Parents in Temperance

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PARENTS in TEMPERANCE

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Abstract

This paper studies how alcohol prohibition affected labor force and parental characteristics by exploiting county-level variations in prohibition status. These local alcohol prohibition laws lead to a "sobering effect" that improved labor market and educational outcomes of working-age adults. However, they also introduced significant levels of negative selection into parenthood. Evidence on job displacements in a variety of alcohol-related industries suggests that such negative selection could be explained by the life-cycle fertility model, where displacement shocks affected those on the lower end of the income distribution, reduced their opportunity cost of fertility, and nudged them into parenthood. The sobering effect mitigated the negative selection effect, and the net effect suggests a minor underestimation of the benefits of limiting parental drinking in the prohibition literature.

JEL: H73,I18,J1,N3

Keywords: Prohibition, labor force, parents, selection, labor market, education.

1 Introduction

The Temperance Movement in the United States brought about a large, unprecedented, and perhaps unsurpassed policy intervention that informs substance prohibition policies today. Prohibition not only had profound social and economic impacts but also serves as one of the most significant policy interventions on parental drinking. Studies on parental drinking using both prohibition (Evans, Helland, Klick, and Patel, 2016; Depew, Edwards, and Owens, 2013; Jacks, Pendakur, and Shigeoka, 2017) and modern drinking age laws (Barreca and Page, 2015; Nilsson, 2017) have documented strong causal effects on birth or long-term outcomes. However, as Nilsson (2017) stated, unless the effect of selection into pregnancy is fully accounted for, the estimated effects of prenatal intoxication on child outcomes are likely to be biased. Changes in parental characteristics can constitute confounding factors in evaluating the causal impact of parental drinking on children, but both the size and direction of this bias remains unclear.

The current paper fills this gap by exploiting county level variations in legislative successes of prohibition and identifies two countervailing effects of the Temperance Movement that changed parental characteristics-the sobering effect and the selection effect.

First, the sobering effect results in improved average socioeconomic outcomes. Drunkenness was a widespread problem that lowered productivity (National Research Council and Committee on Substance Abuse and Others, 1981), and prohibition successfully reduced rates of binge drinking (Edwards and Howe, 2015; Miron and Zwiebel, 1991; Dills and Miron, 2004; Warburton, 1932). At the inception of the Temperance Movement, reformers asserted that preventing intoxication would improve economic conditions. Their claim is plausible considering the effects of modern drinking age policies and alcohol taxation on education and crime (Cook and Moore, 1993, 2002; Dee, 1999; Carrell, Hoekstra, and West, 2011; Hansen and Waddell, 2017).

This paper provides empirical support for sobering effect under prohibition. We found that an average person in a prohibition county experienced a 1 percentage point increase in literacy. Men also experienced improvements in socioeconomic status and homeownership. This evidence suggests the existence of a moderate but statistically significant sobering effect.

Second, adults with certain characteristics choose to be parents, but due to prohibition laws, these traits may change. A shift in the process of self-selection to parenthood can be measured by calculating causal changes in the parent-nonparent gap in socioeconomic status due to prohibition. This selection effect negatively impacts child outcomes when parents of lower socioeconomic status are more likely to become parents due to prohibition.

Theoretically, the sign of the selection effect is ambiguous. On one hand, during prohibition, birth control was not readily available due to legacies of the Comstock Law (Reed, 1984; Goldin and Katz, 2002). Therefore, reduced drunkenness could have improved contraceptive freedom for women by lowering the number of unplanned births, especially among young adults (DeSimone, 2010a,b; Markowitz, Kaestner, and Grossman, 2005),[1] hence improving the average socioeconomic status of parents. On the other hand, individuals who suffered from displacement in alcohol-related industries may give birth during economic downturns. Especially those who had a hard time finding other occupations, in turn, a low opportunity costs for conception (Dehejia and Muney, 2004; Butz and Ward, 1979).[2] This is consistent with the life-cycle fertility model, which predicts an increase in fertility among negatively affected workers when the labor market takes a hit.[3]

The selection effect empirically reveals strong negative selection into parenthood. Under prohibition, parents had lower socioeconomic standing in terms of the earning and prestige of their jobs, literacy, and chances of investing in homeownership. These parents were also more likely to be younger and experienced higher rates of child mortality. We argue that these findings reflect the fertility response of negative labor market shocks observed on the lower end of the income distribution based on the life-cycle fertility model. Among the displaced workers, those who were young, inexperienced, and lacked transferable skills could have taken longer to transition into a

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[1]This newfound power of choice could have allowed young women who wished to pursue more education to delay pregnancy (Ananat and Hungerman, 2012).

[2]Although Dehejia and Muney (2004) found pro-cyclical infant health, the underlying cause is related to a worsened economy leading to increased levels of fertility among high Socioeconomic status (SES) Black mothers. During prohibition, fewer economic opportunities were available for a different group of parents— those who are low SES.

[3]This conclusion is based on the fact that a female's absence from the labor market does not lead to large declines in compensation.This condition is clearly fulfilled in the pre-1920s U.S.

new job. These workers were the ones who had a low opportunity cost to pursue parenthood. The life-cycle fertility model is a convincing explanation for the negative selection found among prohibition parents.

To establish evidence of a negative labor market shock in the prohibition era, we examined the displacement effect of workers in alcohol-related industries. Unlike modern alcohol policies implemented in the U.S., historical prohibition heavily disrupted the production of alcohol and upstream and downstream industries such as barrel production, transportation, entertainment, and retail (Blocker, 2015; Warburton, 1932; Cherrington, 1920; Wickersham, 1931). We found that prohibition cut the number of men working in the alcohol production, trade and retail industries by half. This displacement effect was stronger for states with larger alcohol production industries prior to the start of prohibition. Prohibition-related industries such as the restaurant, bar, and transportation industries were also negatively affected. For all alcohol-related occupations, displacement affected 1.5 percent of the population which is equivalent to half the effect of a modern recession. Given this apparent economic impact, prohibition likely influenced household resources via parents' employment statuses or income levels– two important factors for child development (Kane, 1994; Britto and Brooks-Gunn, 2001; Stevens and Schaller, 2011; Oreopoulos and Page, 2006; Almond and Currie, 2011a,b).

Combining the countervailing sobering and selection effects, we found a net negative shift in parental characteristics that implies an underestimation of the benefits of limiting parental drinking. However, the size of such effects is small and unlikely to cause consequential changes in the estimated effect of prohibition on average child outcomes in prohibition literature (e.g., Evans, Helland, Klick, and Patel, 2016; Depew, Edwards, and Owens, 2013; Jacks, Pendakur, and Shigeoka, 2017).

This paper is also the first to exploit the variation in prohibition status resulting from the historical evolution of local prohibition laws since the late 19th century. Unlike the Eighteenth Amendment, ratified in 1919, that banned the production, sale, and transportation of alcohol nationwide, less is known of local dry laws. Temperance supporters had been successfully establishing county

and state-level prohibition laws for more than half a century prior to 1919. These local laws gained significant support from women's rights groups and from members of Protestant churches hoping to reduce rates of domestic violence by promoting "Protestant standards of behavior" among men (Cherrington, 1920). In studying these local laws, the effects of alcohol prohibition can be better understood than by simply analyzing the national policy. The different timing of local laws at the county and state levels also allows for the development of a richer empirical model and parallel trend tests that limits omitted variable bias.

2 Policy Background

The Temperance Movement ran a long course, starting in the early 19th century and culminating in the passage of the Eighteenth Amendment in 1919 (Figure 1a). Throughout this period alcohol was painted as the source of various social frustrations. The reduction of domestic violence and parental drinking and the improvement of productivity and child outcomes have always constituted the main goals of prohibition (Levine, 1984).

The national Temperance Movement was born at the local level. The 1851 Maine Liquor Law inspired a wave of early adopters of dry laws.[4] However, state prohibition laws established prior to 1900 were short-lived with the exception of those applied in Maine, which maintained its prohibition law throughout the Temperance Movement. Local prohibitions or Local Option Laws applied at the county or city level have been carefully documented since 1801 (Sechrist, 1999) and often became an alternative way to stay dry after state prohibition laws were repealed. After 1907, prohibition laws started to pass more frequently at the state level (Figure 2). This was the result of a powerful political campaign led by the Prohibition Party, the Women's Christian Temperance Union (WCTU), and the Anti-Saloon League (Odegard, 1928). Many of the leaders of these groups were women (Thornton, 1991).

While other events occurring in the early 1900s may have also changed the education or health statuses of parents, most of these events took place after the period of the Temperance Movement

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[4]A few early adopter states followed over the next 5 years. These states include Illinois, Indiana, Iowa, Massachusetts, Michigan, Missouri, New Hampshire, Ohio, New York, and Vermont.

we examine, such as during the Civil Rights Movement (1954-1968), under the Maternal and Infancy Protection Act (1921), and during the Rosenwald Initiative (1919-1931).[5] Other important policies applied during the Temperance Movement were found to be inconsequential to adults (e.g., hookworm eradication (1890-1910) and the Mortality Revolution (1900-1955)).[6] One reasonable concern over the identification strategy stems from close connections between the Temperance Movement and the suffrage movement, which mainly took place between 1910 and 1920. The two movements exhibited significant overlap in political motivations and advocacy groups (Coker, 2007; McDonagh and Price, 1985; Thornton, 1991). Female empowerment may have had an impact on women's socioeconomic performance and education levels. Therefore, in this study, we try to differentiate the impact of prohibition and suffrage by controlling for the status of state suffrage laws. We also include variables for education investment and quality. Our findings are robust to the control of these policies, state linear time trends, and state-by-year fixed effects.

Support for prohibition laws varied with respect to the various characteristics of voters (e.g. their geographic locations and race). Despite its popularity in rural areas, it remained unpopular in larger cities; in northeastern states; and among liturgical church members, Blacks and immigrants (Lewis, 2008; Endersby, 2012). Gangs and bootleggers who smuggled alcohol across borders became more organized and violent during this period, which increased homicide rates for individuals between the ages of 20 and 30 relative to other age groups and especially in northern states and in states with large immigrant and urban populations (Owens, 2011). In this study, we found a similar demographic shift. We also provide results for race-by-gender subgroups in the Appendix Tables. These results exhibit a similar pattern of selection effects. However, the sobering effect is less pronounced when using Black subsamples.

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[5]Aaronson and Mazumder (2011) found that although some early constructions existed since 1914, less than 5 percent of rural Black children benefited from the Rosenwald Schools in 1919.

[6]Bleakley (2007) found that hookworm eradication in the south that brought productivity gains for children had limited effects on adults due to low infection rates. Zhang (2017) argued that the effect of infectious diseases also concentrated on children under the age of 5.

3 Data

3.1 Census

This paper matches county-by-year information on prohibition status with county residents captured by 1880, 1900, 1910 and 1920 decennial censuses (Ruggles, Flood, Goeken, Grover, Meyer, Pacas, and Sobek, 2018). The analysis uses information on an individual's geographic, demographic, child, and socioeconomic characteristics. Such information is available through the Integrated Public Use Microdata Series (IPUMS). We study individuals who lived in the U.S. at the time of the interviews. Individuals for whom information on county, gender, race, or occupation characteristics is allocated are dropped from the sample. Individuals who lived in DC, HI, AK, unorganized territories, or reservations are eliminated due to a lack of prohibition records. Although 10 states[7] were territories at some point in the years captured, only Oklahoma lack prohibition record prior to its statehood. Therefore, Oklahoma is excluded from the study. The other states/territories were not excluded from the analysis because local prohibition law records for these areas still exist. Following these steps, a total of 3.9 million men and 3.8 million women of ages 15 to 55 are identified as the working-age population.[8]

The working-age population is divided into "new parents" (parents with newborns and infants) and "nonparents." New parents are those who live with their own child who is between 0 and 1 years of age. It is possible for only one parent to be living in the same household with a baby. To accurately match prohibition laws and parents' locations during conception, we also remove families with a child born outside of the current state of residence. Approximately 3% of the infants are reported to have been born in another state. In total, 927 thousand new mothers and 882 thousand new fathers are identified.

The demographic outcome variables include a set of age distribution indicators (i.e., less than 20 years of age, between 20 and 30 years of age, and older than 30 years of age). For women, demographic variables also include an indicator for being married, for the total number of births

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[7]Arizona, Idaho, Montana, New Mexico, North/South Dakota, Oklahoma, Utah, Washington, Wyoming.
[8]Summary statistics by race and parenthood are given in Appendix Tables A2 to A5.

regardless of survival, and the percentage of past births that survived. Due to data limitations of the census, information on birth history is only available for the 1900 and 1910 censuses.

The variables that measure socioeconomic standing are indicators for employment in the alcohol or alcohol-related industries (1880-1920), school enrollment (1880-1920), and homeownership (1900-1920),[9] and a score for socioeconomic standing (SEI, 1880-1920) is normalized to range between 0 and 1. SEI is based on the income and education associated with a job. Given the lack of income data in historical censuses, the variable is considered an imperfect proxy to job prestige and income.

Alcohol industry jobs are defined as alcohol producers (brewers, maltsters, liquor and beverage workers), retailers (bartenders, saloon keepers and workers), and traders (traders of alcohol).[10] For upstream and downstream industries, we examine the restaurant and transportation sectors.[11] We did not choose to include unemployment rate as an outcome variable because unemployment is inconsistently defined over time. [12]

There are a number of things to note concerning the industry of employment variables. First, a worker is surveyed about his or her current industry based on having "gainful employment" in the previous year. Therefore, the variable measures the size of the industry for the year prior to the census year.[13] Other variables also survey the status of the year prior to the census year, such as enrollment and SEI. Second, the credibility of female occupation and employment variables for the period prior to the 1940 census is clouded by measurement problems. The amorphous concept of "gainful employment" posed particular problems of interpretation with respect to women when

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[9]Homeownership does not imply that a mortgage has been paid off.

[10]These are defined using IPUMS variables OCC and IND.

[11]The number of identifiable alcohol-related occupations is very restricted. Many industries such as barrel-making or related agriculture jobs are not included in this measure due to data limitations.

[12]Unemployment is defined as either weeks or months of unemployment under various scopes. The IPUMS used to offer a harmonized variable that was recently discontinued. While we explored various constructions of the unemployment variable, the summary statistics do not match what was established in the literature. A typical level of 5% unemployment was found for this era (James and Thomas, 2003) whereas then census unemployment rate is 15% or above. Therefore, the industry of employment variable is chosen in this study instead of a direct employment measure.

[13]This is an approximation because we cannot rule out the possibility that a person who was employed in the preceding year moved into another industry in the census year. However, we think that the effect of this error can be disregarded in this study. One might argue otherwise.

a large number of them were seasonally employed or working at home (IPUMS users' guide).[14] There were inconsistencies regarding whether working women were asked the occupation questions. Thus, we do not report occupation and employment results for women.

Other control variables include the percentage of the population that is White and Black and the percentage of the population living in urban, metropolitan, and rural areas. As discussed above, these factors are recognized as crucial to the passing of local prohibition laws (Endersby, 2012).

3.2 Prohibition Status

The county-level prohibition legislation dataset is taken from the Inter-University Consortium for Political and Social Research (ICPSR), and the dataset was created by Robert P. Sechrist (Sechrist, 1999). The dataset gathers information from a myriad of sources such as legislative reports, literature, and newspapers to determine Prohibition status for every county in the contiguous United States for 1801 to 1920. Although the dataset does not distinguish between counties that permitted saloons from those that limited liquor sales to dispensaries, this distinction would not have been important to someone who was strictly interested in obtaining legal liquor (Lewis, 2008).

Observations given in the censuses are matched to county prohibition status one year before the census year. As mentioned above, some of the census questions focus on socioeconomic outcomes of the previous year (e.g., industry, SEI, and school attendance). Thus, our match is adjusted accordingly. The rest of the outcome variables (i.e., married, and homeownership) are relatively stable over a year. Hence, an individual's answers given in the census year are a good approximation for that person's status in the previous year.[15]

Figure 1a presents the number of dry counties in the U.S. by year. As counties may establish or repeal their dry laws, we observe several dips in the number of dry counties over time. Figure 2 further demonstrates the variation used in this study by portraying the percentage of each state's population under dry laws. The pattern illustrated in these figures demonstrates that in some states county dry laws gain momentum over time and culminate at state prohibition while in other states

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[14]Source: "Integrated Occupation and Industry Codes and Occupation Standing Variables in the IPUMS."

[15]We also tried matching at the prohibition year, and the results are very similar for these variables.

they serve as an alternative means for counties to remain dry after state prohibitions are repealed. Figure 1b presents the geographic dispersion of counties experiencing a prohibition status changes between 1880 and 1920, which are also the counties included in this study. Maine is consistently dry and hence excluded from the study. Oklahoma has incomplete records, so it is also excluded. A few counties across the country are also excluded due to the lack of change in prohibition status. They are highlighted in light shading in Figure 1b.

Prohibition laws were effective in reducing the number of breweries operating in the U.S. Figure 3a demonstrates that prohibition is correlated with a drastic decline in the number of breweries from more than 2200 in 1880 to half that number in 1920, denoting prohibition's effective suppression of the alcohol industry.

3.3 Other datasets

To control for the effect of important policies adopted in the same era, we resort to the following resources. State-by-year suffrage statuses are made available by Lott and Kenny (1999). Education investment and quality measures, including student to teacher ratios, school terms, and salaries, are compiled from issues of the Biennial Survey of Education with the results of surveys of state education departments performed by the U.S. and made available by Stephens and Yang (2014). This dataset covers 1905 to 1959 but does not cover the first two census years examined in this work (1880 and 1900). We thus linearly interpolate the 1900 measure from the 1905-1930 data.[16] Alcohol production data were digitized from The Register of United States Breweries 1876-1976 (Friedrich and Bull, 1976).

4   Empirical Strategy

The empirical model captures both channels that altered parental characteristics after prohibition– the sobering and selection effects. The identification strategy draws exogenous variation from the timing of local prohibition laws. The samples of nonparents and new parents (p) are collapsed into cells defined by county (c), year (t), gender (g), and race (r). Sampling weights are applied in this

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[16]The 1880 measures are not imputed because of the long time span between 1905 and 1880. As the 1880 census year fixed effect is included here, these values are set to zero to demonstrate that they are missing.

process. All standard errors are clustered at the state level.

$$Y_{ctgrp} = \beta Proh_{ct} * Parent + \gamma Proh_{ct} + \rho Parent$$

$$+ X^1_{ctgrp}\xi_1 + X^2_{ct}\xi_2 + \delta_c + \delta_g + \delta_r + \delta_s t + \epsilon_{ctgrp}, \tag{1}$$

where Y_{ctgrp} denotes the weighted average of an outcome variable by county (c), census year (t), gender (g), race (r), and new parenthood (p). Coefficient γ captures the sobering effect. Coefficient β captures the selection effect. A new parent subjected to local prohibition laws experiences both effects.

Two sets of outcomes are examined – the demographic and the socioeconomic outcomes. The demographic outcomes include: age groups 15 to 20, 20 to 30, and 30 and above; for females, an additional set of outcomes is included: marital status, the total number of births regardless of survival, and the percentage of children surviving to the survey year.

Socioeconomic outcomes include employment in alcohol, restaurant and bars, as well as, the transportation industries, social economic index (SEI), literacy, homeownership, and school enroll-ment. These socioeconomic factors are important to children's long-term wellbeing (Kane, 1994; Britto and Brooks-Gunn, 2001; Stevens and Schaller, 2011; Oreopoulos and Page, 2006; Almond and Currie, 2011a,b).

$Proh_{ct}$ is an indicator of prohibition status of county c in year t. $NewParent$ is a dummy variable that equals to 1 for new parents with infant less than 1 year-old and 0 otherwise. X^1 are cell-level average characteristics such as percentages of urban, metropolitan, and farm populations within each cell. These controls absorb differences in known factors associated with the passing of prohibition laws. X^1 also includes controls for age and marital status, capturing their respective effects on the incentive to participate in the labor force. In Table 2 and A1, where age and marital status are the outcome variables, we exclude them as controls. X^2 includes county-by-year level control variables such as the percentage of White/Black residents living in a county in a given census year. We also control for the suffrage status by state and year and for a series of education

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policy measures, including student to teacher ratios, school terms, and teacher salaries.

$\delta_g, \delta_r, \delta_t$, and δ_c are unrestricted gender, race, year, and county fixed effects, respectively. The year and county fixed effects eliminate biases in the coefficients of interest caused by geographic or temporal discrepancies such as the occurrence of WWI, business cycles, and persistent cross-county differences in labor market conditions. $\delta_s t$ is a set of state-specific time trends which further absorbs trends that further absorbs trends in state public health investment and disease prevalence. In some analyses we use gender and race-specific subsamples; therefore, depending on the subsample used, some fixed effects will be dropped from the regression model.

To further address concerns of causality, we perform event time analysis to all outcome variables, limiting the years to a narrow window close to the prohibition law's passing. We also added state-by-year fixed effects to the main specification. The result of this exercise discards variation from state-level dry laws and focus only on within-state variations. The robustness tests also eliminate the concerns for low reporting in small counties.

5 Results

Selection into Parenthood

Parents in temperance counties demonstrate consistent and significant negative selection into parenthood. The first row of coefficients shown in each panel of Tables 1 and 2 presents the magnitude of the selection effect.

Table 1 illustrates that prohibition formed a negative parent-nonparent gap in socioeconomic status. Fathers were 1 percentage point more likely to be illiterate and less likely to be enrolled in school (Columns 2 and 4). Both parents saw a reduction in their socioeconomic index (SEI), which is a proxy for job prestige and income, and were less likely to invest in homeownership (Columns 6 and 8).

In addition to socioeconomic outcomes we examine the demographic characteristics and birth histories of parents. Table 2 and Figure 4 summarize these changes. First, parents are younger, are less likely to be married and have lower child survival rates as a result of prohibition. Figure

4 visualizes the shift in the empirical age distribution of parents, demonstrating that both mothers and fathers subjected to prohibition are younger than their wet counterparts. Under prohibition, new mothers were 2 percentage points more likely to be 20 years of age of younger, and new fathers were 4.5 percentage points less likely to be over 30. Mothers were 4.2 percentage points less likely to be married and their children had a 0.3 percent lower survival rate.

To further demonstrate the causality in the pattern of selection, and to test for the existence of pre-trends in our analysis, Figure 6 presents an event time study. The figure illustrates that overall evaluation of the parents' SEI and the likelihood of the mother being married or a teen sharply worsened near the passing of the local prohibition law. Similar analysis of all other outcome variables in the analysis show a similar pattern of selection. They are reported in Appendix Figure A3 and A5.

While it is unlikely that parents responded to prohibition by selling their homes or by entering a profession of lower occupational standing, an alternative and more convincing interpretation relates to the occurrence of self-selection. The life-cycle fertility model predicts that self-selection into parenthood may occur when a negative labor market shock affects those less capable of weathering negative labor market changes (Dehejia and Muney, 2004; Butz and Ward, 1979). According to this theory, prohibition, which limited or ended the legal production and sale of alcoholic beverages, may have served as a negative labor market shock that nudged those who took longer to recover from the displacement to choose parenthood. We provide evidence consistent with this hypothesis in the next section.

Although we find the life-cycle fertility model the most convincing explanation for selection effect, we do not dismiss the possibility that binge drinking among teenagers could contribute to younger and lower income parents. But consider the selection effect is prominent while controlling for the age of the parent, teenage drinking is unlikely to be the primary contributor to the selection effect.

The "Sobering Effect"

Supporting the assertions of Temperance supporters, we find that on average prohibition im-

proved socioeconomic status. The coefficient of the variable prohibition reported in Table 1 indicates that an average working-age person was more likely to be in school (Column 2) and that males and females were more likely to be literate by 0.11 and 0.9 percentage points, respectively (Column 3). Nonparent males also exhibit a higher chance of investing in property ownership and obtain higher socioeconomic scores by 0.7 and 0.4 percentage points, respectively (Columns 6 and 8). Similar to the examination of the selection effect, we present the event time analysis on sobering effect in Appendix Figure A4 and A2. The results are consistent with the point estimates in Table 1.

Although we do not observe drinking behavior from the dataset, other convincing evidence demonstrates that alcohol consumption levels were lower. First, the number of breweries in the U.S. reduced by 60% between 1870 and 1920 (Figure 3a); second, a series of studies has shown that levels of binge drinking are greatly reduced as a result of state-level prohibitions (Miron and Zwiebel, 1991; Dills and Miron, 2004; Dills, Jacobson, and Miron, 2005).[17] We argue that reduced alcohol access is the most likely explanation for the improvements in average socioeconomic outcomes found in this study.

In terms of the demographic characteristics in Table 2, one effect worth noting is the percentage of males between the ages of 20 and 30 fell by 1.4 percentage points (Column 8). This is consistent with Owens (2014) who found that due to an upsurge in organized crime during prohibition, homicide rates for individuals between the ages of 20 and 30 increased, which lead to noticeable age distribution shifts.[18]

The Total Effect

The countervailing impacts of reduced intoxication and negative selection prevent us from

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[17]These studies use cirrhosis mortalities as indications of binge drinking. They usually observe significant nationwide decline from 1900 or slightly later, which matches the number of counties under prohibition presented in Figure 1a. As far as we know there is no causal evidence of moderate drinkers' behaviors after prohibition.

[18]Another coefficient that stands out is the total birth of women 15 to 55, regardless of survival, is 0.08 children higher in dry counties. The measure is only available in two census years–1900 and 1910. The fewer number of years of observation could make the result rely more on the comparison between early and late prohibition counties. The former may have had a higher fertility, all else equal. The result does not imply that prohibition increased fertility. This conclusion is strengthened by the event time analysis in the last panel of Figure A4, which showed little fertility response to the passing of local prohibition laws.

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predicting the direction of total change of parental characteristics. To test the combined outcome of the sobering effect and negative selection into parenthood, we calculate the p-value of the Wald test of combined effects in Table 1.

The findings suggest that the total effect is generally negative and low in magnitude. Mothers experienced lower socioeconomic status due to prohibition. Both parents were also less likely to be homeowners and less likely to be enrolled in school. Although reduced household resources can causally impact child outcomes, the size of the average effects we found is small and unlikely to cause consequential changes in the estimated effect of prohibition on average child outcomes in the literature (e.g., Evans, Helland, Klick, and Patel, 2016; Depew, Edwards, and Owens, 2013; Jacks, Pendakur, and Shigeoka, 2017).[19] However, it is possible that some families were hit much harder by prohibition such as those that experienced displacement from alcohol-related industries. This may have resulted in a broader and more long-term negative impact on the parents and children of these households (Lindo, 2011; Stevens and Schaller, 2011).

One limitation of the paper relates to the findings in Evans, Helland, Klick, and Patel (2016), who argued that sober parents can secure more resources to raise children, even if the children were not conceived in prohibition years. As our estimates for parents are limited to new parents with a child under the age of 1, there may be a differential impact of prohibition on families with older children that we do not observe in this study.

6   Mechanism and Robustness Checks

Closure of Alcohol-related Industries

Evidence suggests that prohibition had a detrimental effect on relevant industries. The estimates given in Table 3 document widespread closures of the alcohol industry due to prohibition.[20] The results demonstrate that men holding alcohol industry professions dropped by 6 percentage

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[19]The mothers also show an insignificant to positive effect on literacy (Table 4A Panel A and Table 1 Panel B), which could further counteract the impact of the negative selection effect.

[20]In Appendix Table A6, we further divide the sample into Black and White population subsamples because experiences of prohibition could have been different between these two groups (Walton and Taylor, 1971).

points while the share of working-age males in alcohol professions averaged 1.17 percentage points before prohibition (Panel A Column 7).[21] Thus, prohibition reduced the number of men working in the alcohol industry by approximately 50%. The size of the effect echoes descriptive findings in Figure 3a, indicating that approximately 60% of breweries were closed between 1870 and 1920. It is also not surprising to observe that new parents were disproportionately moving away from alcohol industries (Panel A Column 8), which is consistent with the prediction of the life-cycle fertility model.

In Panels B and C of Table 3, supplemental evidence on the size of alcohol-related occupations is introduced. Prohibition is found to have reduced the occupations in restaurants and bars, as well as transportation industry.

Displacement due to prohibition affected 1.5 percent of the working-age population when combining the alcohol, restaurant, and transportation industries (Column 8). This translates into 57% of the effect of a typical recession.[22] Although labor supply increases (with a stable number of jobs) can also drive up unemployment, the effect found in this study is hardly the result of a labor supply shock.

Figure 5 presents an event time study that further demonstrates the causality of the unemployment effect. The figure illustrates that employment in the alcohol industry sharply declined shortly after the passing of the law, which strongly suggests that the relationship we observe is causal.[23]

Overall we find strong evidence suggesting that prohibition represented a significant negative labor market shock for the alcohol and upstream/downstream industries. The selection effect observed among prohibition parents is likely a consequence of this negative labor market shock. Specifically, out of all the labors who were temporarily displaced from their previous work in the alcohol-related industries, those who took a long time recovering in the job market, and hence a lower opportunity cost to give birth, self-selected into parenthood. In other words, we find the

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[21]Calculated this as the weighted average of all county-years not subjected to prohibition.

[22]A typical recession is defined as the average of the recent 4 recessions since 1980. The average peak-to-trough unemployment increase is 2.6 percentage points. The peak and trough of recessions are identified by National Bureau of Economic Research US Business Cycle Expansions and Contractions data. CPS monthly unemployment rate were used in the calculation.

[23]The graph suffers from a similar unbalanced panel as that illustrated in Table 4A Panels A and B.

life-cycle fertility model to be the most plausible theory to explain the change in parental characteristics.

Other Robustness Tests

One may be concerned about the bias introduced by education-related investments made in the early 20th Century or by the suffrage movement that may have changed female education choices. As introduced above, most of these policies do not overlap with the local prohibition roll-outs. Our preferred specification includes state-specific trends and additional controls for suffrage status as well as a series of education investment and quality measures, including student to teacher ratios, school terms, and salaries. With these controls, we argue that the school enrollment effect found in this paper reflects the causal effect of prohibition. Nevertheless, we conducted the following 4 robustness checks on our main results. These robustness tests address the causality of our specifications, the consistency of our sample, and the results according to a more restrictive model.

First, we provide additional evidence showing that our results are driven by changes in prohibition laws rather than by other correlated factors. If the reduction in alcohol industry jobs is the result of alcohol prohibition, we should observe a more significant job-reduction effect for states with a larger alcohol industry. Figure 7 supports this hypothesis by evaluating the effect of prohibition by state alcohol production rankings.[24] The figures show a clear reduction in the magnitude of the displacement effect of prohibition for both sobering and selection effects.

Panels A and B in Table 4A present a second robustness test on sample construction. These panels limit the sample to +/- 10 (5) years preceding and following the year in which prohibition law became effective. One point to make note here is the fact that censuses are taken every decade.[25] Therefore, most of the counties would appear in only two adjacent samples of the census, as we limit our views to 20 (10) years for each county. Thus, the results here are subject to biases of the unbalanced panel. Nevertheless, these results are highly consistent with our baseline

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[24]Figure 3b indicates that the ranking of the number of breweries in each state remains relatively stable from 1876 to 1900. Therefore, we use the state alcohol production ranking for 1876 to reduce endogeneity in alcohol production to prohibition status.

[25]Data for 1890 are missing from our sample.

results in terms of signs and magnitudes for men. For women, the sign of the effect is consistent with the main specification, but the size of the effect fluctuates when the window is reduced to +/- 5 years. As discuss in our data section, census statistics on the socioeconomic status of females are less precisely measured compared to those for males.

Table 4B Panel C presents our test on the robustness of sample selection due to measurement errors for different industries. Low levels of industry reporting for small counties may bias our estimates. Therefore, Panel C restricts the minimum number of people reporting their occupations to 5 per-county year-gender-race-parenthood cells. This removes 13% of the cells from the sample. The same precautionary measure is applied when we compare men working in different industries in Table 3. The results given in Panel C robustly demonstrate the presence of sobering and selection effects as observed in the baseline models.

Our fourth and final test examines the robustness of our estimators by removing all possible bias-inducing factors at the state-by-year level. The regressions presented in this table apply a state-by-year fixed effect to the basic specification. This specification and the main specification differ in that the model removes the variation generated by any state-level legislative efforts while preserving county-level variations in prohibition status. All coefficients concerning selection into parenthood are identical to those of our basic specification. The results concerning socioeconomic shocks to working-age adults are stronger under this more restrictive specification.

7   Conclusion

The Temperance Movement changed the economic conditions and drinking behaviors of the generations that experienced it. When studying its effect on children, the change in parents' economic conditions and selection into parenthood cannot be ignored. The direction and the size of the change in parental characteristics are unclear. The current paper fills this void in the literature by examining the causal effect of the Temperance Movement on working-age adults and parents.

Overall, we find that prohibition laws improved the socioeconomic status of the working-age population, potentially by limiting alcohol access. We also find that prohibition spurred negative

selection into parenthood in terms of employment, education, asset investment, and social status. The birth and long-term outcomes of children are likely to be negatively affected by these changes. But after taking into account the size of the net effect of prohibition on parents, results only suggest a minor underestimation of the benefits of limiting parental drinking in the literature.

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Figure 1: The Evolution of Local Prohibition

(a) Total number of Prohibition Counties, 1800-1920
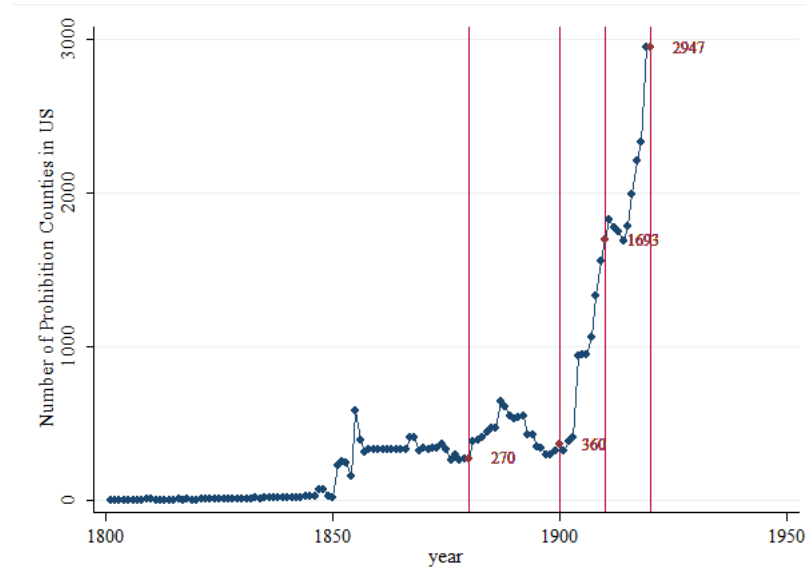
(b) Change of Local Prohibition Status between 1880 and 1920
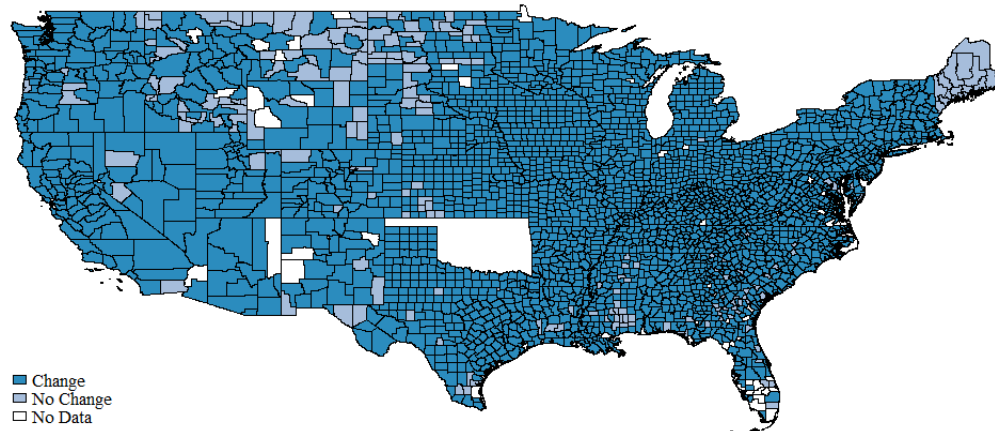
Note: (a) The figure captures the total number of counties under prohibition in the U.S. between 1800 and 1920 using the ICPSR dataset. (b) This map shows the counties that experienced changes in prohibition policies between 1880 and 1920, which are the years captured by this study. The counties missing prohibition status are colored white; those whose prohibition status never changed have a lighter shade; and those whose prohibition status has changed at some point between 1880 and 1920 have a darker shade. Oklahoma was omitted from the study due to the lack of prohibition records prior to its statehood. Other states does not have a similar magnitude of records missing regardless of statehood. Maine has been consistently under various prohibition laws since 1851 and therefore does not demonstrate a change in policy.

Figure 2: The Evolution of Local Prohibition: Percent of Prohibition Counties by State
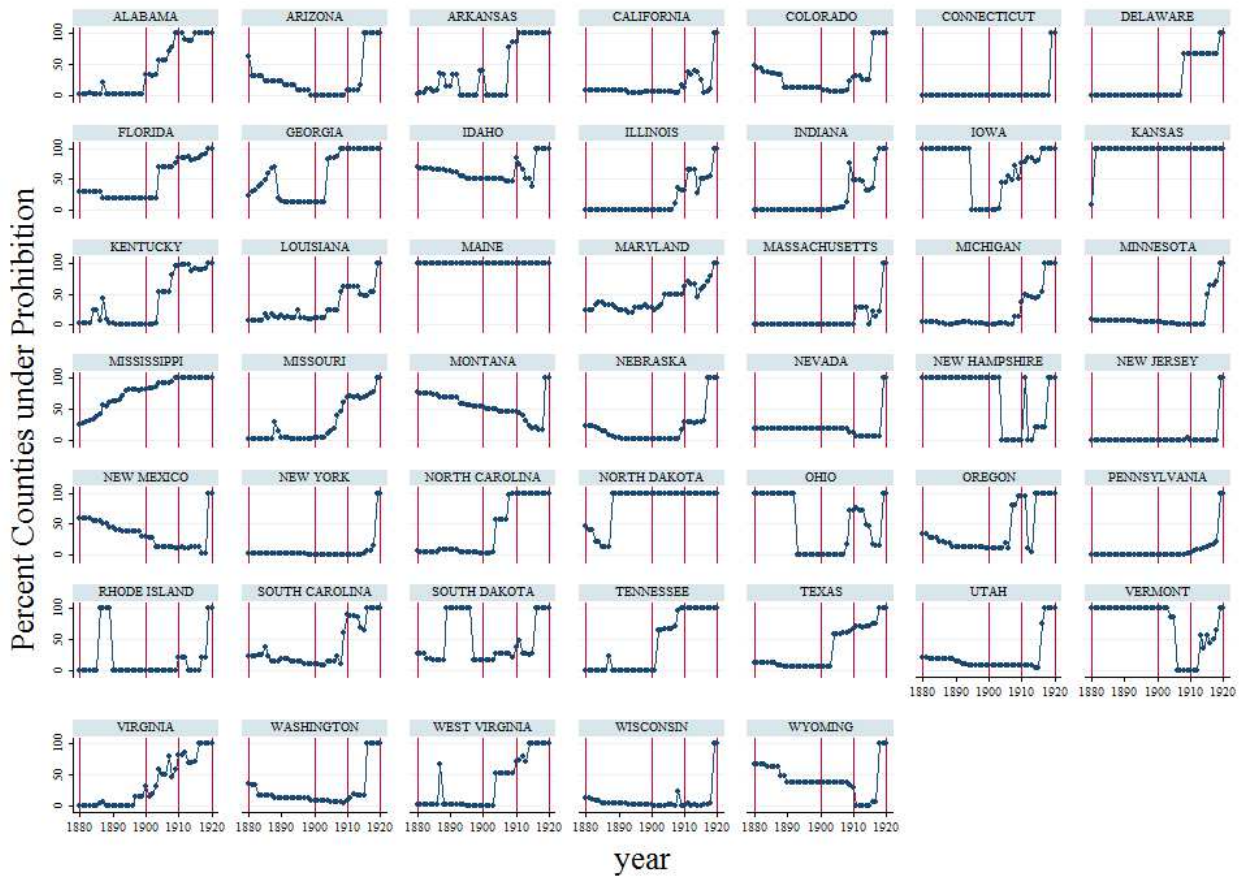
Note: The figure captures the percent of population in a state under prohibition in the U.S. between 1880 and 1920. Any counties/states without prohibition records were excluded. Details on where these counties are located are available in Figure 1b. The vertical lines represent the four censuses used in this study.

Figure 3: Alcohol Production in the U.S. between 1880 and 1920

(a) Total Number of Breweries in the U.S.
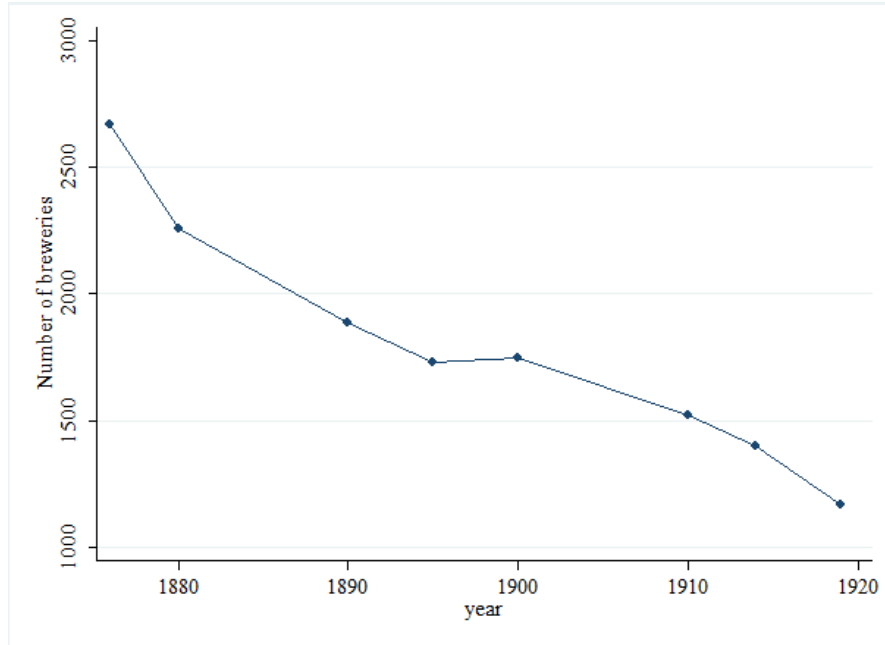
(b) State Alcohol Production Ranking, 1876-1900
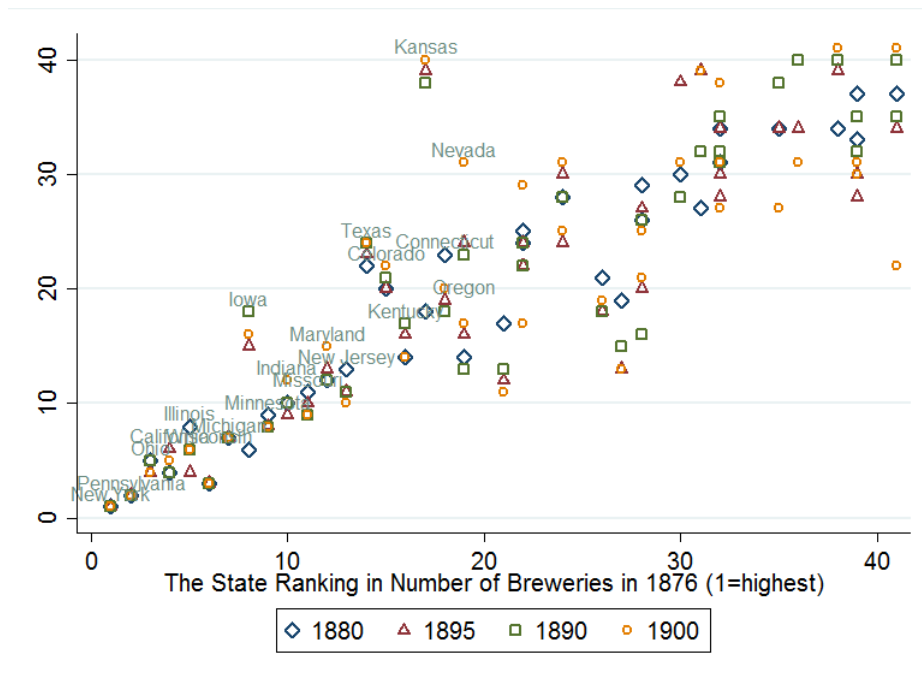
Note: (a) The data is from The Register of United States Breweries 1876-1976 (Friedrich and Bull, 1976). The figure depicts the total number of breweries in the U.S. by year. (b) The number of barrels of alcohol production is collected from the same source as figure (a). A total of 43 states are available in the dataset. The highest ranking 20 states in 1876 are labeled in the figure. Some states are tied in their rankings. The only tied states in the top 20 are Nevada and Oregon, which both ranked 19.

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Figure 4: Age Distribution of Parents under Local Prohibition

(a) Fathers

(b) Mothers
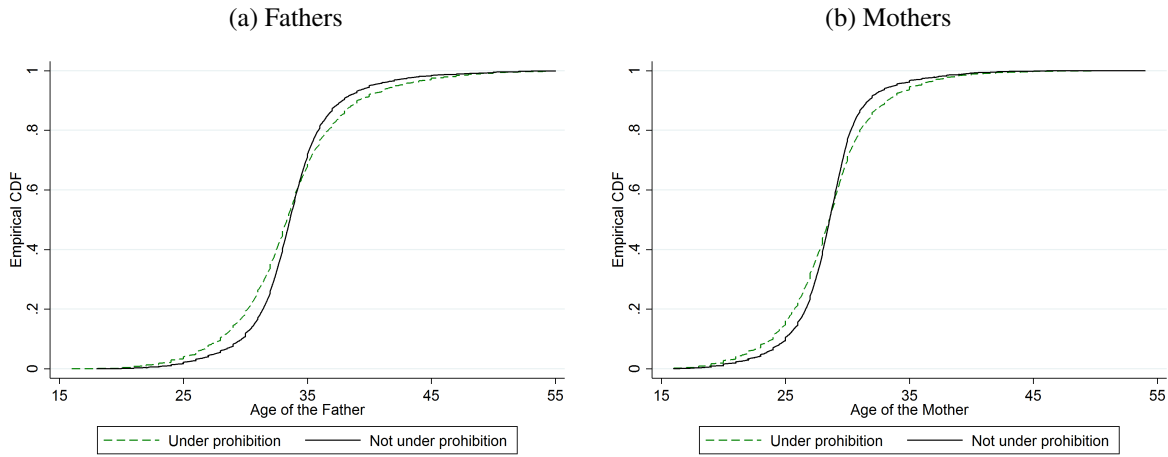
Note: This set of figures show the empirical distributions of age of parents under versus not under prohibition.

Figure 5: The Impact of Local Prohibition on the Alcohol Industry
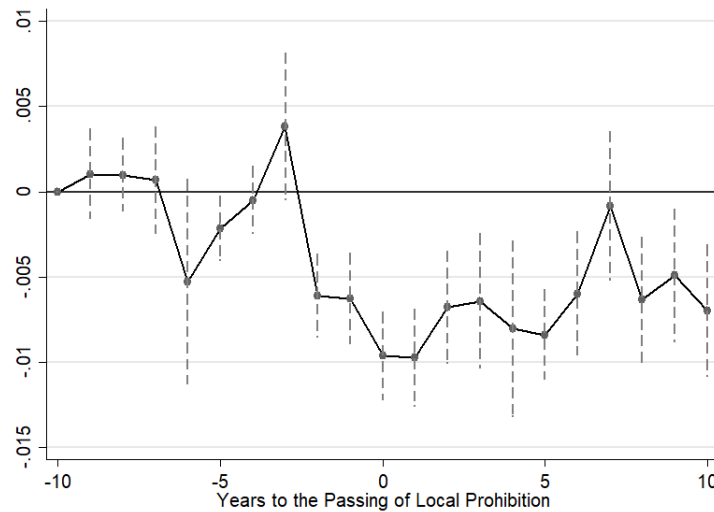
Note: The figure shows the event time analysis of the impact of alcohol prohibition on the size of the Alcohol Industry in a decade leading and after the local law's year of passing. The size of the alcohol industry is defined as the total number of individuals working in industries pertain to the production, trade and retail of alcohol identifiable in the census. The coefficient 10 years prior to the passing of the law is normalized to zero.

Figure 6: The Impact of Prohibition on Characteristics of Parents, the Selection Effect

(a) Mother SEI

(b) Father SEI

(c) Mother Married

(d) Teen Mothers
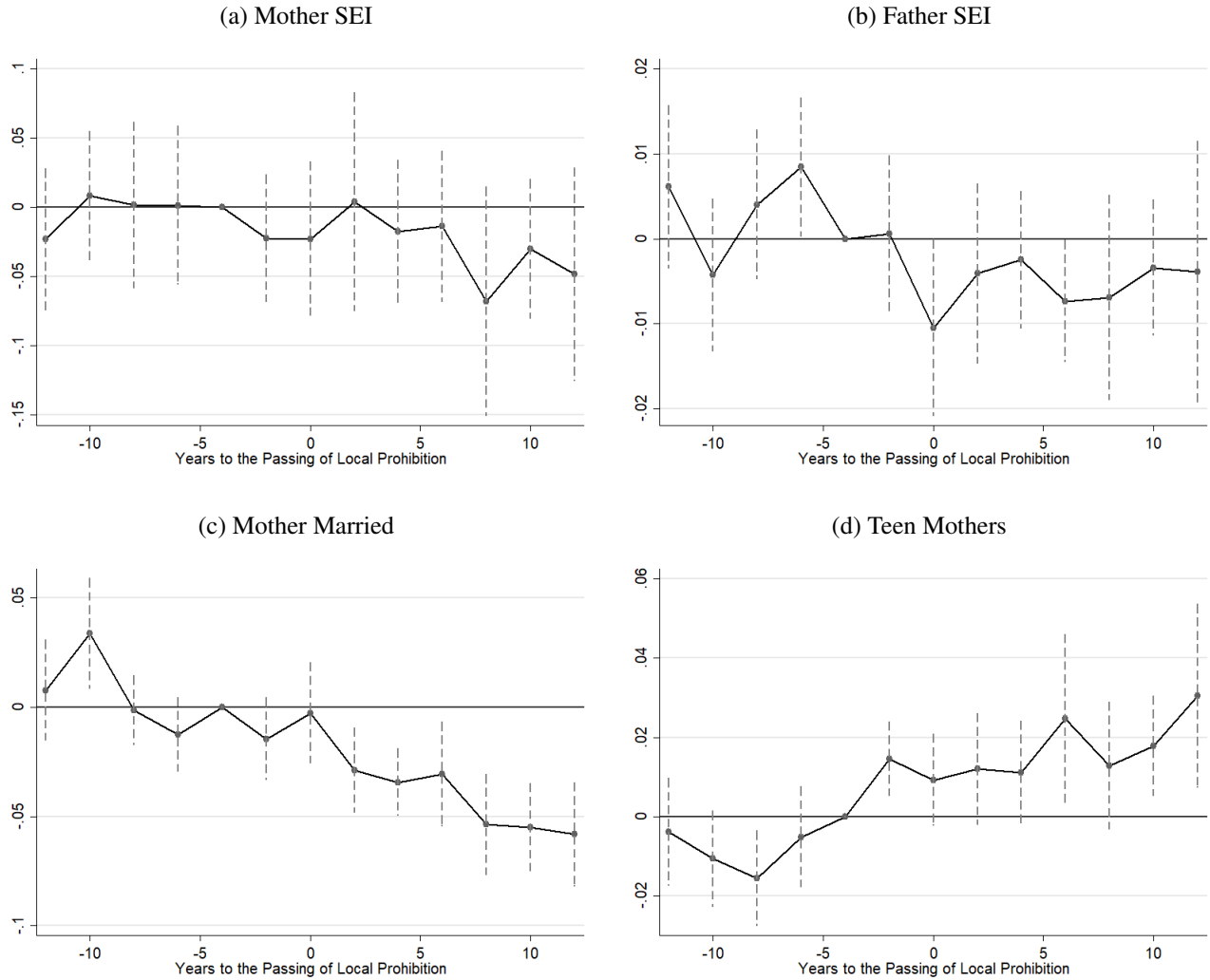
Note: The figure shows the event time analysis of the effect of alcohol prohibition on parental characteristics in more than a decade leading and after the local law's year of passing. Each point estimate in year t indicates two consecutive years t and t+1. The specification of each regression follows Table 1 column 2. The coefficient 3 and 4 years prior to the passing of the law is normalized to zero.

Figure 7: The Impact of Prohibition on Alcohol Industry, by State Alcohol Production

(a) Working-age Adults

(b) New Parents
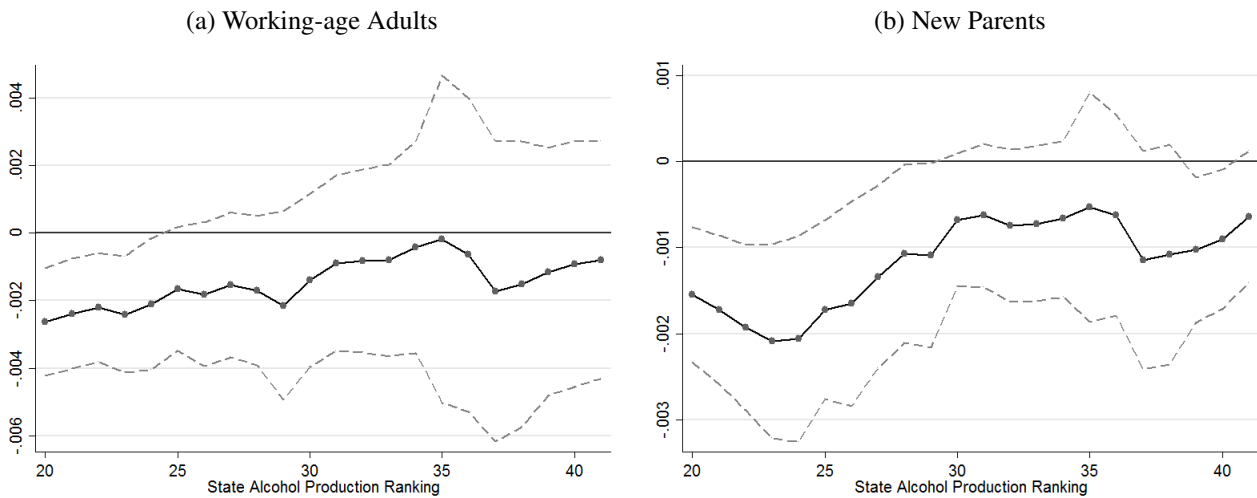
Note: The figure reports the same specification captured by the last column of Table 3, but each point is estimated with data from the 20 states that ranked higher in alcohol production than the number indicated on the x-axis (ie. the results corresponded to 20 on the x-axis uses states that ranked 1 through 20). The outcome variable is the number of males in the profession of alcohol production, retail and trade. The state alcohol production ranking is based on the number of barrels produced in the year 1876 reported in The Register of United States Breweries 1876-1976 (Friedrich and Bull, 1976). The earliest production level available was used to reduce the endogeneity of production to prohibition status.

Table 1: Estimated Effects of Prohibition on the Socioeconomic Outcomes by Gender

	Enrolled in School 1880-1920		Literacy 1880-1920		Home Ownership 1900-1920		SEI 1880-1920	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Males								
Prohib* New Parents		-0.022***		-0.010***		-0.023***		-0.003**
		(0.002)		(0.003)		(0.004)		(0.001)
Prohibition	0.008***	0.011***	0.011***	0.013***	0.003	0.007*	0.003*	0.004**
	(0.001)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	38741	38741	38741	38741	27271	27271	38605	38605
R^2	0.526	0.536	0.784	0.784	0.796	0.797	0.860	0.860
F_test		0.00		0.28		0.01		0.90
Panel B: Females								
Prohib* New Parents		-0.016***		-0.000		-0.014***		-0.041***
		(0.001)		(0.003)		(0.005)		(0.008)
Prohibition	0.005***	0.008***	0.009***	0.009***	0.000	0.003	-0.003	0.002
	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
Observations	38858	38858	38858	38858	27397	27397	25977	25977
R^2	0.488	0.492	0.802	0.802	0.804	0.804	0.609	0.612
F_test		0.00		0.01		0.08		0.00

Notes: Data are taken from the 1880-1920 censuses. As indicated in the table, some variables are not available in all years. Data are collapsed into cells based on parenthood, gender, race, county, year. The general adult sample consists of individuals aged 16 to 55, while the parent subsample is further restricted to those who have a child younger than one at the time they were observed. I eliminate residents of AK, DC, HI, ME and OK. The regressions include county-by-year race composition, cell-level controls of percent urban metropolitan, and farm population, age, marital status, race dummies, county dummies, year dummies, and state time trends. Education quality and suffrage status variables are also included. Each cell is weighted by the total number of individuals it represented. Standard errors are clustered by state. The p-values of Wald tests of the total effect of prohibition and prohibition*new parent are reported on the bottom of each panel. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 2: Estimated Effects of Prohibition on Demographic Characteristics by Gender

	Female						Male		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$<= 20$	$20 - 30$	$>= 30$	Married	Total Births	%Survive	$<= 20$	$20 - 30$	$>= 30$
	1880-1920	1880-1920	1880-1920	1880-1920	1900-1910	1900-1910	1880-1920	1880-1920	1880-1920
Prohib* New Parents	0.020***	0.010**	-0.033***	-0.042***	-0.050	-0.003**	0.010***	0.031***	-0.045***
	(0.003)	(0.004)	(0.005)	(0.004)	(0.031)	(0.001)	(0.002)	(0.005)	(0.006)
Prohibition	-0.006***	0.002	0.004	0.012***	0.077*	-0.004	-0.003	-0.014***	0.017***
	(0.002)	(0.003)	(0.003)	(0.003)	(0.041)	(0.003)	(0.002)	(0.004)	(0.004)
Observations	38858	38858	38858	38858	18245	18197	38741	38741	38741
R^2	0.438	0.592	0.428	0.824	0.641	0.637	0.673	0.325	0.370
F_test	0.00	0.01	0.00	0.00	0.63	0.02	0.00	0.02	0.00

Notes:Data are taken from the 1880-1920 censuses, with the exception of total births and %survive which are only available in 1900 and 1910. Data are collapsed into cells based on parenthood, gender, race, county, and year. The general adult sample consists of individuals aged 16 to 55, while the parent subsample is further restricted to those who have a child younger than one at the time they were observed. I eliminate residents of AK, DC, HI, ME and OK. The regressions include county-by-year race composition, cell-level controls of percent urban metropolitan, and farm population, race dummies, county dummies, year dummies, and state time trends. Education quality and suffrage status variables are also included. Age and marriage are controlled in columns 4 and 5. Each cell is weighted by the total number of individuals it represented. Standard errors are clustered by state. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 3: The Labor Force Decisions of Men as a Result of Prohibition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Alcohol Industry								
Prohib* New Parents		-0.001**		-0.001**		-0.001**		-0.001**
		(0.001)		(0.001)		(0.001)		(0.001)
Prohibition	-0.005***	-0.005***	-0.004***	-0.004***	-0.006***	-0.006***	-0.006***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	38574	38574	38574	38574	38574	38574	38574	38574
R^2	0.359	0.360	0.397	0.397	0.420	0.420	0.543	0.543
Panel B: Restaurants and Bars								
Prohib* New Parents		-0.000		0.000		0.000		0.001
		(0.001)		(0.001)		(0.001)		(0.001)
Prohibition	-0.006***	-0.006***	-0.005***	-0.005***	-0.007***	-0.007***	-0.006***	-0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	38574	38574	38574	38574	38574	38574	38574	38574
R^2	0.263	0.263	0.293	0.293	0.301	0.301	0.410	0.410
Panel C: Transportation Industry								
Prohib* New Parents		0.000		0.002		0.002		0.000
		(0.002)		(0.002)		(0.002)		(0.002)
Prohibition	0.002	0.002	0.001	0.000	-0.004**	-0.004***	-0.004**	-0.004**
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	38741	38741	38741	38741	38741	38741	38741	38741
R^2	0.297	0.297	0.327	0.327	0.336	0.336	0.605	0.605
State	N		Y		Y		Y	
Year	N		N		Y		Y	
County	N		N		Y		Y	
State-linear Trend	N		N		N		Y	

Note: Please refer to the footnote of table 1 for information related to data. The model follows the same specification as the first column in table 1. The industries reported in this table are alcohol (production, retail and trade), restaurant and bar (work or manage), transportation. The county-year cells with less than 5 industry reports were removed to improve accuracy. Each cell is weighted by the total number of individuals it represented. Standard errors are clustered by state. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 4A: Robustness Tests

	Male				Female			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Enrolled in School	Literacy	Home Ownership	SEI	Enrolled in School	Literacy	Home Ownership	SEI
Panel A: +/-10 Years Before and After the Policy Change								
Prohib* New Parents	-0.010***	-0.010***	-0.014***	-0.005***	-0.007***	-0.003*	-0.008**	-0.028**
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.004)	(0.011)
Prohibition	0.007***	0.006	0.013**	0.006***	0.003	0.008*	0.007	0.009
	(0.002)	(0.004)	(0.006)	(0.002)	(0.003)	(0.004)	(0.005)	(0.006)
Observations	21159	21159	18695	21096	21257	21257	18789	14155
R^2	0.576	0.780	0.813	0.868	0.511	0.800	0.819	0.681
F_test	0.28	0.30	0.89	0.70	0.17	0.30	0.83	0.10
Panel B: +/-5 Years Before and After the Policy Change								
Prohib* New Parents	-0.001	-0.021***	-0.007	-0.010***	0.002	-0.030***	-0.003	-0.012
	(0.004)	(0.006)	(0.008)	(0.004)	(0.004)	(0.009)	(0.009)	(0.015)
Prohibition	-0.004	-0.004	0.011	0.008*	0.000	0.007	0.004	0.001
	(0.004)	(0.008)	(0.012)	(0.004)	(0.005)	(0.007)	(0.016)	(0.009)
Observations	12917	12917	11974	12884	13026	13026	12081	8571
R^2	0.656	0.778	0.821	0.886	0.596	0.793	0.826	0.784
F_test	0.31	0.01	0.79	0.68	0.68	0.04	0.96	0.46

Table 4B: Robustness Tests, Continued

	Male				Female			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Enrolled in School	Literacy	Home Ownership	SEI	Enrolled in School	Literacy	Home Ownership	SEI
Panel C: Remove Counties with Low Occupation Reporting								
Prohib* New Parents	-0.022***	-0.010***	-0.023***	-0.003**	-0.013***	-0.004	-0.011**	-0.038***
	(0.002)	(0.003)	(0.004)	(0.001)	(0.002)	(0.004)	(0.005)	(0.009)
Prohibition	0.011***	0.013***	0.007	0.003**	0.008***	0.010**	0.001	0.003
	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.004)	(0.004)	(0.003)
Observations	33606	33606	23540	33578	24712	24712	17061	19658
R^2	0.565	0.804	0.816	0.868	0.571	0.847	0.863	0.667
F_test	0.00	0.32	0.01	0.85	0.05	0.12	0.13	0.00
Panel D: Add State-by-Year Fixed Effects								
Prohib* New Parents	-0.022***	-0.010***	-0.023***	-0.003**	-0.016***	-0.000	-0.014***	-0.042***
	(0.002)	(0.003)	(0.004)	(0.001)	(0.001)	(0.003)	(0.005)	(0.008)
Prohibition	0.008***	0.006*	0.009*	0.003	0.005**	0.008**	0.003	-0.004
	(0.002)	(0.003)	(0.005)	(0.002)	(0.002)	(0.004)	(0.004)	(0.005)
Observations	38741	38741	27271	38605	38858	38858	27397	25977
R^2	0.544	0.785	0.798	0.861	0.500	0.804	0.805	0.615
F_test	0.00	0.37	0.01	0.91	0.00	0.07	0.09	0.00

Note: Please refer to the footnote of table 1 for information related to data and specification. Panel A (B) keeps only county-year cells within +/-10 (5) years of the prohibition law's passing. Panel C keeps county-year cells with more than 5 occupation repostings. Panel D adds state-by-year fixed effects to preferred specification. The test statistic reported on the bottom of each panel are the p-values of joint significance tests of prohibition and prohibition*new parent. Each cell is weighted by the total number of individuals it represented. Standard errors are clustered by state. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

A1   Appendix

Figure A1: Age Distribution of Parents in Southern and Non-South States

(a) Southern Fathers   (b) Southern Mothers

(c) Non-south Fathers   (d) Non-south Mothers
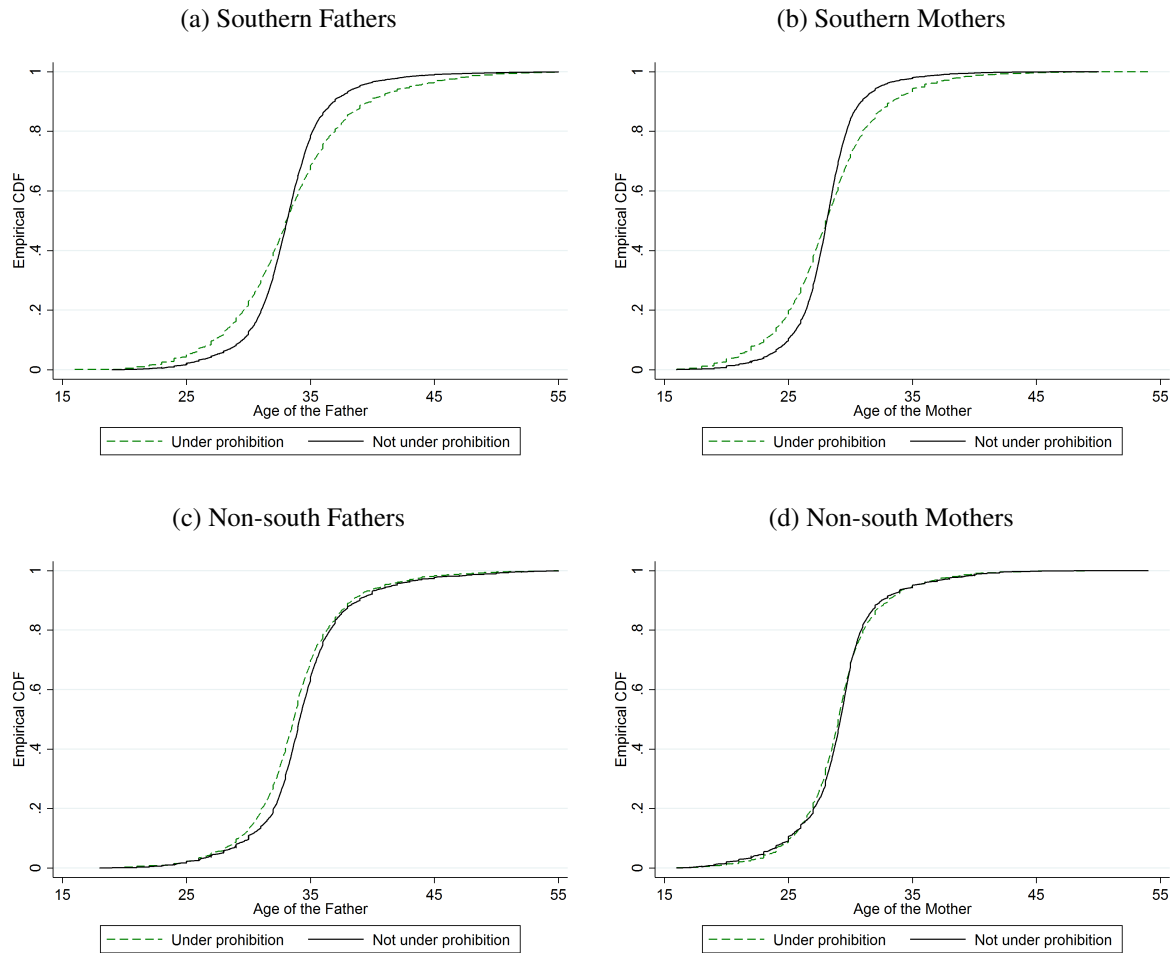
Note: This set of figures shows the changes in age distribution of parents in southern and non-south states. The figures are based on real distributions of the age of parents under or not under prohibition. The parents not under prohibition are in solid lines, while parents under prohibition laws are in dashed lines.

Figure A2: Temporal Impact of Prohibition on Fathers – Sobering Effect

(a) In School

(b) Literacy

(c) Homeownership

(d) SEI
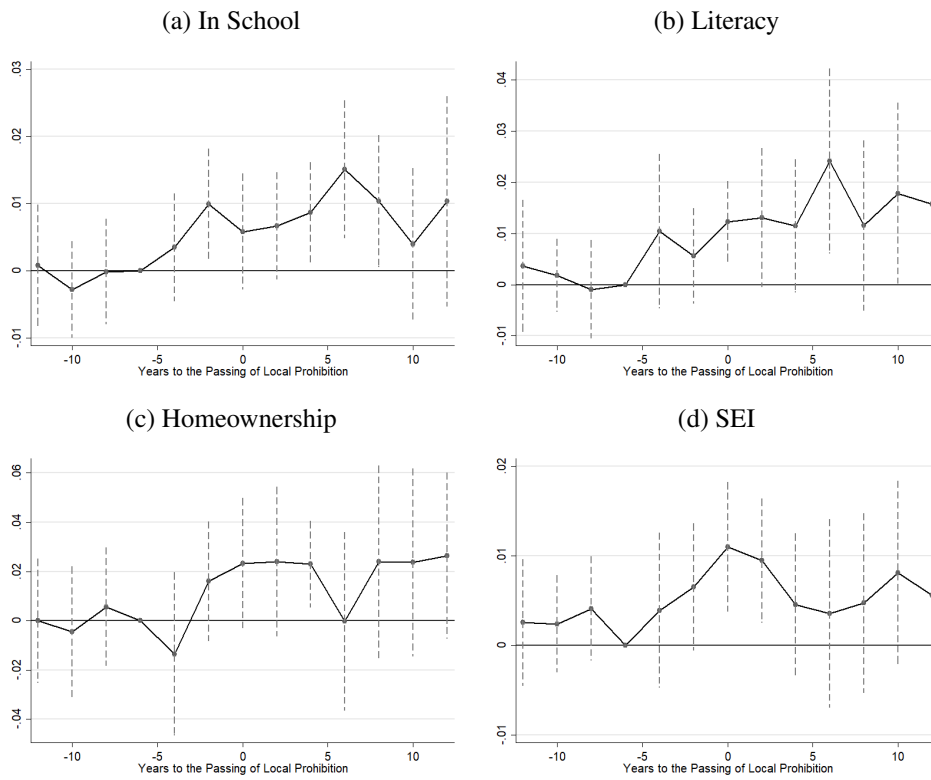
Figure A3: Temporal Impact of Prohibition on Fathers – Selection Effect

(a) In School

(b) Literacy

(c) Homeownership

(d) SEI
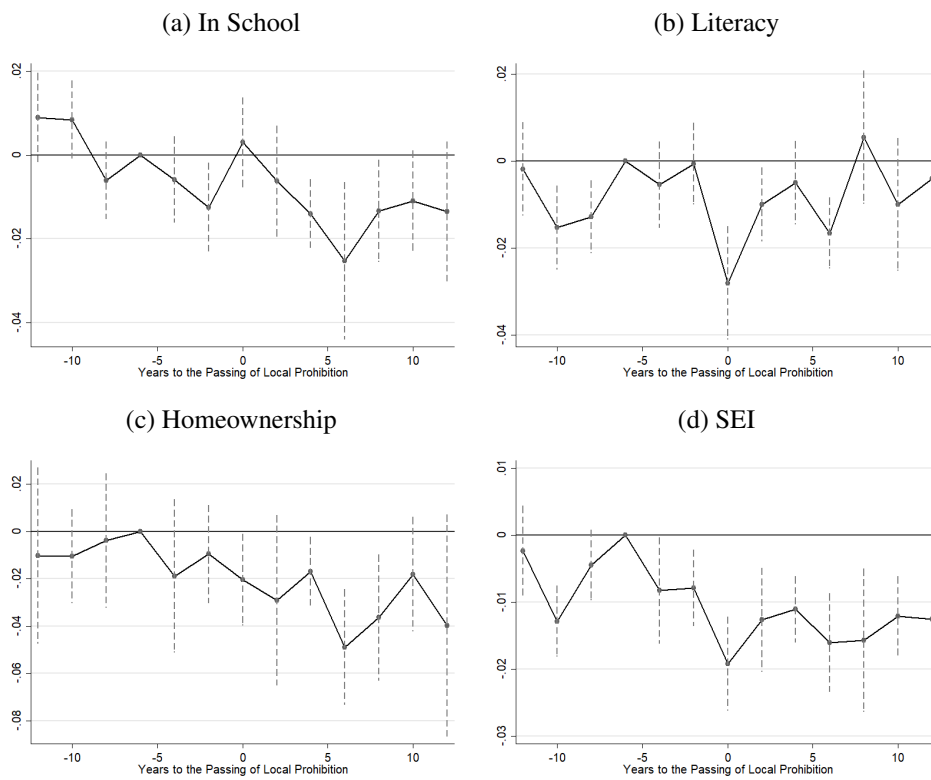
Figure A4: Temporal Impact of Prohibition on Mothers – Sobering Effect

(a) In School

(b) Literacy

(c) Homeownership

(d) SEI

(e) Married

(f) Age<= 20

(g) Age>= 30

(h) Total Births
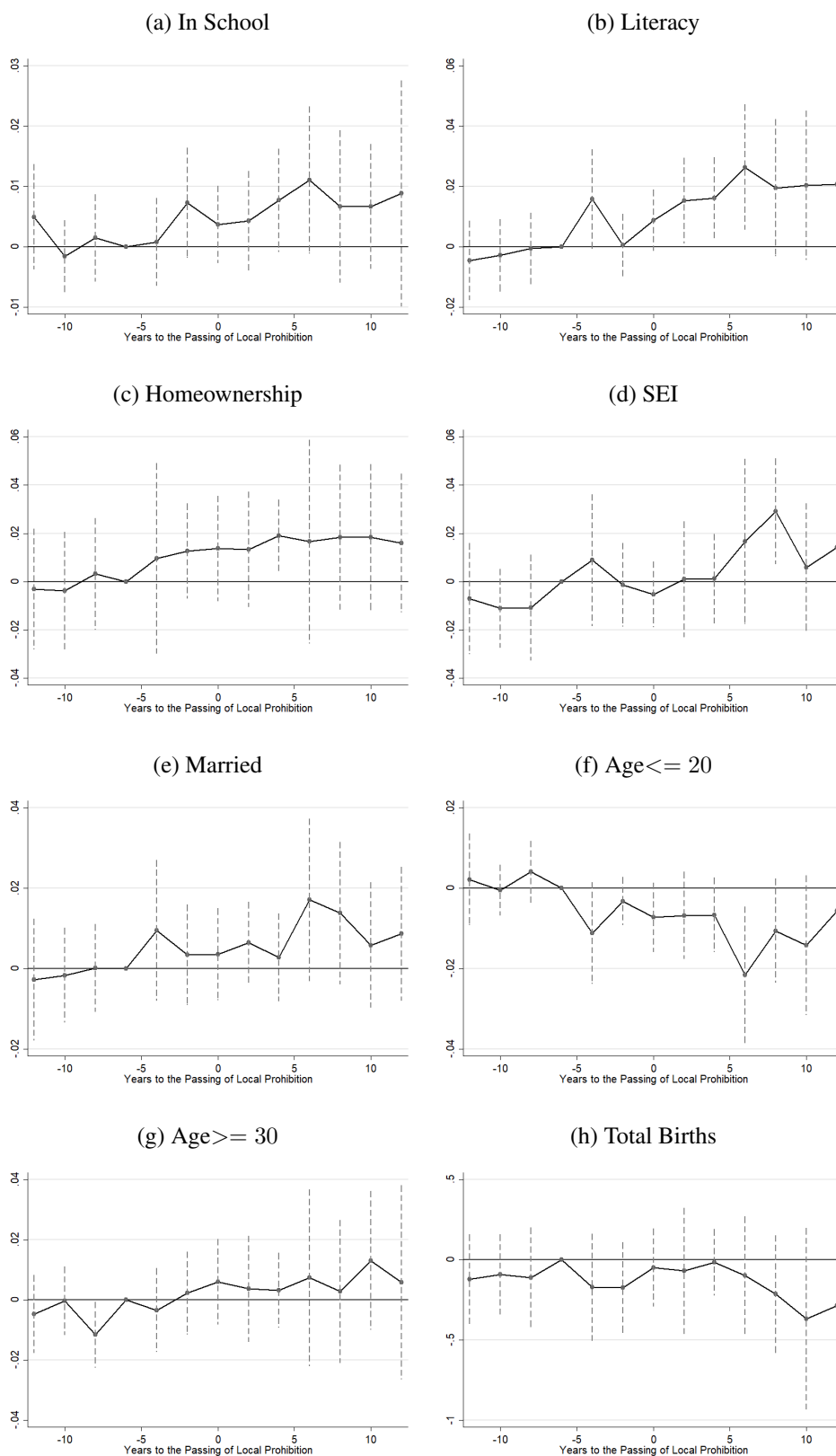
Figure A5: Temporal Impact of Prohibition on Mothers – Selection Effect

(a) In School

(b) Literacy (No mean effect)

(c) Homeownership

(d) SEI

(e) Married

(f) Age<= 20

(g) Age>= 30

(h) Total Births (no mean effect)
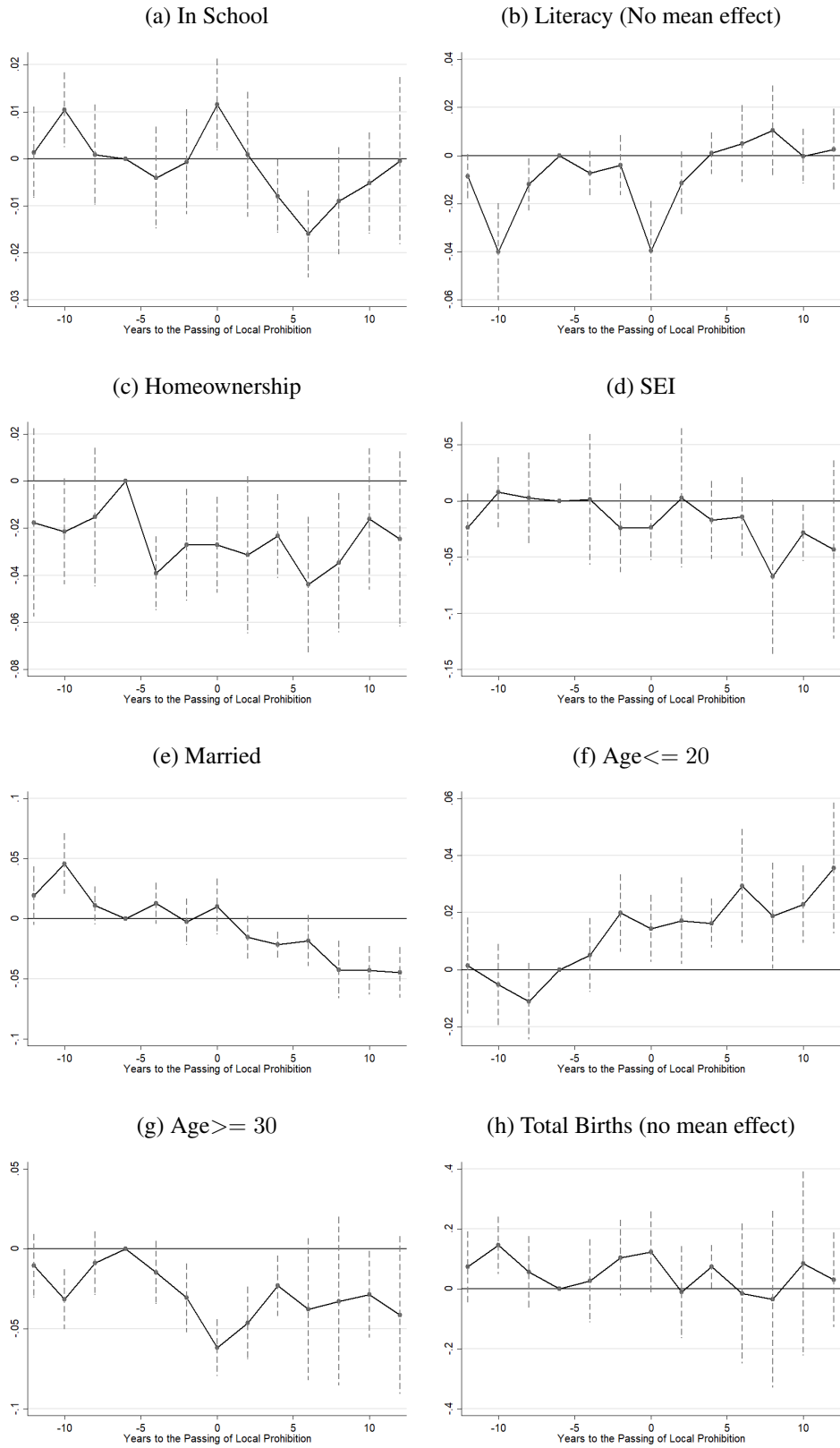
Table A1: Demographic Characteristics

	Female						Male		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<= 20	20 − 30	>= 30	Married	Total Births	%Survive	<= 20	20 − 30	>= 30
	1880-1920	1880-1920	1880-1920	1880-1920	1900-1910	1900-1910	1880-1920	1880-1920	1880-1920
Panel A. Southern States, Age 16-55									
Prohib* New Parents	0.015***	-0.002	-0.017**	-0.032***	0.036	-0.004**	0.009***	0.021***	-0.034***
	(0.004)	(0.004)	(0.007)	(0.007)	(0.026)	(0.002)	(0.003)	(0.007)	(0.008)
Prohibition	-0.003	0.002	0.000	0.011***	-0.018	-0.003	-0.001	-0.010*	0.010**
	(0.002)	(0.005)	(0.004)	(0.003)	(0.066)	(0.004)	(0.003)	(0.006)	(0.005)
Observations	21923	21923	21923	21923	10192	10175	21614	21614	21614
R^2	0.244	0.428	0.297	0.702	0.465	0.538	0.550	0.266	0.262
F_test	0.01	0.91	0.05	0.01	0.82	0.08	0.02	0.21	0.01
Panel B. Non-South States, Age 16-55									
Prohib* New Parents	0.018***	0.023***	-0.043***	-0.040***	0.022	-0.006**	0.015***	0.034***	-0.053***
	(0.003)	(0.004)	(0.005)	(0.005)	(0.052)	(0.002)	(0.003)	(0.006)	(0.008)
Prohibition	-0.009***	-0.003	0.012**	0.007	0.145***	-0.004	-0.002	-0.019***	0.020**
	(0.003)	(0.002)	(0.005)	(0.005)	(0.035)	(0.003)	(0.003)	(0.004)	(0.007)
Observations	16935	16935	16935	16935	8053	8022	17127	17127	17127
R^2	0.577	0.708	0.475	0.893	0.675	0.705	0.775	0.367	0.403
F_test	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.05	0.00

Notes: Data are taken from the 1880-1920 censuses, with the exception of total births and %survive which are only available in 1900 and 1910. Data are collapsed into cells based on parenthood, gender, race, county, and year. The general adult sample consists of individuals aged 16 to 55, while the parent subsample is further restricted to those who have a child younger than one at the time they were observed. I eliminate residents of AK, DC, HI, ME and OK. The regressions include county-by-year race composition, cell-level controls of percent urban metropolitan, and farm population, race dummies, county dummies, year dummies, and state time trends. Education quality and suffrage status variables are also included. Age and marriage are controlled in columns 4 and 5. Each cell is weighted by the total number of individuals it represented. Standard errors are clustered by state. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table A2: Summary Statistics for Working-age Female

	Obs	Mean	Std	Min	Max
Year	21180	1905.835	13.67	1880.00	1920.00
%white in the county	21180	0.882	0.20	0.00	1.00
%metropolitan population in the county	21180	0.349	0.48	0.00	1.00
%farm labor in the county	21180	0.339	0.28	0.00	1.00
%urban population	21180	0.436	0.37	0.00	1.00
Prohibition	21180	0.445	0.50	0.00	1.00
Age	21180	32.269	1.60	16.00	55.00
White	21180	0.881	0.32	0.00	1.00
Married	21180	0.673	0.08	0.00	1.00
Literate	21180	0.893	0.17	0.00	1.00
Enrolled in school	21180	0.053	0.04	0.00	1.00
Alcohol Industry	18009	0.001	0.00	0.00	1.00
Social Economic Index	18024	0.286	0.11	0.04	0.97
Homeownership (1900-1920)	15078	0.465	0.19	0.00	1.00
Total births (1900-1910)	9779	4.042	0.73	1.00	16.00
Percent births survived (1900-1910)	9733	0.860	0.04	0.10	1.00

Notes: Data are taken from the 1880-1920 censuses. As indicated in the parenthesis, some variables are not available for all years. Data are collapsed into cells based on parenthood, gender, race, county, and year. The sample consists of individuals aged 15 to 55. I eliminate residents of AK, DC, HI, ME, and OK. Each cell is weighted by the total number of individuals represented by the cell.

Table A3: Summary Statistics for Working-age Male

	Obs	Mean	Std	Min	Max
Year	21419	1905.848	13.62	1880.00	1920.00
%white in the county	21419	0.885	0.19	0.00	1.00
%metropolitan population in the county	21419	0.341	0.47	0.00	1.00
%farm labor in the county	21419	0.357	0.29	0.00	1.00
%urban population	21419	0.417	0.37	0.00	1.00
Prohibition	21419	0.443	0.50	0.00	1.00
Age	21419	33.008	1.63	16.00	55.00
White	21419	0.887	0.32	0.00	1.00
Married	21419	0.619	0.08	0.00	1.00
Literate	21419	0.901	0.15	0.00	1.00
Enrolled in school	21419	0.050	0.04	0.00	1.00
Alcohol Industry	21327	0.008	0.01	0.00	1.00
Restaurant and Bar Industry	21327	0.015	0.02	0.00	2.00
Transportation Industry	21419	0.067	0.06	0.00	1.00
Social Economic Index	21336	0.245	0.08	0.04	0.96
Homeownership (1900-1920)	15195	0.447	0.19	0.00	1.00

Notes: Data are taken from the 1880-1920 censuses. As indicated in the parenthesis, some variables are not available for all years. Data are collapsed into cells based on parenthood, gender, race, county, and year. The sample consists of individuals aged 15 to 55. I eliminate residents of AK, DC, HI, ME, and OK. Each cell is weighted by the total number of individuals represented by the cell.

Table A4: Summary Statistics for New Mothers

	Obs	Mean	Std	Min	Max
Year	17678	1906.623	12.07	1880.00	1920.00
%white in the county	17678	0.889	0.19	0.00	1.00
%metropolitan population in the county	17678	0.317	0.47	0.00	1.00
%farm labor in the county	17678	0.379	0.32	0.00	1.00
%urban population	17678	0.379	0.37	0.00	1.00
Prohibition	17678	0.421	0.49	0.00	1.00
Age	17678	28.953	1.93	16.00	54.00
White	17678	0.902	0.30	0.00	1.00
Married	17678	0.979	0.05	0.00	1.00
Literate	17678	0.882	0.16	0.00	1.00
Enrolled in school	17678	0.015	0.04	0.00	1.00
Alcohol Industry	7951	0.003	0.03	0.00	1.00
Social Economic Index	7953	0.226	0.14	0.04	1.00
Homeownership (1900-1920)	12319	0.364	0.21	0.00	1.00
Total births (1900-1910)	8466	3.856	0.84	1.00	18.00
Percent births survived (1900-1910)	8464	0.905	0.05	0.09	1.00

Notes: Data are taken from the 1880-1920 censuses. As indicated in the parenthesis, some variables are not available for all years. Data are collapsed into cells based on parenthood, gender, race, county, and year. The sample consists of individuals aged 15 to 55, and is further restricted to those who have a child younger than one at the time they were observed. I eliminate residents of AK, DC, HI, ME, and OK. Each cell is weighted by the total number of individuals represented by the cell.

Table A5: Summary Statistics for New Fathers

	Obs	Mean	Std	Min	Max
Year	17322	1906.684	11.99	1880.00	1920.00
%white in the county	17322	0.893	0.18	0.00	1.00
%metropolitan population in the county	17322	0.323	0.47	0.00	1.00
%farm labor in the county	17322	0.378	0.32	0.00	1.00
%urban population	17322	0.383	0.37	0.00	1.00
Prohibition	17322	0.419	0.49	0.00	1.00
Age	17322	33.457	2.31	16.00	55.00
White	17322	0.911	0.28	0.00	1.00
Married	17322	0.995	0.02	0.00	1.00
Literate	17322	0.894	0.15	0.00	1.00
Enrolled in school	17322	0.003	0.02	0.00	1.00
Alcohol Industry	17247	0.008	0.02	0.00	1.00
Restaurant and Bar Industry	17247	0.013	0.03	0.00	2.00
Transportation Industry	17322	0.071	0.08	0.00	1.00
Social Economic Index	17269	0.235	0.08	0.03	0.97
Homeownership (1900-1920)	12076	0.361	0.21	0.00	1.00

Notes: Data are taken from the 1880-1920 censuses. As indicated in the parenthesis, some variables are not available for all years. Data are collapsed into cells based on parenthood, gender, race, county, and year. The sample consists of individuals aged 15 to 55, and is further restricted to those who have a child younger than one at the time they were observed. I eliminate residents of AK, DC, HI, ME, and OK. Each cell is weighted by the total number of individuals represented by the cell.

Table A6: The Impact of Prohibition on Socioeconomic Outcomes,
by Black and White Subsample

	In School 1880-1920		Literacy 1880-1920		Home Ownership 1900-1920		SEI 1880-1920	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: White Males								
Prohib* New Parents		-0.022***		-0.007***		-0.025***		-0.003*
		(0.002)		(0.003)		(0.004)		(0.002)
Prohibition	0.009***	0.013***	0.007***	0.008***	0.003	0.008*	0.002	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)	(0.002)	(0.001)
Observations	20669	20669	20669	20669	15851	15851	20664	20664
R^2	0.617	0.629	0.739	0.739	0.847	0.848	0.883	0.884
F_test		0.00		0.81		0.01		0.96
Panel B: White Females								
Prohib* New Parents		-0.017***		-0.000		-0.018***		-0.052***
		(0.002)		(0.003)		(0.005)		(0.010)
Prohibition	0.007***	0.010***	0.006***	0.006**	0.001	0.004	-0.007**	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)	(0.005)	(0.004)	(0.004)
Observations	20657	20657	20657	20657	15861	15861	13803	13803
R^2	0.579	0.584	0.785	0.785	0.853	0.853	0.537	0.542
F_test		0.01		0.03		0.03		0.00
Panel C: Black Males								
Prohib* New Parents		-0.026***		0.012*		-0.017***		-0.005**
		(0.002)		(0.006)		(0.006)		(0.002)
Prohibition	0.001	0.005*	-0.001	-0.003	0.007	0.009	0.001	0.001
	(0.003)	(0.003)	(0.007)	(0.007)	(0.011)	(0.011)	(0.001)	(0.002)
Observations	10715	10715	10715	10715	7289	7289	10672	10672
R^2	0.421	0.431	0.802	0.802	0.678	0.678	0.491	0.491
F_test		0.00		0.20		0.49		0.07
Panel D: Black Females								
Prohib* New Parents		-0.018***		0.028***		-0.014		-0.002
		(0.003)		(0.010)		(0.009)		(0.004)
Prohibition	-0.002	0.000	-0.003	-0.007	0.005	0.008	-0.002	-0.002
	(0.004)	(0.004)	(0.013)	(0.012)	(0.010)	(0.010)	(0.005)	(0.005)
Observations	10604	10604	10604	10604	7254	7254	7771	7771
R^2	0.446	0.449	0.853	0.854	0.697	0.697	0.476	0.476
F_test		0.00		0.22		0.55		0.50

Note: Please refer to the footnote of Table 2. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.