495413	2266215	3400574	1361054
F Stats		19.558	18.074	15.526	11.571

The outcome variable is years of education completed reported in the 1940 census. The independent variables are dummy variables indicating years of required compulsory schooling. The regression includes birth state fixed effects and birth year by region fixed effects. The sample from Column 1 is the linked sample of White native-born women who were born between 1885 and 1912. Columns 2 and 3 restrict the sample of women based on their father's occupational scores (above and below median), Columns 4 and 5 restrict the sample of women based on the category of their father's occupations (skilled and others), and Columns 6 to 9 restrict the sample of women based on farm and urban status of their fathers.

Table 3: The Returns to Education on Labor Market Outcomes

	(1) Gainful Occupation		(2) Weeks Worked		(3) Hours Worked		(4) ln Wage	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	2.190***	7.129***	0.907***	3.399***	0.752***	2.289***	0.112***	0.169***
	(0.019)	(1.862)	(0.009)	(0.829)	(0.006)	(0.614)	(0.001)	(0.023)
$\overline{Y}$	25.871	25.871	11.114	11.114	9.219	9.219	6.391	6.391

	(5) Steno-graphers		(6) Clerical Workers		(7) Book-keepers		(8) Teachers	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	0.515***	3.342***	0.238***	1.777***	0.213***	1.214***	1.392***	0.056
	(0.011)	(0.724)	(0.003)	(0.438)	(0.002)	(0.225)	(0.015)	(0.316)
$\overline{Y}$	2.482	2.482	1.748	1.748	1.284	1.284	2.481	2.481

	(9) Service Private-HH		(10) Service Non-HH	
	OLS	IV	OLS	IV
Educ	-0.282***	-1.899***	-0.082***	-1.847***
	(0.003)	(0.391)	(0.005)	(0.360)
$\overline{Y}$	2.012	2.012	2.722	2.722

The outcome variables are whether one had a gainful occupation in 1940 (*100), weeks worked in 1939, weekly hours worked in 1940, the natural log of wages reported in 1940, and whether the woman was a stenographer, a clerical worker, a bookkeeper, a teacher, a service worker in private households, and a service worker in non-households (*100). The independent variable is the number of years of education completed. Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample is White, native-born women who were born between 1885 and 1912 (N=18836237). Columns reporting log wages further restrict the sample to working women (N=4151245).

Table 4: The Returns to Education on Labor Market Outcomes by Socioeconomic Background

	(1) Gainful Occ.	(2) Weeks Worked	(3) Hours Worked	(4) OccScore	(5) ln(Wage)	(6) Steno- grapher	(7) Service HH
			Panel A: Father's OCCSCORE > Median				
Educ	4.317*	2.211*	1.368	1.259**	0.164**	2.926***	-0.431
	(1.936)	(0.907)	(0.731)	(0.465)	(0.052)	(0.837)	(0.251)
$\overline{Y}$	24.079	10.155	8.210	5.600	6.518	3.159	0.897
			Panel B: Father's OCCSCORE <= Median				
Educ	9.057***	3.865***	2.918***	2.332***	0.185***	1.798***	-0.676*
	(1.747)	(0.751)	(0.551)	(0.437)	(0.047)	(0.493)	(0.290)
$\overline{Y}$	16.167	7.718	6.172	3.462	6.145	0.965	1.132
			Panel C: Children from Farm Households				
Educ	8.835***	3.857***	2.858***	2.207***	0.168*	1.163***	-0.511
	(1.497)	(0.641)	(0.518)	(0.375)	(0.065)	(0.293)	(0.290)
$\overline{Y}$	15.095	7.449	5.954	3.161	6.043	0.638	1.132
			Panel D: Children from Non-farm Households				
Educ	3.290	1.620	1.236	1.043*	0.201***	2.418**	-0.359
	(1.829)	(0.840)	(0.682)	(0.438)	(0.046)	(0.753)	(0.242)
$\overline{Y}$	23.391	9.912	8.004	5.420	6.501	2.983	0.934
			Panel E: Children from Rural Areas				
Educ	8.412***	3.692***	2.777***	2.217***	0.206***	1.493**	-0.906**
	(1.511)	(0.667)	(0.504)	(0.382)	(0.048)	(0.471)	(0.303)
$\overline{Y}$	16.807	7.828	6.292	3.623	6.134	0.929	1.173
			Panel F: Children from Urban Areas				
Educ	0.038	0.304	-0.326	0.235	0.158**	3.394***	-0.200
	(1.832)	(0.844)	(0.699)	(0.441)	(0.056)	(0.940)	(0.289)
$\overline{Y}$	25.494	10.704	8.633	5.999	6.605	3.829	0.777

The outcome variables are whether one had a gainful occupation in 1940 (*100), weeks worked in 1939, weekly hours worked in 1940, the natural log of wages reported in 1940, and whether the woman was a stenographer, a clerical worker, a bookkeeper, or a service worker for private households (*100). Other occupation-related outcome variables are omitted due to space limitations. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of women aged 28 to 55 in 1940 whose fathers had OCCSCORE above and below the median level (N=2148175 and N=2613453). The sample in Panel C and D consists of women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=2266215 and N=2495413). The sample in Panel E and F consists of women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=3400574 and N=1361054). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table 5: The Returns to Education on Marriage Market Outcomes

	(1) Never Married		(2) Divorced/ Separated		(3) Age at First Marriage		(4) H's Educ	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	1.361***	-0.410	0.063***	1.430***	0.382***	0.746**	0.717***	0.891***
	(0.017)	(0.851)	(0.003)	(0.317)	(0.003)	(0.272)	(0.001)	(0.071)
$\overline{Y}$	12.455	12.455	2.492	2.492	21.616	21.616	9.004	9.004

The outcome variables are whether one had never been married (*100), whether one had been divorced or separated (*100), age at first marriage, and the husband's years of education. The independent variable is the number of years of education completed. Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample is White, native-born women who were born between 1885 and 1912 (N=18836237). Column 3 further restricts the sample to sample-line women (N=710094) since information for age at first marriage is only available for this group. Column 4 further restricts the sample to White, native-born women who were married and with their husband present in the household in 1940 (N=13559925).

Table 6: The Returns to Education on Marriage Outcomes by Socioeconomic Background

	(1) Never Married	(2) Divorced/ Separated	(3) Age at First Marriage	(4) Husband's Education
Panel A: Father's OCCSCORE > Median				
Educ	0.276	0.473	1.370**	0.763***
	(1.687)	(0.318)	(0.489)	(0.089)
$\overline{Y}$	12.828	1.726	21.665	9.742
Panel B: Father's OCCSCORE <= Median				
Educ	2.496*	0.876***	0.329	0.820***
	(1.073)	(0.243)	(0.359)	(0.070)
$\overline{Y}$	7.220	1.154	21.114	8.391
Panel C: Children from Farm Households				
Educ	2.501**	0.519*	0.136	0.818***
	(0.893)	(0.212)	(0.413)	(0.066)
$\overline{Y}$	6.544	1.039	21.080	8.188
Panel D: Children from Non-farm Households				
Educ	-0.937	0.802**	1.546*	0.677***
	(1.579)	(0.294)	(0.615)	(0.078)
$\overline{Y}$	12.298	1.695	21.620	9.636
Panel E: Children from Rural Areas				
Educ	1.698*	0.664**	0.195	0.816***
	(0.826)	(0.226)	(0.428)	(0.065)
$\overline{Y}$	7.110	1.202	21.103	8.467
Panel F: Children from Urban Areas				
Educ	-1.436	0.488	2.045*	0.535***
	(1.787)	(0.399)	(0.865)	(0.116)
$\overline{Y}$	14.565	1.826	22.037	10.062

The outcome variables are whether one had never been married (*100), whether one had been divorced or separated (*100), age at first marriage, and the husband's years of education. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of women aged 28 to 55 in 1940 whose fathers had OCC-SCORE above and below the median level (N=2148175 and N=2613453). The sample in Panel C and D consists of women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=2266215 and N=2495413). The sample in Panel E and F consists of women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=3400574 and N=1361054). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table 7: The Returns to Education on Spouse Quality - Married Women Only

	(1) H's Unemployed		(2) H's OccScore		(3) H's Weeks Worked	
	OLS	IV	OLS	IV	OLS	IV
Educ	-0.919***	-3.884**	0.411***	0.348	0.380***	0.825
	(0.009)	(1.427)	(0.004)	(0.531)	(0.005)	(0.631)
H's Educ	-0.838***	0.788	1.080***	1.115***	0.480***	0.237
	(0.008)	(0.783)	(0.005)	(0.291)	(0.005)	(0.347)
$\overline{Y}$	13.0	13.0	25.8	25.8	43.0	43.0
	(4) H's Hours Worked		(5) H's ln(Wage)		(6) H's Nonwage Earnings > $50	
	OLS	IV	OLS	IV	OLS	IV
Educ	0.568***	0.723	0.053***	0.074	1.261***	-2.526
	(0.006)	(0.849)	(0.001)	(0.042)	(0.020)	(3.100)
H's Educ	0.365***	0.280	0.073***	0.062**	0.077***	2.154
	(0.007)	(0.467)	(0.000)	(0.023)	(0.017)	(1.700)
$\overline{Y}$	38.0	38.0	7.0	7.0	46.8	46.8

The outcome variables are whether the husband was unemployed or employed on public emergency work projects in 1940 (*100), the husband's occupational score, the husband's weeks worked in 1939, the husband's hours worked per week, the husband's natural log of wage earnings, and whether the husband owned the home (*100). Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The independent variables are the number of years of education completed by the wife (instrumented in the IV regressions) and the number of years completed by the husband. The sample is White, native-born women who were married and with her husband present in the household in 1940 (N=13559925). Column 5 further restricts the sample to households where the husband was earning positive wages in 1940 (N=9347049). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table 8: The Returns to Education on Spouse Quality by Socioeconomic Background

	(1) H's Unem -ployed	(2) H's OccScore	(3) H's Weeks Worked	(4) H's Hours Worked	(5) H's ln(Wage)	(6) H's Nonwage > $50
	Panel A: Father's OCCSCORE > Median					
Educ	-1.937	0.492	0.955	0.732	0.080	4.040
	(1.620)	(0.562)	(0.817)	(0.948)	(0.045)	(2.421)
$\overline{Y}$	11.716	28.683	43.895	38.008	7.232	32.513
	Panel B: Father's OCCSCORE <= Median					
Educ	-5.777***	0.531	2.238***	2.043*	0.075	-9.635***
	(1.390)	(0.463)	(0.631)	(0.996)	(0.040)	(2.792)
$\overline{Y}$	12.797	22.842	43.047	39.049	6.810	48.074
	Panel C: Children from Farm Households					
Educ	-5.565***	1.292*	1.675**	1.418	0.072	-11.598***
	(1.371)	(0.512)	(0.597)	(1.107)	(0.041)	(3.015)
$\overline{Y}$	12.601	21.894	42.995	39.333	6.717	50.375
	Panel D: Children from Non-farm Households					
Educ	-1.747	0.220	1.129	0.907	0.076	2.438
	(1.476)	(0.511)	(0.711)	(0.833)	(0.041)	(2.208)
$\overline{Y}$	12.004	28.267	43.786	38.016	7.208	33.749
	Panel E: Children from Rural Areas					
Educ	-3.792**	1.092*	1.955**	1.875	0.100*	-9.352**
	(1.322)	(0.551)	(0.640)	(1.031)	(0.042)	(3.034)
$\overline{Y}$	13.212	23.340	42.817	38.595	6.827	45.615
	Panel F: Children from Urban Areas					
Educ	-1.553	0.285	0.470	1.145	0.045	0.931
	(1.655)	(0.549)	(0.819)	(0.974)	(0.040)	(2.566)
$\overline{Y}$	10.758	29.821	44.506	38.342	7.336	31.149

The outcome variables are whether the husband was unemployed or employed on public emergency work projects in 1940 (*100), the husband's occupational score/weeks worked in 1939/hours worked per week/natural log of wage earnings, and whether the husband earned more than $50 in nonwage earnings in 1940. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The independent variables are the number of years of education completed by the wife (instrumented in the IV regressions) and the number of years completed by the husband. The sample in Panel A and B consists of married women aged 28 to 55 in 1940 whose fathers had OCCSCORE above and below the median level (N=1675655 and N=2222345). The sample in Panel C and D consists of married women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=1937002 and N=1960998). The sample in Panel E and F consists of married women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=2874004 and N=1023996). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

12   Appendix

Figure A1: Provisions Regarding Compulsory Schooling Laws

The figure shows different provisions regarding compulsory schooling laws in Deffenbaugh and Keesecker, 1935.

Figure A2: Number of Provisions Regarding Compulsory Schooling Laws in Different Regions
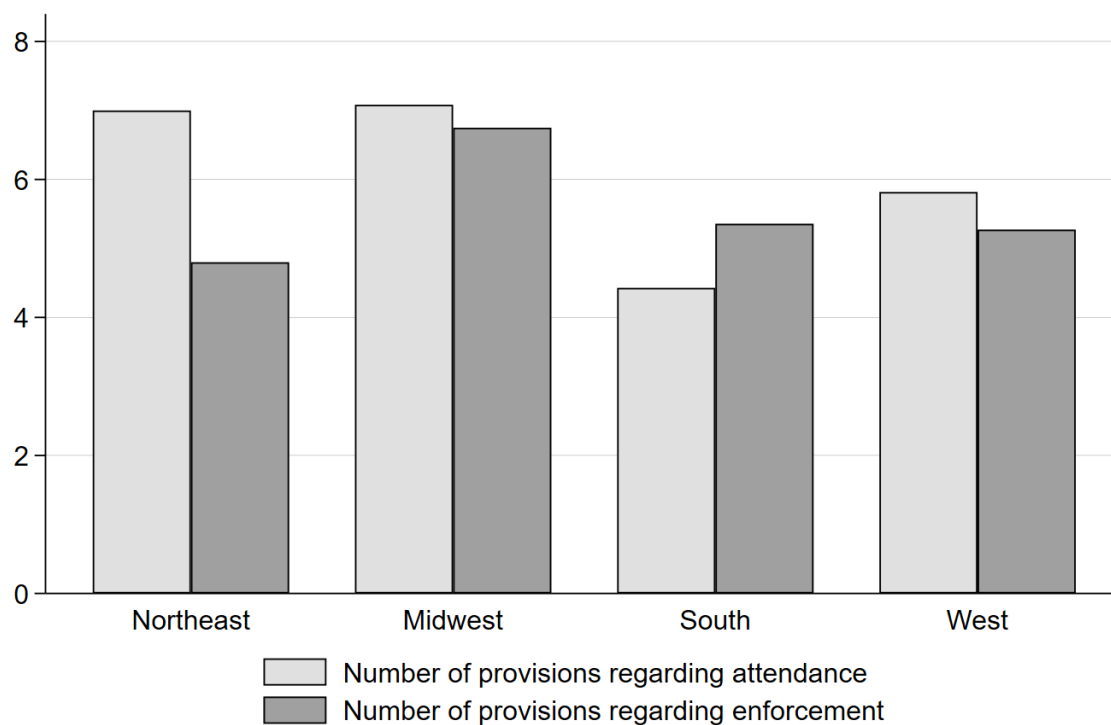
The figure shows the number of provisions regarding compulsory schooling laws in different regions with data collected by Deffenbaugh and Keesecker, 1935.

Table A1: Factors Related to the Passage of Compulsory Attendance, Child Labor and School Continuation Laws

	(1) Compulsory Attendance	(2) Child Labor	(3) School Continuation
Early Suffrage	0.024 (0.028)	0.042 (0.041)	0.033 (0.036)
GFWC Chapter	-0.021 (0.026)	0.034 (0.021)	0.020 (0.016)
# Farms PC	-2.389*** (0.714)	-0.615 (0.503)	0.016 (0.377)
Farm Value PC	0.002 (0.005)	-0.034*** (0.008)	-0.022*** (0.006)
% Manufacturing	0.117 (0.782)	1.177 (0.904)	2.039** (0.747)
Manufacturing Wages	-0.145 (0.103)	0.238 (0.124)	0.233* (0.106)
% Foreign Born	0.740* (0.320)	1.330*** (0.227)	0.866*** (0.182)
% Women	-1.503 (0.855)	-0.462 (0.615)	0.622 (0.544)
% White	-2.711*** (0.507)	0.051 (0.289)	-0.765** (0.282)
% Literate	-0.175 (0.281)	-0.675*** (0.199)	-0.300* (0.118)
State FE	Yes	Yes	Yes
Region*Year FE	Yes	Yes	Yes
N	1968	1968	1968

The table shows separate regression results where the dependent variables are the adoption of compulsory attendance laws, child labor laws, and school continuation laws. The independent variable for each set of regressions is the following: early suffrage laws, GFWC state chapter, # farms per capita and farm value per capita (in $1,000), % manufacturing and manufacturing wages, and the share of foreign-born/women/whites/literate in the population. All specifications include state and region by year fixed effects, and standard errors are clustered at the state by year level.

Table A2: The Effect of Compulsory Schooling on Years of Education

Years of Schooling Completed==	(1) One	(2) Two	(3) Three	(4) Four	(5) Five	(6) Six
6 Years	0.0017***	0.0020***	0.0029***	0.0053***	0.0096***	0.0141***
	(0.0004)	(0.0005)	(0.0007)	(0.0010)	(0.0015)	(0.0019)
7 Years	0.0009	0.0009	0.0010	0.0027*	0.0058***	0.0108***
	(0.0006)	(0.0007)	(0.0009)	(0.0012)	(0.0017)	(0.0022)
8 Years	0.0021**	0.0023**	0.0029**	0.0057***	0.0109***	0.0177***
	(0.0007)	(0.0008)	(0.0010)	(0.0013)	(0.0018)	(0.0023)
9 Years +	0.0019*	0.0020	0.0023	0.0043*	0.0073**	0.0121***
	(0.0009)	(0.0011)	(0.0014)	(0.0017)	(0.0022)	(0.0027)

Years of Schooling Completed==	(7) Seven	(8) Eight	(9) Nine	(10) Ten	(11) Eleven	(12) Twelve
6 Years	0.0136***	0.0075***	-0.0044	-0.0099***	-0.0090***	-0.0069**
	(0.0021)	(0.0021)	(0.0026)	(0.0023)	(0.0023)	(0.0023)
7 Years	0.0121***	0.0067**	0.0087**	0.0017	0.0027	0.0046
	(0.0025)	(0.0025)	(0.0030)	(0.0028)	(0.0030)	(0.0029)
8 Years	0.0196***	0.0124***	0.0056	-0.0054	-0.0062*	-0.0026
	(0.0027)	(0.0029)	(0.0035)	(0.0029)	(0.0029)	(0.0029)
9 Years +	0.0155***	0.0123***	0.0405***	0.0238***	0.0065	0.0076
	(0.0032)	(0.0034)	(0.0050)	(0.0043)	(0.0042)	(0.0040)

The table shows results from 12 separate regressions, and each regression has a different outcome variable that indicates whether one completed at least X years of schooling, where X ranges from 1 to 12. The independent variables are dummy variables that indicate different lengths of compulsory schooling laws. The regression includes birth state fixed effects and birth year by region fixed effects. The sample includes white and native-born women who were born between 1885 and 1912 (N=18836237).

Table A3: First Stage Results with An Alternative Set of Instruments

	(1) All Women	(2) Married Women	(3) Working Women	(4) Sample-line Women	(5) No South
Required Years of Schooling					
1 - 5 Years	0.028	0.020	0.038	0.038	0.019
	(0.018)	(0.018)	(0.024)	(0.027)	(0.031)
6 Years	0.043*	0.028	0.144***	0.063*	0.024
	(0.021)	(0.022)	(0.029)	(0.031)	(0.030)
7 Years	0.094***	0.079**	0.227***	0.115***	0.076*
	(0.023)	(0.024)	(0.032)	(0.033)	(0.032)
8 Years	0.104***	0.086**	0.241***	0.130***	0.079*
	(0.026)	(0.026)	(0.034)	(0.036)	(0.034)
9 Years +	0.180***	0.173***	0.220***	0.204***	0.155***
	(0.030)	(0.031)	(0.038)	(0.042)	(0.038)
N	18836237	14902197	4151245	936920	14784416
F Stats	12.858	12.435	19.443	6.993	12.160

The outcome variable is years of education completed reported in the 1940 census. The independent variables are dummy variables indicating years of required compulsory schooling. The regression includes birth state fixed effects and birth year by region fixed effects. The sample from Column 1 is White, non-South, native-born women who were born between 1885 and 1912. Column 2, 3, 4 and 5 further restricts the sample to currently married women in 1940, working women who earned positive wages in 1940, sample-line women in the 1940 census, and women born outside of the South. The Kleibergen-Paap Wald F-statistic is reported.

Table A4: 1940 Characteristics of Women in the Linked Census Tree Sample and Complete-Count Sample

	(1) Tree	(2) All Women
Age	40.7	39.8
	(7.6)	(7.9)
Ever Married	89.7	87.5
	(30.5)	(33.0)
Farm	22.9	19.7
	(42.0)	(39.8)
Urban	54.7	58.8
	(49.8)	(49.2)
Northeast	32.1	29.6
	(46.7)	(45.7)
Midwest	40.5	41.9
	(49.1)	(49.3)
South	21.5	21.6
	(41.1)	(41.2)
Education	9.6	9.5
	(3.1)	(3.2)
N	4847541	19244286

The outcome variables are age in 1940, whether one had been married in 1940 (*100), farm/urban status in 1940 (*100), whether one lived in the Northeast/Midwest/South region in 1940 (*100) and years of education. The sample from Column 1 is the linked Census Tree sample of White and native-born women born between 1885 and 1912. The sample from Column 2 is the complete-count sample of White and native-born women born between 1885 and 1912.

Table A5: Educational Attainment by Socioeconomic Background

	(1) All Women	(2) > Median OccScore	(3) <= Median OccScore	(4) Rural	(5) Urban
Years of Schooling	9.6	10.1	9.0	9.1	10.2
	(3.1)	(3.0)	(3.1)	(3.1)	(2.9)
Completed 8th Grade (%)	79.2	84.1	73.0	73.9	86.1
	(40.6)	(36.6)	(44.4)	(43.9)	(34.6)
Some HS Education (%)	39.5	44.5	33.1	34.3	46.2
	(48.9)	(49.7)	(47.0)	(47.5)	(49.9)
Completed 12th Grade (%)	32.6	38.3	25.4	26.7	40.3
	(46.9)	(48.6)	(43.5)	(44.3)	(49.0)
N	4847541	2182685	2664856	3465308	1382233

The table shows descriptive statistics on educational attainment by socioeconomic background. The average level of schooling, the share who completed 8th grade, the share who had some high school education, and the share who completed 12th grade are reported. The sample from Column 1 is the linked sample of White native-born women who were born between 1885 and 1912. Columns 2 and 3 select the sample of women based on their fathers' occupational scores (above and below the median), and Columns 4 and 5 select the sample of women based on the rural and urban status of their fathers.

Table A6: The Returns to Education on Labor Market Outcomes (No South)

	(1) Gainful Occupation		(2) Weeks Worked		(3) Hours Worked		(4) ln Wage	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	2.333***	11.644***	0.984***	5.135***	0.772***	3.612***	0.113***	0.171***
	(0.020)	(2.282)	(0.009)	(1.011)	(0.007)	(0.743)	(0.001)	(0.026)
$\overline{Y}$	26.484	26.484	11.307	11.307	9.360	9.360	6.439	6.439

	(5) Steno- graphers		(6) Clerical Workers		(7) Book- keepers		(8) Teachers	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	0.557***	4.462***	0.245***	2.317***	0.219***	1.633***	1.531***	-0.234
	(0.014)	(0.880)	(0.004)	(0.525)	(0.003)	(0.270)	(0.016)	(0.352)
$\overline{Y}$	2.714	2.714	1.927	1.927	1.383	1.383	2.550	2.550

	(9) Service Private-HH		(10) Service Non-HH	
	OLS	IV	OLS	IV
Educ	-0.290***	-2.048***	-0.147***	-2.060***
	(0.002)	(0.437)	(0.004)	(0.403)
$\overline{Y}$	2.113	2.113	2.862	2.862

The outcome variables are whether one had a gainful occupation in 1940 (*100), weeks worked in 1939, weekly hours worked in 1940, the natural log of wages reported in 1940, and whether the woman was a stenographer, a clerical worker, a bookkeeper, a teacher, a service worker in private households, and a service worker in non-households (*100). The independent variable is the number of years of education completed. Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample is White, non-South, native-born women who were born between 1885 and 1912 (N=14784416). Column 4 further restricts the sample to working women who earned positive wages (N=3371943).

Table A7: The Returns to Education on Labor Market Outcomes by SES (No South)

	(1) Gainful Occ.	(2) Weeks Worked	(3) Hours Worked	(4) OccScore	(5) ln(Wage)	(6) Steno-grapher	(7) Service HH
	Panel A: Father's OCCSCORE > Median						
Educ	6.338**	3.062**	1.971*	1.763***	0.161**	3.383***	-0.508
	(2.217)	(1.044)	(0.833)	(0.532)	(0.052)	(0.985)	(0.280)
$\overline{Y}$	24.051	10.125	8.135	5.583	6.537	3.209	0.956
	Panel B: Father's OCCSCORE <= Median						
Educ	9.508***	3.979***	3.055***	2.406***	0.252***	1.994***	-0.655*
	(1.723)	(0.734)	(0.542)	(0.429)	(0.061)	(0.489)	(0.286)
$\overline{Y}$	16.473	7.848	6.289	3.558	6.203	1.129	1.346
	Panel C: Children from Farm Households						
Educ	8.416***	3.593***	2.730***	2.066***	0.314**	1.266***	-0.433
	(1.381)	(0.586)	(0.482)	(0.344)	(0.108)	(0.277)	(0.277)
$\overline{Y}$	15.043	7.478	6.009	3.161	6.077	0.719	1.394
	Panel D: Children from Non-farm Households						
Educ	4.637*	2.162*	1.624*	1.390**	0.191***	2.788**	-0.444
	(2.062)	(0.953)	(0.766)	(0.495)	(0.045)	(0.873)	(0.269)
$\overline{Y}$	23.495	9.935	7.973	5.440	6.524	3.063	0.994
	Panel E: Children from Rural Areas						
Educ	9.362***	4.022***	3.003***	2.416***	0.282***	1.724***	-0.955**
	(1.566)	(0.688)	(0.517)	(0.395)	(0.062)	(0.491)	(0.312)
$\overline{Y}$	16.898	7.850	6.312	3.651	6.167	1.021	1.394
	Panel F: Children from Urban Areas						
Educ	0.574	0.500	-0.266	0.381	0.150**	3.527***	-0.171
	(2.013)	(0.930)	(0.760)	(0.482)	(0.058)	(1.068)	(0.321)
$\overline{Y}$	25.416	10.661	8.547	5.968	6.615	3.809	0.816

The outcome variables are whether one had a gainful occupation in 1940 (*100), weeks worked in 1939, weekly hours worked in 1940, the natural log of wages reported in 1940, and whether the woman was a stenographer, a clerical worker, a bookkeeper, or a service worker for private households (*100). Other occupation-related outcome variables are omitted due to space limitations. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of non-southern women aged 28 to 55 in 1940 whose fathers had OCCSCORE above and below the median level (N=1832706 and N=1817255). The sample in Panel C and D consists of non-southern women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=1537634 and N=2112327). The sample in Panel E and F consists of non-southern women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=2430970 and N=1218991). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table A8: The Returns to Education on Marriage Market Outcomes (No South)

	(1) Never Married		(2) Divorced/ Separated		(3) Age at First Marriage		(4) H's Educ	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Educ	1.544***	0.333	0.045***	1.590***	0.400***	0.817**	0.701***	0.928***
	(0.014)	(0.927)	(0.003)	(0.361)	(0.003)	(0.293)	(0.002)	(0.076)
$\overline{Y}$	13.356	13.356	2.556	2.556	21.912	21.912	9.281	9.281

The outcome variables are whether one had never been married (*100), whether one had been divorced or separated (*100), age at first marriage, and the husband's years of education. The independent variable is the number of years of education completed. Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample is White, native-born women who were born between 1885 and 1912 (N=14784416). Column 3 further restricts the sample to sample-line women (N=552530) since information for age at first marriage is only available for this group.

Table A9: The Returns to Education on Marriage Outcomes by SES (No South)

	(1) Never Married	(2) Divorced/ Separated	(3) Age at First Marriage	(4) Husband's Education
Panel A: Father's OCCSCORE > Median				
Educ	0.680	0.654	1.510**	0.786***
	(1.901)	(0.353)	(0.548)	(0.097)
$\overline{Y}$	13.255	1.696	21.799	9.785
Panel B: Father's OCCSCORE <= Median				
Educ	2.673*	0.841***	0.098	0.789***
	(1.051)	(0.239)	(0.380)	(0.068)
$\overline{Y}$	7.700	1.247	21.431	8.790
Panel C: Children from Farm Households				
Educ	2.384**	0.389	0.008	0.770***
	(0.833)	(0.201)	(0.430)	(0.061)
$\overline{Y}$	6.761	1.120	21.405	8.562
Panel D: Children from Non-farm Households				
Educ	-0.910	1.016**	1.695*	0.720***
	(1.772)	(0.326)	(0.689)	(0.084)
$\overline{Y}$	12.806	1.680	21.769	9.731
Panel E: Children from Rural Areas				
Educ	1.818*	0.655**	0.087	0.813***
	(0.839)	(0.229)	(0.473)	(0.065)
$\overline{Y}$	7.398	1.275	21.369	8.797
Panel F: Children from Urban Areas				
Educ	-1.665	0.810	2.113*	0.519***
	(2.002)	(0.444)	(0.916)	(0.124)
$\overline{Y}$	14.871	1.774	22.130	10.044

The outcome variables are whether one had never been married (*100), whether one had been divorced or separated (*100), age at first marriage, and the husband's years of education. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of non-southern women aged 28 to 55 in 1940 whose fathers had OCCSCORE above and below the median level (N=1832706 and N=1817255). The sample in Panel C and D consists of non-southern women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=1537634 and N=2112327). The sample in Panel E and F consists of non-southern women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=2430970 and N=1218991). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table A10: The Returns to Education on Spouse Quality - Married Women Only (No South)

	(1) H's Unemployed		(2) H's OccScore		(3) H's Weeks Worked	
	OLS	IV	OLS	IV	OLS	IV
Educ	-0.973***	-4.677**	0.381***	0.731	0.382***	1.828**
	(0.011)	(1.523)	(0.003)	(0.582)	(0.006)	(0.697)
H's Educ	-0.919***	0.990	1.106***	0.926**	0.512***	-0.233
	(0.008)	(0.785)	(0.006)	(0.299)	(0.006)	(0.360)
$\overline{Y}$	13.0	13.0	26.5	26.5	43.1	43.1
	(4) H's Hours Worked		(5) H's ln(Wage)		(6) H's Nonwage Earnings > $50	
	OLS	IV	OLS	IV	OLS	IV
Educ	0.565***	1.239	0.046***	0.064	1.045***	-7.864*
	(0.008)	(0.903)	(0.000)	(0.042)	(0.023)	(3.078)
H's Educ	0.370***	0.022	0.070***	0.061**	-0.086***	4.503**
	(0.009)	(0.468)	(0.000)	(0.022)	(0.016)	(1.584)
$\overline{Y}$	37.8	37.8	7.1	7.1	47.1	47.1

The outcome variables are whether the husband was unemployed or employed on public emergency work projects in 1940 (*100), the husband's occupational score, the husband's weeks worked in 1939, the husband's hours worked per week, the husband's natural log of wage earnings, and whether the husband owned the home (*100). Both OLS and IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The independent variables are the number of years of education completed by the wife (instrumented in the IV regressions) and the number of years completed by the husband. The sample is White, native-born women who were married and with her husband present in the household in 1940 (N=10560740). Column 5 further restricts the sample to households where the husband was earning positive wages in 1940 (N=7528960). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table A11: The Returns to Education on Spouse Quality By SES (No South)

	(1) H's Unem-ployed	(2) H's OccScore	(3) H's Weeks Worked	(4) H's Hours Worked	(5) H's ln(Wage)	(6) H's Nonwage > $50
Panel A: Father's OCCSCORE > Median						
Educ	-2.534	0.702	1.525	1.155	0.095	1.606
	(1.772)	(0.620)	(0.914)	(1.025)	(0.049)	(2.504)
$\overline{Y}$	11.851	28.751	43.818	37.720	7.248	31.767
Panel B: Father's OCCSCORE <= Median						
Educ	-6.135***	0.421	2.388***	2.634**	0.074*	-10.053***
	(1.304)	(0.434)	(0.594)	(0.938)	(0.038)	(2.600)
$\overline{Y}$	12.927	23.589	43.191	39.418	6.911	46.541
Panel C: Children from Farm Households						
Educ	-5.267***	0.930*	1.709**	1.727	0.064	-10.788***
	(1.191)	(0.434)	(0.531)	(0.973)	(0.038)	(2.542)
$\overline{Y}$	12.759	22.421	43.121	39.904	6.809	49.324
Panel D: Children from Non-farm Households						
Educ	-2.674	0.329	1.602	1.226	0.087	0.845
	(1.666)	(0.570)	(0.822)	(0.926)	(0.046)	(2.390)
$\overline{Y}$	12.085	28.466	43.753	37.771	7.233	32.820
Panel E: Children from Rural Areas						
Educ	-4.171**	0.874	2.156***	2.306*	0.101*	-10.509***
	(1.281)	(0.521)	(0.634)	(1.023)	(0.042)	(3.002)
$\overline{Y}$	13.500	23.935	42.839	38.733	6.904	44.025
Panel F: Children from Urban Areas						
Educ	-1.292	0.382	0.778	1.504	0.058	-1.082
	(1.753)	(0.599)	(0.908)	(1.062)	(0.042)	(2.824)
$\overline{Y}$	10.912	29.746	44.385	38.040	7.338	30.646

The outcome variables are whether the husband was unemployed or employed on public emergency work projects in 1940 (*100), the husband's occupational score/weeks worked in 1939/hours worked per week/natural log of wage earnings, and whether the husband earned more than $50 in nonwage earnings in 1940. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The independent variables are the number of years of education completed by the wife (instrumented in the IV regressions) and the number of years completed by the husband (not reported). The sample in Panel A and B consists of non-southern married women aged 28 to 55 in 1940 whose fathers had OCCSCORE above and below the median level (N=1428703 and N=1546579). The sample in Panel C and D consists of non-southern married women aged 28 to 55 in 1940 who were from farm and non-farm households when they were children (N=1317909 and N=1657373). The sample in Panel E and F consists of non-southern married women aged 28 to 55 in 1940 who were from rural and urban areas when they were children (N=2057561 and N=917721). The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

12.1 The Returns to Education Among Women from Farm Households

Women from farm households were not a homogeneous group. Some came from relatively advantaged backgrounds, particularly when their fathers owned the farm and operated on a larger scale. Although the census does not directly distinguish farm owners from tenant farmers, home ownership provides a useful proxy: most farmers lived on their land, so those who owned their home likely also owned their farm. Using this proxy, I examine whether the returns to education differed for women from farm-owning versus farm-renting households.

Columns 1 to 3 of Table A12 show that education increased women's probability of gainful employment, labor supply and occupational status, with little evidence of differential effects between daughters of farm owners and farm renters. This suggests that education raised economic opportunities for women from farm households regardless of their family's economic status. However, conditional on earning positive wages, which is a sample that may reflect different forms of selection, education raised wage earnings only among women from farm-owning households, but not among those from farm-renting households. This might be because daughters of farm owners, who likely had greater financial resources, were better positioned to utilize education to shift into higher-paying employment.

A similar pattern appears in marriage market outcomes. As shown in Table A13, education increased the probability of never marrying, with little difference between women from farm-owning and farm-renting households. However, conditional on being married, Column 1 of Table A14 indicates that an additional year of education was associated with a 6.7 pp. reduction in the husband's likelihood of being unemployed for women from farm-owning households, compared with only a 2 pp. reduction for women from farm-renting households, the latter of which is not statistically significant. This suggests that education not only improved women's own labor-market prospects but also facilitated more advantageous matches in the marriage market, particularly for those from relatively higher status families.

Table A12: The Returns to Education on Labor Market Outcomes - Women from Farm Households Only (By Home Ownership Status)

	(1) Gainful Occ.	(2) Weeks Worked	(3) Hours Worked	(4) OccScore	(5) ln(Wage)	(6) Steno-grapher	(7) Service HH
	Panel A: Farm Only - Father Owned Home						
Educ	7.808***	3.765***	2.703***	2.164***	0.237**	1.045**	-1.013*
	(1.851)	(0.851)	(0.668)	(0.483)	(0.075)	(0.360)	(0.432)
$\overline{Y}$	14.918	7.477	5.983	3.162	6.083	0.676	1.064
	Panel B: Farm Only - Father Rented Home						
Educ	8.612***	3.483***	2.733***	1.983***	-0.009	1.017**	0.304
	(1.438)	(0.635)	(0.530)	(0.349)	(0.108)	(0.318)	(0.351)
$\overline{Y}$	15.443	7.392	5.896	3.159	5.969	0.562	1.266

The outcome variables are whether one had a gainful occupation in 1940 (*100), weeks worked in 1939, weekly hours worked in 1940, the natural log of wages reported in 1940, and whether the woman was a stenographer, or a service worker for private households (*100). Other occupation-related outcome variables are omitted due to space limitations. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of women aged 28 to 55 in 1940 whose fathers were from farm households, with home ownership (N=1527683) and without home ownership (N=738532). Home ownership is a proxy for farm ownership. The table also display the mean of the outcome variables $\overline{Y}$.

Table A13: The Returns to Education on Marriage Outcomes - Women from Farm Households Only (By Home Ownership Status)

	(1) Never Married	(2) Divorced/ Separated	(3) Age at First Marriage	(4) Husband's Education
Panel A: Farm Only - Father Owned Home				
Educ	3.110*	0.603*	0.293	0.801***
	(1.214)	(0.301)	(0.526)	(0.092)
$\overline{Y}$	6.911	1.015	21.319	8.380
Panel B: Farm Only - Father Rented Home				
Educ	2.529**	0.409	0.139	0.784***
	(0.931)	(0.271)	(0.558)	(0.061)
$\overline{Y}$	5.818	1.087	20.588	7.812

The outcome variables are whether one had never been married (*100), whether one had been divorced or separated (*100), age at first marriage, and the husband's years of education. The independent variable is the number of years of education completed. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The sample in Panel A and B consists of women aged 28 to 55 in 1940 whose fathers were from farm households, with home ownership (N=1527683) and without home ownership (N=738532). Home ownership is a proxy for farm ownership. The table also shows the mean of the outcome variables $\overline{Y}$ in each category.

Table A14: The Returns to Education on Spouse Quality - Women from Farm Households Only (By Home Ownership Status)

	(1) H's Unem-ployed	(2) H's OccScore	(3) H's Weeks Worked	(4) H's Hours Worked	(5) H's ln(Wage)	(6) H's Nonwage > $50
Panel A: Farm Only - Father Owned Home						
Educ	-6.754***	1.961**	1.997*	2.017	0.039	-9.531*
	(1.938)	(0.726)	(0.855)	(1.413)	(0.044)	(3.781)
$\overline{Y}$	11.847	22.089	43.287	39.852	6.757	52.285
Panel B: Farm Only - Father Rented Home						
Educ	-2.035	1.167**	0.298	-0.052	0.076	-10.920***
	(1.400)	(0.445)	(0.658)	(1.124)	(0.048)	(2.549)
$\overline{Y}$	14.077	21.510	42.423	38.317	6.643	46.639

The outcome variables are whether the husband was unemployed or employed on public emergency work projects in 1940 (*100), the husband's occupational score/weeks worked in 1939/hours worked per week/natural log of wage earnings, and whether the husband earned more than $50 in nonwage earnings in 1940. Only IV estimates are reported. The regression includes birth state fixed effects and birth year by region fixed effects. The independent variables are the number of years of education completed by the wife (instrumented in the IV regressions) and the number of years completed by the husband. The sample in Panel A and B consists of married women aged 28 to 55 in 1940 whose fathers were from farm households, with home ownership (N=1301388) and without home ownership (N=635614). Home ownership is a proxy for farm ownership. The table also shows the mean of the outcome variables $\overline{Y}$ in each category.