Persistence in Industrial Policy Impacts: Evidence from Depression-Era Mississippi

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Abstract

This paper studies the effects of a large-scale industrial policy implemented in 1930s Mississippi on contemporaneous and modern-day labor market outcomes. Attracted by unprecedented government incentives under Mississippi's Balance Agriculture with Industry (BAWI) Program, 13 large manufacturing plants located in the state between 1936 and 1940. Using difference-in-differences and synthetic control matching techniques, I estimate that counties that received these plants experienced an over 15% increase in female labor force participation on average in the short run. Moreover, these effects persisted decades into the future, well after many of the original companies ceased operations in Mississippi. I also find suggestive evidence of an increase in educational attainment among women in counties where BAWI investment occurred. The results highlight the potential for even transitory government interventions to have long-lived effects on labor markets.

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1. Introduction

There is a long history in the U.S. of federal, state, and local governments intervening in private markets with the goal of promoting economic development. However, much of what we know about if and how these programs affect local areas is based on analyses of programs implemented in the past several decades. With few exceptions, we understand little about the extent to which industrial policies have long-lasting impacts on communities, much less whether those impacts might evolve and interact with more deep-seated social and cultural norms within regions.

This paper studies the effects of a large-scale industrial policy implemented in Mississippi during the 1930s on contemporaneous and modern-day labor market outcomes. Prompted by generally poor economic conditions as well as a desire to wean the state's economy off agriculture, Mississippi undertook a new and unprecedented initiative in 1936 aimed at attracting manufacturing operations to the state. Under Mississippi's Balance Agriculture with Industry (BAWI) Program, the first systematic state-sponsored program aimed explicitly at attracting businesses using government subsidies, cities and counties could use money raised through publicly issued bonds to purchase land, build or acquire manufacturing facilities, and lease those facilities at low cost to private companies. BAWI paved the way for many subsequent state and local economic development programs, and more broadly contributed to increasingly intense interstate competition for industry in the years following World War II.

Attracted by BAWI's benefits, 13 large manufacturing plants, primarily in low-skilled textile industries, located in communities across Mississippi between 1936 and 1940. Using difference-in-differences and synthetic control matching techniques, I estimate that counties in which these plants located experienced an over 15% increase in female labor force participation rates on average in the short run. Moreover, the effects on female labor force participation persisted decades into the future, well after many of the original BAWI companies ceased operations in Mississippi. This persistence is particularly pronounced in communities that received the largest plants that employed the most women. Although there were no detectable effects of BAWI investment on marriage or childbearing rates, there is some evidence that female educational attainment also rose in communities where BAWI investment occurred. Overall, these findings point to the potential for even transitory government interventions to have long-lived effects on labor market conditions. They also highlight how, in addition to their direct effects of employment and capital markets,

such interventions may have impacts that operate more subtly by influencing social and cultural norms and expectations within regions.

The results of this paper relate to several streams of research. First, they contribute to a growing literature in urban economics and public finance on government interventions aimed at improving economic conditions in disadvantaged areas. Local economic development policies have garnered increasing attention in recent years as they have proliferated throughout the U.S and abroad. However, there remains substantial controversy over if and how such policies benefit communities (Glaeser and Gottlieb 2008). Partly because most studies focus on relatively recently enacted initiatives such as state enterprise zone programs, there is also scant evidence on whether these policies have long-lasting effects (Neumark and Simpson 2015).[1] The efficacy of industrial policies in generating durable gains in targeted areas is of substantial policy import in general, but Mississippi's efforts to attract manufacturing to historically agricultural regions in the 1930s have particular relevance in the present for countries such as China and India, whose governments have more recently embarked on local economic development initiatives aimed at diversifying and modernizing the economies of rural areas and where women participate at much lower rates than men in formal labor markets (Mills 2003, Rodrik 2004, Zheng et al. 2015).

This paper also relates to an expanding body of work in economic geography and history that considers persistence in the effects of transitory local shocks and long-obsolete natural advantages. A number of recent papers, such as Davis and Weinstein (2002), Miguel and Roland (2011), Bleakley and Lin (2012), Hanlon (2014), and Siodla (2015), study the extent to which historical events and phenomena have lingering economic import in the present. This paper is among the first, however, to consider how economic development policies from the distant past have lasting impacts, and specifically how such government interventions could interact with social conventions to give rise to persistence in their effects.

Finally, this paper contributes to the literature in labor economics on the sources of changes in labor force participation among different populations. In the U.S., there have been dramatic increases in labor force participation among women over the past century; only about one quarter of working-age women were in the labor force in 1930, compared to close to 60% in the present.

[1] One exception is Kline and Moretti's (2015) examination of the long-term impacts of the Tennessee Valley Authority. They find gains in agricultural employment that are limited to the time period during which subsidies were provided, but gains in manufacturing employment that persisted long after the subsidies lapsed. They attribute the latter gains to agglomeration economies in manufacturing.

This increase was likely driven both by supply-side factors that affected women's reservation wages as well as demand-side factors that increased the compensation women could receive in the labor market (Juhn and Potter 2006). A large body of research has considered the effects of interventions affecting the supply side, including numerous studies that explore the impacts on female labor force participation of changes in the generosity of benefits under different government social insurance and transfer programs (e.g., Dickert et al. 1995, Ellwood 2001). However, few have examined how demand-side interventions might influence labor force participation, much less whether any effects persist after the intervention ends.

There are several channels by which the labor market impacts of a transitory demand-side intervention like Mississippi's BAWI Program, and specifically the effects on women's participation in the labor force, might persist over time. A key mechanism could be the intergenerational transfer of norms and expectations regarding the acceptability and desirability of female employment. Fernandez et al. (2004) use the shock to female labor force participation induced by World War II to show that men whose mothers worked are more likely to have wives that work as well. This type of propagation mechanism could be at work in the context of BAWI, which also induced a shock to female labor force participation, but one that varied across geography in a quasi-exogenous manner. Fogli and Veldkamp (2011) also find heterogeneity across locations and over time in female labor force participation that is consistent with the gradual diffusion of information about the long-run payoffs associated with mothers' working in the market relative to working at home. In a developing country context, Dhar et al. (2015) find evidence in India that parents' discriminatory views are transmitted to children and affect not only children's attitudes toward others, but also their own educational aspirations.[2] To the extent that the employment opportunities afforded to women by BAWI not only affected contemporaneous attitudes about females and work in the formal labor market, but also shaped the expectations of children in affected communities, the program's impacts could persist over generations.[3]

[2] Farre and Vella (2013) find similar results in the U.S. and highlight how the intergenerational transmission of gender role attitudes plays a role in the persistence of economic status over time through its effects on the labor force participation decisions of women. Fernandez (2013) outlines a theoretical model illustrating this mechanism and presents aggregate evidence of its quantitative importance.

[3] Theoretically, wealth effects associated with having a dual earner household could affect descendants' decisions to work. However, if leisure is a normal good, such wealth effects would depress descendants' labor supply. Additionally, Bleakley and Ferrie (2013) find little evidence of wealth effects for the descendants of individuals awarded land quasi-randomly in early nineteenth-century Georgia.

The paper proceeds as follows. The next section describes Mississippi's BAWI Program. In Section 3, I discuss the data I compile to examine changes in labor market conditions over the past century across counties in Mississippi and provide basic descriptive statistics. The empirical analysis, including the difference-in-differences estimates as well as the synthetic control matching results together with a number of robustness tests, appear in Section 4. Section 5 concludes.

2. The Balance Agriculture with Industry Program

In the early 1930s, Mississippi's economy, like that of most states in the country at the time, was struggling. The state was heavily dependent on its agriculture industry, which was particularly hard hit during the Great Depression. Between 1929 and 1933, farm income in Mississippi fell by over 60% (Lester 2008). Between 1932 and 1936, about a quarter of all Mississippi farms, or about 40,000 farms, were sold to pay taxes, and the state acquired approximately 400,000 acres of land (Hudson and Edwards 2000). The dire economic situation fomented concern among residents and their elected officials about the long-term prospects of a state so heavily reliant on income from agriculture.

After winning the governor's office in 1935, Hugh L. White proposed the BAWI Program to the Mississippi Legislature. As Hopkins (1944) noted in a description of the program published in a Federal Reserve Bank of Atlanta report, "the immediate purpose of this system was to relieve an emergency of unemployment, serious in Mississippi at the time. The long-range purpose was to 'balance agriculture with industry' in a cotton-growing and lumber-producing area…" (1). While the plan was not immediately popular in what was a relatively conservative state, White emphasized in his proposal the principle of "general welfare" and "public interest" in pressing for government intervention. This, coupled with a state economy seemingly on the precipice of collapse, led to a growing acceptance on the part of residents of a larger role for government in the market (Cobb 1982). The BAWI Program was passed in a special legislative session in September 1936 as part of the Mississippi Industrial Act of that year.

The BAWI legislation created a system in which, under the authority of the state government, cities and counties could use money raised through publicly issued bonds to purchase land, build or acquire manufacturing facilities, and lease those facilities at low cost to private companies.[4] To

[4] The legality of BAWI was challenged in 1938 in Albritton v. City of Winona. The Mississippi Supreme Court ruled that BAWI laws were permissible intrusions into private enterprise; in his opinion, Chief Justice Sydney Smith

determine subsidy recipients, an Industrial Commission was created that granted certificates to local governments to issue voter-approved bonds that would authorize land purchases and plant construction.

In addition to the Industrial Commission, the Mississippi Industrial Act created the Mississippi Advertising Commission, which was charged with promoting the BAWI Program as well as the state's other business-friendly attributes (Hopkins 1944, Hudson and Edwards 2000). After an advertising campaign primarily targeted at interests in northern states, the BAWI Industrial Commission received roughly 3,800 initial inquiries about the program.[5] Following a vetting process that favored firms that would immediately create a large number of jobs, the commission narrowed the field to 21 for which communities were authorized to allocate funds raised through publicly issued bonds (Hopkins 1944). Of these, 13 actually established operations in the state. These 13 plants are listed in Table 1.

The plants chosen were generally expansions of well-established firms in other states which were arguably those least in need of financial support (Cobb 1982, Lester 2008). However, their location in Mississippi as opposed to other states was perceived as far from assured; indeed, as Hopkins (1944) argued, the "principal effect of the BAWI system was its influence upon plant location," which he noted led "strong enterprises to locate in what was to all intents and purposes a virgin industrial territory" (37).[6] The particular locations of the plants in Mississippi were selected by the companies after tours of potential sites and meetings with local officials arranged by the Industrial Commission.

The BAWI plants received several types of benefits. First, they received capital subsidies derived from bonds issued by local communities.[7] Communities issued and sold a total of $980,500 in bonds ($17 million in 2015 dollars), which amounted to approximately 7% of 1933 personal

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wrote that "there has been a growing appreciation of public needs and of the necessity of finding ground for a rational compromise between individual rights and public welfare." An appeal to the U.S. Supreme Court was rejected on grounds that it was a state issue.

[5] Labor unions criticized BAWI for its lack of any minimum wage requirement (Lester 2008). However, after the Fair Labor Standards Act was passed in 1938, BAWI plants that were in operation were obliged to raise their wages to meet the minimum.

[6] Quantifying so-called crowd out effects associated with industrial policies is challenging given the general lack of suitable counterfactuals. Examples of studies exploring such effects in the context of recent government place-based programs include Sinai and Waldfogel (2005), Eriksen and Rosenthal (2009), Freedman (2013, 2014), and Freedman and McGavock (2015).

[7] One exception is Amory Garment Co., which declined $50,000 in public money due to concern about its legal implications. However, Amory Garment accepted tax exemptions on its site, building, and equipment (Dickason 1940, Hopkins 1944, Henderson and Shaw 1949).

income in the state. The money from these bonds was used to provide $834,500 in land and buildings and $146,000 in subsequent assistance to BAWI enterprises (Hopkins 1944). Second, they paid relatively low rents on occupied property, which Hopkins (1944) estimated to amount to savings of about $6,000 per plant per year. Several plants paid rents of $5 or less annually for five years or more. Third, BAWI enterprises received a five-year tax exemption on machinery and equipment. Finally, some local communities provided additional support for plants, such as infrastructure improvements and assistance in stymying efforts at unionization.[8]

As economic conditions began to improve and attention shifted to developments abroad, the BAWI Program lapsed in April 1940 (Hopkins 1944, Cobb 1982). Most of the BAWI plants were in operation and in the process of expanding employment at that point.[9] In the years that followed, some of the facilities, such as the Ingalls Shipyard and Armstrong Tire and Rubber, benefited directly from wartime production. However, the 1940s were a strong period for all the plants; according to Hopkins (1944) and Cobb (1982), by mid-1943, the employers that received capital subsidies under BAWI had nearly 13,000 employees (14% of the state's entire manufacturing workforce) and total quarterly wage disbursements of over $7 million (about one-fourth the state's total industrial payroll).[10] The average BAWI plant employed close to 10% of its county's total workforce by 1943.[11]

As Table 1 makes clear, the plants established under BAWI tilted heavily toward low-skilled work, and many BAWI enterprises staffed their plants primarily with women (Cobb 1982, Morris 2011). This was especially true of the four hosiery plants as well as the woolen knitting mill, the chenille firm, the pants producer, and the three shirt factories that were founded under the program.

[8] For example, the City of Natchez provided pavement and grading around the Armstrong Tire and Rubber plant at an estimated cost of $35,000-$50,000 (Davis 2004). In its contract with Grenada Industries, the City of Grenada agreed to "so far as possible prevent any interference from outside sources which may cause or result in labor disputes or trouble…" (Hopkins 1944, p. 41).

[9] As Hopkins (1944) remarked, "The pathway of newly established organizations never is completely smooth, but as far as the BAWI enterprises are concerned, the production story with few exceptions was one of unexpectedly quick attainment of normal operative capacity" (28). This rapid growth made BAWI appear very successful in retrospect, which prompted to the state government to resurrect the program in 1944. However, in later years, the Agricultural and Industrial Board (which replaced the Industrial Commission) forced cities and counties to collect rents high enough to cover the principal and interest on issued bonds, and more generally communities were more aggressive in their bargaining for new plants given the broader improvements in the economy (Cobb 1982). To the extent that establishments locating in other communities took advantage of benefits under subsequent government programs, it will tend to attenuate estimates of the effects of the original BAWI investments in my empirical analysis.

[10] These figures understate BAWI's total impact because they do not include the contribution of one of the 13 plants, Amory Garment Co., for which employment and wage data from 1943 are not available.

[11] To the extent that many BAWI enterprises hired primarily women, they employed an even greater share of their respective counties' female workforce.

Several of the garment plants sought out an exclusively female workforce (Cobb 1982).[12] As Hopkins (1944) observed,

> "The small towns [that received BAWI investment] previously had provided little opportunity for female employment, although the large families, characteristic of the area, included women and girls who wanted employment. Frequently heard during the inquiry made for purposes of this study was the statement that the $15 or $18 a week brought home by the daughter from a BAWI plant equaled or exceeded the cash earnings of the father on the farm. This background of low farm income cannot be omitted from the consideration of this and other aspects of BAWI" (30).

The Industrial Commission did not set out to attract plants that would mainly employ females. Indeed, the commission searched actively for employers who would hire more men, hoping that they could help mitigate male unemployment and might offer higher wages (Cobb 1982). With few exceptions, however, the enterprises that took up the subsidies eschewed male workers in favor of relatively cheap female labor.

Meanwhile, while there were a large number of minorities in the labor force, BAWI did not directly benefit them (Henderson and Shaw 1949, Lester 2008, Morris 2011). In fact, advertisements for the program specifically noted the abundance of "Anglo-Saxon" workers available for employment.[13] Officials were not as interested in using the program to increase employment among minorities, who were still largely engaged in agricultural work in the state (Lester 2008, Morris 2011, Hohle 2015).

None of the original 13 enterprises attracted to Mississippi by the BAWI Program is still active in Mississippi today.[14] Figure 1 shows the evolution of BAWI company dissolutions and mergers/acquisitions. Two of the BAWI companies were dissolved within a decade of their establishment – Hattiesburg Hosiery in 1943 and Jackson County Mills in 1946. Another three companies that also had heavily female workforces – Winona Bedspread, Lebanon Shirt, and Real Silk – ceased operations in the 1950s. By 1963, when Grenada Industries closed, the majority of

[12] Cobb (1982) relates an inquiry regarding a plant site that was typical: "We are still trying to find a spot for the location of the large athletic underwear operation to employ between 750 and 1000 women. This is simpler than other types of garment production with the result that girls can learn more speedily and get to better earnings in a shorter space of time. Average wage scales would run about $10.00 per week" (22).

[13] One advertisement appearing in *Fortune* magazine in 1937 noted Mississippi's "high percentage of friendly, native Anglo-Saxon labor" (Lester 2008). According to the City of Natchez's attorney (and prior mayor) Saul Laub, Armstrong Tire and Rubber pledged that its workforce would "be better than 95% white labor, using only a few colored hands for certain porter work and possibly for mixing of carbon black" (Davis 2004, p. 130).

[14] Unless otherwise noted, information on company dissolutions and mergers were collected from business records maintained by the Mississippi Secretary of State.

the BAWI companies had dissolved or were acquired. Only four companies – Amory Garment, Crystal Springs Shirt, Ellisville Hosiery, and W.G. Avery Body – were still active in 1968. The most recent BAWI company to close its doors was Amory Garment, which operated at a fraction of its former size in the years preceding its dissolution in 2001 (Elkins 1998). One of the plants that used female labor relatively less intensively, W.G. Avery Body, was the second to last to close in 1993.

The BAWI Program's pioneering role, together with its innovative use of industrial bonds to subsidize private enterprise, render it an interesting case study for local economic development efforts. Yet more importantly, the fact that it was implemented nearly a century ago allows for an analysis not only of its short-run effects, but also its long-run implications for affected communities.

3. Data

To study the contemporaneous as well as the long-term effects of the BAWI Program on local labor markets in Mississippi, I compiled data spanning over roughly a century from a variety of sources. The backbone of the dataset is the Decennial Census. Several core variables are available consistently for counties every ten years between 1880 and 2000, although many others are only available in the latter half of the twentieth century. These data were obtained from the National Historical Geographic Information System (NHGIS). For the years 1880, 1900, 1910, 1920, 1930, and 1940, I aggregated demographic data from Integrated Public-Use Microdata Sample (IPUMS) to the county level.[15] I further supplemented these data with information from the City and County Databook for several years in the middle of the century. Details on the sources of information for all variables used in the analysis appear in Appendix Table A1.

In the main analysis, I focus on the period 1910-2000 because four new counties were formed in Mississippi between 1900 and 1910.[16] Descriptive statistics for counties that did and did not receive BAWI plants for the 1910-1930 period appear in Table 2. The 11 counties that received the 13 BAWI plants as well as the 68 counties that received no BAWI plants between 1936 and

[15] The 1890 Decennial Census was missing several key variables used in the analysis, and data from that decade are therefore not included.

[16] These four counties are Forrest, George, Jefferson Davis, and Lamar. Three additional counties (Humphreys, Stone, and Walthall) were formed after the 1910 Census, bringing the total number of counties in the state to the current number of 82. As discussed in the empirical analysis, changing the sample of years and counties included has little effect on the main results.

1940 had populations of close to 25,000 on average between 1910 and 1930. The two groups' gender compositions were also very similar. However, the share Black in treated counties was slightly lower at 43% than that in non-treated counties at 50%. The average value of farmland was also modestly higher in non-treated counties than in treated counties. These differences are suggestive of the preference program officials and prospective manufacturers showed for non-minority labor and for areas in the state where the opportunity cost of land was relatively low, but neither difference is statistically significant at conventional levels. Meanwhile, the age distributions across treated and non-treated counties were similar, as were the shares of women and men married and the shares enrolled in school. Importantly, at about one-third and 90% respectively, labor force participation rates among women and men were also very similar in the two groups.

One concern is that although the two groups appear comparable prior to treatment based on their observable characteristics, counties that received BAWI investment and those that did not may have been on different trajectories in the years leading up to the program's implementation. I address this concern in two ways. First, as discussed in detail in Section 4.1, we can graphically examine trends in key variables for the two groups to determine heuristically whether other counties in the state represent a suitable control for those that received investment. Second, as described in Section 4.7, I implement a synthetic control matching approach in which I weight non-treated counties in the state based on their similarity to treated counties on pre-treatment trends in outcome variables as well as on average pre-treatment characteristics. For this weighted sample, we can more credibly attribute any divergence in labor market outcomes to BAWI investment itself as opposed to other unobserved differences between groups.

4. Empirical Analysis

4.1. Graphical Analysis

In this section, I present descriptive evidence on the effects of BAWI investment on local labor markets. Figure 2 shows average labor force participation rates by decade for the 11 counties that received BAWI investment and for the 68 that did not both for women (Panel A) and for men (Panel B). For women and men, labor force participation rates are of the same magnitude and follow the same trend in treated and control counties prior to 1940. As discussed by Goldin (1977) and Carter (2006), 1910 was an atypical year in collecting labor force participation information,

as census takers counted certain women working on farms as gainfully employed rather than at home. This led to a transitory spike in the female series. To the extent that this one-time redefinition of labor force participation applied uniformly across counties that did and did not receive BAWI investment, as appears to be the case in Figure 2, it will be absorbed in decade dummies in the empirical analysis that follows. In robustness tests, I also confirm that excluding 1910 data does not affect the main results.

As is evident in Figure 2, while pre-1940 female labor force participation rates in counties that would receive BAWI investment closely tracked those in counties that would not, the two series diverge in 1940. Comparing rates in 1940 to the averages between 1910 and 1930, treated counties experienced a fall in female labor force participation from 31.9% to 28.3%, compared to the much larger decline in control counties from 34.5% to 23.3%. The implied difference-in-difference estimate for BAWI's immediate effect is a 7.5 percentage point relative rise in female labor force participation, a 23% increase. As discussed in the next section, even under very weak assumptions regarding the correlation of errors over time and across locations, this estimated difference is statistically significant.

Perhaps even more striking, the differential in female labor force participation between treated and control counties persists beyond 1940, fading only gradually. Relative to the average between 1910 and 1930, the female labor force participation rate differential between treated and control counties remains above six percentage points in 1950 and 1960, and close to five percentage points in 1970 and 1980. The gap falls below four percentage points only in 1990. This persistence is particularly notable given that the majority of the original companies were no longer active in Mississippi by 1963. I examine more rigorously how much of the short- and long-run relative change in female labor force participation comes on top of the direct effects of the BAWI plants themselves in Section 4.6.

For males (Panel B of Figure 2), the lines are roughly on top of one another throughout the sample period, suggesting that there was no immediate or long-term effect of BAWI investment on labor force participation among men. This is consistent with many plants subsidized under the program seeking out a majority or even exclusively female workforce. Notably, though, at over 90% in the early 1900s, male labor force participation rates had less scope to rise as compared to female labor force participation rates.

4.2. Baseline Difference-in-Differences Analysis

I formalize the graphical analysis with regressions, the most basic of which is

$$y_{ct} = \alpha_c + \gamma_t + \beta(BAWI_c \times POST_t) + \mathbf{X}_{ct}\mathbf{\Omega} + \varepsilon_{ct}.$$

In the regression, y_{ct} is the outcome of interest (e.g., the labor force participation rate) for a given population (females or males) in county c in decade t. On the right-hand side, α_c is a dummy for county c and γ_t is a dummy for decade t. $BAWI_c$ is a dummy that takes a value of 1 for counties where BAWI investment occurred, while $POST_t$ is a dummy that takes a value of 1 for decades 1940 to 2000. The coefficient β then captures the differential effect of BAWI investment in treated counties relative to untreated counties, controlling for general statewide time variation in the outcome as well as time invariant observed and unobserved county characteristics. In some specifications, I replace the single $BAWI_c \times POST_t$ interaction term with interactions between the dummy for BAWI investment and each individual decade after 1940. The matrix $\mathbf{X}_{ct}$ contains time varying controls for county c; in some specifications, I include in $\mathbf{X}_{ct}$ a dummy for whether a BAWI plant is active in a given county and decade, in which case β reflects any impact of BAWI investment above and beyond the effect of hosting the plant itself. The error term is ε_{ct}. In all regressions, standard errors are adjusted for heteroscedasticity and clusters at the county level (of which there are 79 in the main sample). Allowing errors to be correlated within counties over time, but assuming independence across counties, generally yields more conservative (i.e., larger) standard errors than other assumptions regarding the structure of errors.

The baseline difference-in-differences results appear in Table 3. In the first column, I present results for the female labor force participation rate with no controls beyond the county and decade dummies. The coefficient estimate on the interaction term implies that female labor force participation rates were on average 5.1 percentage points higher in treated counties than in control counties in the seven decades (1940-2000) after the BAWI Program, controlling for aggregate trends in female labor force participation and all time invariant county characteristics. Although not statistically significant at conventional levels, we can rule out with 82% confidence that the average difference between treated and control counties in female labor force participation rates post-BAWI is zero.

Importantly, the coefficient estimate in the first column is an average differential across all decades following BAWI. As Figure 2 suggests, however, this differential is initially large but shrinks over time. In the second column of Table 3, I interact the dummy for BAWI investment

with each individual decade in the data beginning in 1940. One can interpret the coefficients as average differences in female labor force participation between treated and control counties in each year relative to the average difference between 1910 and 1930. In 1940, immediately after the BAWI investments, female labor force participation rates in treated counties rose relative to control counties by a statistically significant 7.5 percentage points, the 23% increase seen in Panel A of Figure 2. In subsequent decades, though, that differential shrank; in 1950 and 1960, the differential stood at slightly over 6 percentage points, then fell to between 4.5 and 5 percentage points in 1970 and 1980, and finally dropped to below 4 percentage points in 1990 and 2000.

In the final two columns of Table 3, I run the same set of regressions for the male labor force participation rate. Consistent with Panel B of Figure 2, no gap opens up between treated and control counties in the male labor force participation rate after BAWI. Thus, on average, BAWI investment does not appear to have had important implications for the labor market circumstances of males in affected areas, consistent with many of the facilities hiring majority female workforces.

4.3. Robustness

In Table 4, I present difference-in-differences results for female labor force participation rates using alternative specifications and samples.[17] First, I include additional county-level time-varying controls, including population and share female, in the regression. Notably, I do not include these (or other) time-varying controls in the baseline regressions because each could plausibly respond to BAWI investment. For example, more people, and in particular more women, might move to a county in the wake of investment in hopes of obtaining a job at a new plant.[18] Putting aside endogeniety concerns, however, the first column of Table 4 presents results including other county characteristics. A larger population is associated with a higher female labor force participation rate on average, but the share of the population that is female is not related to the share in the workforce or looking for work. Importantly, though, controlling for these time-varying county characteristics has little effect on the estimates of the effects of BAWI investment on female labor force participation.

[17] The null effects for male labor force participation rates are robust to these alternative specifications and samples; results are available upon request.

[18] As discussed in the next section, there is some evidence that the demographics of treated counties did change in response to BAWI investment.

One concern is that BAWI investment could be correlated with federal spending under the New Deal, which could also directly affect outcomes. Using data from Fishback et al. (2011a) on county-level New Deal expenditures between 1930 and 1940, I aggregate the amount of New Deal grants and loans as well as the number of Civilian Conservation Corps (CCC) camps in each county over the decade and include them as additional controls in the regressions.[19] As the second column in Table 4 reveals, while the New Deal variables enter significantly, their inclusion in the regression has no effect on the estimates of BAWI's effects on female labor force participation. This suggests that the geographic pattern of New Deal spending in Mississippi was largely uncorrelated with that of BAWI investment.

Another concern is that the different criteria that census takers used in 1910 to determine individuals' labor force status might be skewing the results. In the third column of Table 4, I exclude 1910 data completely from the sample, which reduces the number of observations by 79. The estimates fall slightly in magnitude, but continue to suggest that BAWI investment led to an immediate 6.4 percentage point increase in female labor force participation that only faded slowly over time.

In the main sample, I restrict attention to 1910-2000 because four counties were formed between 1900 and 1910. An additional two counties were formed between 1880 and 1900. As another robustness test, I drop the six counties that were formed between 1880 and 1910, and include all years in which I have labor force participation information (1880, 1900-2000). The results appear in the fourth column of Table 4. Again, the results are very similar, albeit slightly smaller in magnitude and less precise than for the main sample encompassing 1910-2000.

As discussed in Section 2, eight of the 21 initially approved projects did not come to fruition. In the majority of cases, this occurred because negotiations fell through and/or the enterprise opted for a different location outside of Mississippi (Hopkins 1944). It might seem that the counties in which this happened would serve as good controls for those that received BAWI investment. However, those counties that were certified to issue bonds but ultimately did not receive investment were very different on observables as well as in their growth trajectories than those

[19] The specific dataset used is Fishback et al. (2011b). I aggregate all types of grants (agricultural adjustment, farm security, public roads, public works, public building, works progress, other works, social security, housing authority, federal emergency relief, and civil works) and all types of loans (reconstruction finance corp., disaster, public works, housing authority, farm credit, farm security, rural electrification, and homeowners loan corp.); results do not change when I include each type of grant and loan separately.

that were certified and did receive investment. Specifically, the five counties in which the eight failed projects were to be located were initially larger and were growing faster in both the pre-treatment period as well as after BAWI. In the fifth column of Table 4, I drop these five counties from the sample in order to verify that their inclusion in the control group does not influence the results. The estimated effects of BAWI investment on female labor force participation again do not change appreciably.

Finally, although it accepted tax exemptions on its property, building, and equipment, one of the BAWI enterprises, Amory Garment Co., declined money from a local voter-approved bond out of concern about the legal implications of using public funds (Dickason 1940, Hopkins 1944, Henderson and Shaw 1949). As can be seen in the final column of Table 4, dropping the county in which Amory Garment located its plant (Monroe County) does not affect the results qualitatively; in fact, the initial estimated impacts of BAWI investment are stronger (an 8 percentage point relative increase in the female labor force participation rate in 1940) when this county is excluded.

4.4. Effect Heterogeneity

If the prior results for female labor force participation are driven by the BAWI plants, one would expect to see the most pronounced effects in counties with those plants that hired relatively large numbers of women. As compared to the shipyard, tire manufacturer, and auto parts producer, BAWI's textile plants filled a large fraction of the jobs at their facilities with women (Cobb 1982, Morris 2011). In Table 5, I present results in which I restrict the treated group first to counties that received textile plants (the first two columns), and then to counties that received large textile plants (the second two columns). I define a large textile plant as one that had at least 250 employees when Hopkins (1944) estimated employment of each of the BAWI enterprises in 1943.[20]

As expected, the estimated effects of BAWI investment on female labor force participation are larger than the baseline estimates in Table 3 when I restrict attention to textile plants, and larger still when I restrict attention to large textile plants. In fact, controlling for aggregate trends in female labor force participation and time invariant county characteristics, the female labor force participation rate in counties that received large textile plants hovered between 6 and 8.5

[20] Hopkins (1944) did not report employment estimates for Amory Garment Co. Based on McKee's (1974) analysis of manufacturing operations in Mississippi, which indicated that Amory Garment Co.'s Monroe County plant had at least 800 employees in the early 1970s, I include the company in the pool of large textile plants. Results are largely unchanged if I exclude it.

percentage points above that in control counties throughout the 1940-2000 period, falling out of statistical significance only in the final decade of the sample.

4.5. Persistence

The previous results indicate that counties in which BAWI plants located had relatively high female labor force participation rates after the investment occurred, and that the differential faded only slowly over time. To the extent that some BAWI enterprises operated for many years, the gradual convergence in female labor force participation rates between treated and control counties could merely reflect the successive plant closures.

Of central interest is whether there were effects of BAWI investment on female labor force participation above and beyond those generated by the BAWI plants themselves, as well as whether any impacts persisted after the plants ceased operations. To address these questions, I add to the regressions an indicator for whether the BAWI plant in a given treated county was still active in a given decade. In this case, the coefficient on the main interactions capture the impact of BAWI investment on female labor force participation on top of the effect attributable to the BAWI plant itself. The dates of closure are derived from business records maintained by the Mississippi Secretary of State. To the extent that many plants were contracting or had even halted operations before the owners formally reported the companies dissolved, the persistence effects will be understated. However, to the extent that other firms acquired previous BAWI facilities and produced similar products, the persistence effects will be overstated.

In Table 6, I show the persistence results for the main sample as well as for the restricted samples of textile plants and large textile plants. When I control for whether a BAWI plant was still active in a county in the main sample, the coefficient estimates on the main interactions of BAWI with each post-intervention decade fall by 10-40% and lose statistical significance. However, they remain positive and point to a differential in female labor force participation between treated and control counties in the latter half of the century of 3-5 percentage points.

When I restrict attention to textile plants, the estimated effects on female labor force participation controlling for the presence of an active BAWI plant are more economically meaningful, implying a differential between treated and control counties of close to 5 percentage points throughout the post-intervention period. Focusing on the effects of large textile plants, the impact of BAWI investment on female labor force participation above and beyond that of the plant

itself is statistically significant and fairly consistent in magnitude at over 6 percentage points between 1940 and 1990. In 2000, the differential is no longer statistically significant, but remains sizable at 5.9 percentage points.

These results suggest that the BAWI plants had not only direct effects on female labor force participation, but also indirect effects. Moreover, these indirect effects were persistent over time, particularly in communities where the initial shock to female employment was relatively large. While the results do not speak directly to the propagation mechanism, they are consistent with recent work highlighting the importance of intergenerational transfers of norms and expectations regarding women's roles in society (Fernandez et al. 2004, Fogli and Veldkamp 2011, Farre and Vella 2013, Fernandez 2013, Dhar et al. 2015). These changes in norms and expectations could also manifest themselves in other decisions regarding, for example, marriage, childbearing, or educational attainment. I consider these and other possible outcomes in the next section.

4.6. Other Outcomes

In this section, I examine whether BAWI investment had effects on several other county-level outcomes, including total manufacturing employment, population, the female share of the population, the female unemployment rate, the share of females married, a proxy for the birth rate, and the share of females with 12 or more years of education. Figure 3 shows average values of each outcome variable over the sample period for treated and control counties, and Table 7 shows results for each outcome using the difference-in-differences specification described in Section 4.2 (still clustering standard errors on county). Notably, data are missing for one or more decades for several of these variables (manufacturing employment, the female unemployment rate, the share of females married, and the share of females with 12 or more years of education); the number of years of data used for each outcome appears in the final row of Table 7.

As the first panel of Figure 3 and the first column of Table 7 show, BAWI investment was associated with an increase in manufacturing employment, an effect that appears to grow over time. This finding could be construed as consistent with agglomeration economies in manufacturing that lead to path dependence in the location of industrial production, as in Kline and Moretti (2015). However, I hesitate to put too much weight on this interpretation given the insignificance of the estimates. Notably, though, while the smallest in magnitude, the most precisely estimated effect is in 1940, when we can rule out with 86% confidence that the relative

increase of 160 manufacturing jobs in treated relative to control counties was zero. The estimated effects of BAWI investment on total population (shown in the second panel of Figure 3 and the second column of Table 7) are also positive, but are even less precise than those for manufacturing employment.

In the third panel of Figure 3 and the third column of Table 7, I consider the effect of BAWI investment on the share of women in the population. It is plausible given the types of firms that participated in the program that women in particular were attracted to the counties that received investment. However, as is evident in the figure and table, there was no discernable effect of BAWI investment on the share of females in in treated counties on average. This, as well as the lack of any significant impact on total population, could be attributable to the fact that there was a large surplus of labor available in counties prior to the investment, and that the plants were not so large as to attract residents from other areas. Importantly, this also mitigates concerns about spillovers of BAWI investments' effects across county lines; if BAWI investment had induced large movements in the population, it would bias difference-in-differences estimates of its effects using other counties as controls.[21]

Next, I examine whether BAWI had any effects on female unemployment rates. As can be seen in the fourth panel of Figure 3 and the fourth column of Table 7, there was an immediate and economically sizable relative decline in unemployment among women in treated counties: an over 2 percentage point reduction in the female unemployment rate (on a base of 4%) in 1940 compared to control counties. However, not only is the relative reduction in the unemployment rate among women statistically insignificant, but it is also highly transitory, with the differential shrinking to less than a half percentage point by 1950. This is consistent with many women at the time having only a weak attachment to the labor market, joining and dropping out relatively quickly with changes in job opportunities.

Local women may have delayed marriage once jobs in BAWI plants afforded them a means to support themselves financially. Information on age at first marriage is not available before 1930, nor is it available at the county level after 1940. Therefore, I simply examine how marriage rates varied over time in treated and control counties. As the fifth panel (column) of Figure 3 (Table 7) shows, marriage rates among women in counties that did and did not receive BAWI investment

[21] Information on the number of residents who recently moved to the county are not available prior to 1970, precluding an analysis of policy-induced migration in the spirit of Freedman (2012).

followed nearly identical trends both before and after the BAWI investment occurred. This suggests that the expansion of job opportunities for women due to BAWI did not have substantial implications for household formation. However, to the extent that increased labor force participation among women induced only delays in marriage, overall marriage rates may not fully capture BAWI's effects on the marriage market.

In the sixth panel of Figure 3 and the sixth column of Table 7, I consider BAWI's effect on a proxy for the birth rate in the county. As with marriage, to the extent that BAWI investment provided many young women with a source of income, it might have delayed childbearing and possibly even reduced the number of children women had. Natality data at the county level from the National Center for Health Statistics are only available back to 1968. Therefore, following Bleakley and Lange (2009), I use an alternative measure that I can calculate back to 1910. Specifically, I compute the ratio of individuals under ten years of age to females between 15 and 44 years of age for each year of the census. Using this measure of the birth rate, I find no effect of BAWI investment on birth rates, as shown in Figure 3 and Table 7. However, this measure may be too coarse to detect postponements in childbearing induced by BAWI investment and the resulting higher incomes for women.

Finally, I explore BAWI's effect on female educational attainment in the seventh panel of Figure 3 and the seventh column of Table 7. On the one hand, the prospect of better job opportunities might induce some women to pursue additional education. On the other hand, with improved immediate outside options owing to the arrival of new manufacturing operations, many of which were seeking out majority or in several cases even exclusively female workforces, some women might forgo additional formal education. Unfortunately, the Census Bureau did not collect information on years of education until 1940, meaning that we can only examine differences between treated and control counties in the post-BAWI period. If we assume that the differences between treated and control counties are zero prior to 1930 (a strong assumption, but one supported by the fact that the share of females in school as reported in the IPUMS was nearly identical in the two groups through 1930; see Table 2), it appears as if BAWI investment induced more women to pursue additional formal education. In 1940, the differential in the share of females that completed at least 12 years of schooling was 4.6 percentage points (the percentage of females in treated counties with 12 or more years of education in 1940 was 26.5%). As is clear in the final panel of Figure 3 and the final column of Table 7, this differential gradually shrank over time. However, it

remained positive and economically meaningful for several decades after the original BAWI investments. This mirrors the results for female labor force participation, and suggests that on net the growth in female job opportunities, and any changes in social norms about the acceptability of female employment, induced greater numbers of women to complete secondary school. Increased educational attainment among younger cohorts of women in treated counties could further serve to propagate BAWI's effects on local labor markets over time.

4.7. Synthetic Control Matching Analysis

The Mississippi counties in which BAWI plants located were not a random sample of all counties in the state. While those counties that procured investment under the auspices of the BAWI Program and those that did not were generally similar on observable characteristics (see Table 2), one concern is that treated counties might differ from control counties along unobservable dimensions, and in particular may have been on different trajectories prior to the intervention.

To address this concern, I adopt the synthetic control group approach described in Abadie et al. (2010), but extend it to the present case in which we have more than one treated unit. The idea with this approach is to rely on the data to help construct a comparison group for the treatment group by reweighting the control units in such a way as to match the treated units not only on pre-treatment demographic characteristics, but also on trends. Using these weights, we can project a counterfactual post-BAWI path for the 11 treated counties.

In order to construct a synthetic control group in the presence of multiple treated units, I match the average characteristics of the 11 counties that received BAWI investment to the pool of other counties on pre-treatment trends in the outcome variable as well as on average pre-treatment values of all the characteristics listed in Table 2. This approach identifies a convex combination of the counties in the pool of control counties that best approximates the average pre-treatment characteristics and trends of the 11 treated counties.[22] Using the vector of weights resulting from

[22] Specifically, I create a composite county whose characteristics are the average of those for the 11 treated counties for each year. Then I let $c = (0, 1,\ldots, C)$ index Mississippi counties, with $c = 0$ corresponding to the composite county and excluding from the sample the 11 treated counties. The other C counties represent the donor pool. Let G_0 be a $k \times 1$ vector of composite county characteristics, including values of the outcome variable in each pre-intervention year. Let G_1 be a $k \times c$ matrix of the same characteristics for the each of the C donor counties. Let W be a $C \times 1$ weighting vector, where $W = (w_1, w_2, \ldots, w_C)$ and $\sum w_c = 1$ and $w_c \geq 0$ for $c = (1,\ldots, C)$. The product G_1W is then a weighted average of the pre-treatment characteristics for the donor counties. The difference between the composite treated county and this weighted control group is $G_0 - G_1W$. Letting V be a diagonal positive-definite $k \times$

this matching procedure, the pre-BAWI and post-BAWI values of the outcome can be determined. By construction, the pre-BAWI differences between the treated and the synthetic control group in the outcome variable will be close to zero. The post-BAWI values of the outcome variable for the synthetic control group represent the counterfactual for the 11 treated counties.[23]

Figure 4 shows a map of Mississippi with the 11 treated counties in dark blue and the remaining counties shaded according the weight afforded them in the synthetic control analysis for the female labor force participation rate. All 68 counties in the donor pool received some positive weight in the synthetic control analysis, although the top two most heavily weighted counties (Perry and Covington Counties) received 10.1% of the weight, and the top ten most heavily weighted counties received 25%. As the map makes clear, and as would be expected, the counties that received more weight are in general geographically proximate to treated counties.

The main results of the synthetic control analysis for female labor force participation are captured in Panel A of Figure 5. By design, the pre-treatment values of the female labor force participation rate for the treated and synthetic control groups nearly exactly line up. In 1940, however, female labor force participation in treated counties increases, while that in the weighted control group declines. Further, as in the unweighted case, the gap that opens up between the treated and control groups persists, fading only slowly over time. As illustrated in Panel B of Figure 5, in the case of male labor force participation, a synthetic control approach (matching on pre-treatment trends in male labor force participation, as well as on all average characteristics listed in Table 2) points to no effect of BAWI investment in the short- or long-run, once again echoing the previous, unweighted results.

Point estimates for the effects of BAWI investment can be obtained simply by differencing the outcome in the treated and synthetic control groups in each decade in the post-treatment period.[24]

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k matrix with diagonals that represent the relative weights for the contribution of the square of the values in the vector $G_0 - G_1W$ to the objective function, the optimal weighting vector solves the problem $W^* = \arg\min_W (G_0 - G_1W)'V(G_0 - G_1W)$ subject to $\sum w_c = 1$ and $w_c \geq 0$ for $c = (1,\ldots, C)$. Using W^*, I can determine pre- and post-treatment values for the weighted (synthetic) control group, with the post-treatment values serving as a counterfactual path for the treated counties. Also see Bohn et al. (2014) for a careful discussion of the methodology.

[23] An alternative approach that yields very similar results is to match each of the 11 treated counties to the pool of control counties to construct treated county-specific weights, and then take the average of county-specific treatment effects. These results are available upon request.

[24] This produces nearly identical results as using a difference-in-differences specification akin to equation (1), only with the control group weighted to match pre-treatment trends in the outcome as well as pre-treatment average county characteristics. A slight difference arises because, as can be seen in Table 8, the matching does not exactly balance treated and control counties on female labor force participation in the pre-treatment period (the differences are at the fourth decimal place).

To calculate p-values for these estimates, I conduct a permutation test in which I repeatedly draw 11 random counties from the donor pool and run the entire synthetic control analysis as if those randomly selected counties were treated. Doing this many times (in my case, 1000) yields what amounts to a sampling distribution for the estimate for the actual treated counties. Using this distribution of placebo estimates, I can calculate the likelihood that the actual estimate from the synthetic control analysis could have arisen by sheer chance.

In Table 8, I show the main synthetic control matching results for the female labor force participation rate. Columns (1) and (2) show average values of the female labor force participation rate for the treated and synthetic control groups, respectively (the same values depicted in Panel A of Figure 5). The difference between columns (1) and (2) as well as the results of the permutation test appear in the final two columns of the table. Figure 6 also graphically displays the differences between the actual treated and synthetic control group (the dark solid line) as well as those for a subset (the first 100, for the sake of clarity) of the placebo treated and synthetic control groups (lighter dashed lines).

By virtue of the matching methodology, the difference in average female labor force participation rates between treated and synthetic control counties in the pre-treatment period is very small at between 0.01 and 0.02 percentage points. A large gap opens up after BAWI, however; the synthetic control estimate of the effect of BAWI on the female labor force participation rate in 1940 relative to the years before 1940 is 5.3 percentage points, or about 17%. As can be seen in the final column of Table 8, in only 39 out of the 1000 random draws of 11 donor counties did I get an estimate larger than 5.3 percentage points; put differently, the p-value for a one-tailed test of the estimate is 0.039.

Echoing the unweighted difference-in-differences results, the effect of BAWI investment on female labor force participation persists beyond 1940 in the synthetic control analysis. In 1950, treated counties have an average female labor force participation rate that is 4.3 percentage points higher than the synthetic control group; in only nine of the 1000 placebo combinations of control counties considered did I find a larger effect in 1950. By 1960, the differential falls only slightly to 3.9 percentage points, and again this magnitude of an effect is extremely unlikely to have occurred by chance given that in only 2.2% of placebo cases was the effect larger. The gap in female labor force participation between treated and synthetic control counties shrinks gradually between 1970 and 2000, falling to near zero (0.09 percentage points) by the end of the century.

Applying the synthetic control group approach to samples in which I count as treated only textile plants or large textile plants established under BAWI, the results once again imply that, as expected, those communities that received employers who hired more women saw larger effects on female labor force participation. As depicted in Figure 7, both the initial impact in 1940 as well as the continuing effect in subsequent decades are bigger in counties that specifically hosted textile plants as compared to the synthetic control group. The effects relative to the synthetic control group are even larger and seemingly more lasting for those areas that received large textile plants.

Controlling for whether a BAWI plant is still active in a county in a given decade in the synthetic control analysis yields results suggesting again that the impact of BAWI investment on female labor force participation transcend the effect of the BAWI plant itself. As Figure 8 shows, the estimated effects of BAWI investment above and beyond the direct effects of the plant are positive and fade only slowly over time. As in the previous results, the persistence effects are most pronounced for those counties that received the largest textile employers, where the synthetic control estimates suggest the female labor force differential was still close to 4 percentage points in 2000.

In results not shown, I find that, as Panel B of Figure 5 suggests, there are no statistically or economically meaningful differences in male labor force participation rates between treated and synthetic control counties after BAWI, again echoing the unweighted difference-in-differences estimates. I also find results similar to the unweighted results when I conduct a synthetic control analysis using as dependent variables manufacturing employment, population, the female share of the population, the female unemployment rate, the share of females married, and the proxy for the birth rate. Although I cannot conduct a full synthetic control analysis on educational attainment given the lack of pre-treatment data on years of schooling prior to 1940, reweighting the control counties based on the 1910-1930 characteristics listed in Table 2 yields estimates of the effects of BAWI investment on female educational attainment very similar to those in Table 7.

5. Conclusion

There is little consensus on whether policies aimed at promoting local economic development can have immediate positive effects, much less whether they can have long-lasting impacts on targeted communities. To the extent that government interventions in the private sector expand opportunities for groups previously largely excluded from the formal labor market, they could

influence social norms and encourage greater workforce participation among members of those groups not only in the current generation, but also potentially in future generations. An intergenerational transmission of norms and expectations could give rise to persistent effects of industrial policies even if the policy interventions themselves are only transitory.

This paper studies the impacts of Mississippi's Balance Agriculture with Industry (BAWI) Program, which led to the establishment of 13 large manufacturing plants throughout the state between 1936 and 1940. These plants, which were primarily engaged in textiles production, hired large numbers of women. Difference-in-differences and synthetic control matching approaches both suggest that counties benefiting from BAWI investment not only experienced an immediate rise in female labor force participation, but that the increase relative to other similar counties persisted decades into the future. The results imply that even short-lived industrial policies may interact in subtle yet important ways with social norms to give rise to enduring economic impacts.

This research contributes to our understanding of the effects of local economic development initiatives as well as the factors contributing to variation in labor force participation among different groups. It also has important policy implications. In contexts where certain populations face obstacles to employment as a result of discrimination, government programs that expand job opportunities for those populations need not necessarily be long-lived in order to have durable impacts. Even a transitory intervention may influence norms and expectations in a way that facilitates the propagation of its effects over time. This could be particularly relevant in some developing countries, where women and individuals of certain races and nationalities are discouraged if not entirely barred from participating in formal labor markets.

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Table 1. BAWI Program Plants

Date	Certificate Issued to	Company	Main Product(s)	Bond Amount ($)	Duration (Years)	Rate (%)	Est. Emp., 1943
12/8/1936	City of Durant	Real Silk Hosiery Mill	Silk Hosiery	25,000	25	6	<250
1/27/1937	City of Amory	Amory Garment Co.*	Pants	50,000	-	-	?
3/16/1937	City of Grenada	Grenada Industries, Inc.	Silk Hosiery	32,000	21	4	500-1000
3/30/1937	Jackson County	Jackson County Mills, Inc.	Woolen Sweaters, Bathing Suits	150,000	25	5	500-1000
6/1/1937	City of Winona	Winona Bedspread Co.	Chenille Bedspreads	35,000	25	4	250-500
7/19/1937	City of Union	Lebanon Shirt Co.	Shirts	35,000	25	6	250-500
10/5/1937	City of Natchez	Armstrong Tire & Rubber Co.	Rubber Tires	300,000	20	3.5	500-1000
8/7/1938	Forrest County	Hattiesburg Hosiery Co.	Silk Hosiery	67,500	25	3.5	<250
10/3/1939	Jackson County	Ingalls Shipbuilding Corp.	Steel Ships	100,000	25	4.5	1000+
9/18/1939	City of New Albany	IBS Manufacturing Co.	Shirts	25,000	20	3	250-500
10/3/1939	Jackson County	WG Avery Body Co.	Plywood, Wooden Auto Parts	75,000	25	3.5	<250
11/21/1939	City of Crystal Springs	Crystal Springs Shirt Corp.	Shirts	25,000	20	3.5	250-500
2/23/1940	City of Ellisville	Ellisville Hosiery Mills, Inc.	Silk Hosiery	30,000	25	3.5	<250

Notes: Adapted from Hopkins (1944), Tables 1 and 3. *Amory Garment Co. declined the $50,000 bond that was approved by voters. However, it accepted tax exemptions on its site, building, and equipment (Dickason 1940, Henderson and Shaw 1949). Because it did not accept the capital subsidies, Hopkins (1944) did not estimate its employment in 1943.

Table 2. Descriptive Statistics

	1910-1930 Average	
	Treated	Control
Population	25151	22961
Share Female	0.50	0.50
Share Male	0.50	0.50
Share White	0.57	0.50
Share Black	0.43	0.50
Share Females Age 0-9	0.26	0.27
Share Females Age 10-17	0.17	0.19
Share Females Age 18-24	0.15	0.14
Share Females Age 25-34	0.15	0.15
Share Females Age 35-44	0.11	0.11
Share Females Age 45-54	0.08	0.07
Share Females Age 55-64	0.05	0.04
Share Females Age 65+	0.04	0.03
Share Males Age 0-9	0.25	0.27
Share Males Age 10-17	0.19	0.19
Share Males Age 18-24	0.13	0.13
Share Males Age 25-34	0.14	0.13
Share Males Age 35-44	0.11	0.11
Share Males Age 45-54	0.08	0.08
Share Males Age 55-64	0.06	0.05
Share Males Age 65+	0.04	0.04
Share Females Married	0.38	0.39
Share Males Married	0.38	0.38
Share Females in School	0.27	0.27
Share Males in School	0.26	0.27
Female Labor Force Participation Rate	0.32	0.34
Male Labor Force Participation Rate	0.91	0.92
Av. Value of Farmland & Bldgs. ($ per Acre)	24.52	32.15
Counties	11	68

Notes: Includes the 11 treated counties that contain the 13 BAWI enterprises and the 68 control counties that did not receive BAWI investment between 1936 and 1940.

Table 3. Difference-in-Differences Regressions, Female and Male Labor Force Participation

	(1)	(2)	(3)	(4)
	Female Labor Force Participation Rate		Male Labor Force Participation Rate	
BAWI × Post-1940	0.051		0.021	
	[0.038]		[0.014]	
BAWI × 1940		0.075**		0.008
		[0.033]		[0.017]
BAWI × 1950		0.063*		-0.002
		[0.034]		[0.016]
BAWI × 1960		0.063*		0.021
		[0.036]		[0.017]
BAWI × 1970		0.047		0.039*
		[0.042]		[0.022]
BAWI × 1980		0.045		0.025
		[0.047]		[0.023]
BAWI × 1990		0.035		0.019
		[0.046]		[0.020]
BAWI × 2000		0.031		0.032*
		[0.044]		[0.017]
Observations	790	790	790	790

Notes: All regressions include ten year dummies and 79 county dummies. Standard errors are adjusted for heteroscedasticity and clusters at the county level. Significant at the *10% level, **5% level, and ***1% level.

Table 4. Robustness Tests for Female Labor Force Participation

	(1)	(2)	(3)	(4)	(5)	(6)
	Female Labor Force Participation Rate					
BAWI × 1940	0.075**	0.075**	0.064**	0.059*	0.079**	0.080**
	[0.032]	[0.033]	[0.026]	[0.035]	[0.033]	[0.035]
BAWI × 1950	0.059*	0.063*	0.052**	0.049	0.065*	0.068*
	[0.033]	[0.034]	[0.025]	[0.036]	[0.035]	[0.037]
BAWI × 1960	0.058*	0.063*	0.052*	0.050	0.065*	0.056
	[0.034]	[0.036]	[0.029]	[0.036]	[0.036]	[0.038]
BAWI × 1970	0.038	0.047	0.036	0.034	0.049	0.038
	[0.040]	[0.042]	[0.035]	[0.044]	[0.043]	[0.045]
BAWI × 1980	0.036	0.045	0.034	0.032	0.049	0.041
	[0.044]	[0.047]	[0.038]	[0.050]	[0.048]	[0.051]
BAWI × 1990	0.028	0.035	0.024	0.024	0.038	0.031
	[0.042]	[0.046]	[0.037]	[0.050]	[0.046]	[0.049]
BAWI × 2000	0.022	0.031	0.020	0.018	0.033	0.031
	[0.039]	[0.044]	[0.034]	[0.048]	[0.044]	[0.047]
Population (Ten Ths.)	0.012**					
	[0.006]					
Share Female	0.509					
	[0.822]					
New Deal Grants (Mil $)		0.008***				
		[0.000]				
New Deal Loans (Mil $)		0.002***				
		[0.000]				
CCC Camps (#)		-0.020***				
		[0.000]				
Time-Varying Controls	Y					
New Deal Controls		Y				
Excl. 1910			Y			
Full 1880-2000 Sample				Y		
Excl. Failed Projects					Y	
Excl. Monroe County						Y
Observations	790	790	711	876	740	780
Counties	79	79	79	73	74	78
Years	10	10	9	12	10	10

Notes: All regressions include the number of county and year dummies listed in the final two rows. Standard errors are adjusted for heteroscedasticity and clusters at the county level. Significant at the *10% level, **5% level, and ***1% level.

Table 5. Difference-in-Differences Regressions by Plant Type and Size

	(1)	(2)	(3)	(4)
	Textile Plants		Large Textile Plants	
BAWI × Post-1940	0.064		0.076**	
	[0.039]		[0.034]	
BAWI × 1940		0.078**		0.083**
		[0.035]		[0.032]
BAWI × 1950		0.068*		0.065*
		[0.036]		[0.034]
BAWI × 1960		0.073*		0.085**
		[0.037]		[0.034]
BAWI × 1970		0.064		0.083**
		[0.041]		[0.036]
BAWI × 1980		0.062		0.082*
		[0.047]		[0.045]
BAWI × 1990		0.053		0.077*
		[0.046]		[0.039]
BAWI × 2000		0.048		0.060
		[0.043]		[0.040]
Observations	780	780	750	750
Counties	78	78	75	75

Notes: All regressions include ten year dummies and the number of county dummies listed in the final row. Large textile plants include those with at least 250 employees in 1943 as determined by Hopkins (1944). Standard errors are adjusted for heteroscedasticity and clusters at the county level. Significant at the *10% level, **5% level, and ***1% level.

Table 6. Difference-in-Differences Regressions, Controlling for Active BAWI Plant

	(1)	(2)	(3)	(4)	(5)	(6)
	All Plants		Textile Plants		Large Textile Plants	
BAWI × Post-1940	0.032		0.052		0.074*	
	[0.048]		[0.046]		[0.044]	
BAWI × 1940		0.046		0.045		0.080**
		[0.053]		[0.051]		[0.039]
BAWI × 1950		0.036		0.039		0.062
		[0.056]		[0.054]		[0.059]
BAWI × 1960		0.045		0.054		0.082*
		[0.049]		[0.045]		[0.048]
BAWI × 1970		0.036		0.053		0.082*
		[0.049]		[0.047]		[0.043]
BAWI × 1980		0.034		0.051		0.081
		[0.054]		[0.053]		[0.054]
BAWI × 1990		0.030		0.048		0.076*
		[0.049]		[0.048]		[0.044]
BAWI × 2000		0.028		0.047		0.059
		[0.046]		[0.045]		[0.042]
Observations	790	790	780	780	750	750
Counties	79	79	78	78	75	75

Notes: All regressions include ten year dummies and the number of county dummies listed in the final row. Large textile plants include those with at least 250 employees in 1943 as determined by Hopkins (1944). Standard errors are adjusted for heteroscedasticity and clusters at the county level. Significant at the *10% level, **5% level, and ***1% level.

Table 7. Difference-in-Differences Regressions, Additional Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Manuf. Emp.	Population (Ths.)	Share Female	Female Unemp. Rate	Share Female Married	Birth Rate Proxy	Share Females w/ 12+ School
BAWI × 1940	160.791	0.668	-0.001	-0.021		0.001	0.046**
	[108.387]	[1.526]	[0.002]	[0.018]		[0.051]	[0.023]
BAWI × 1950		2.605	0.002	-0.004	0.010	-0.034	0.026***
		[3.223]	[0.003]	[0.010]	[0.009]	[0.073]	[0.009]
BAWI × 1960		4.781	-0.001			-0.017	
		[5.506]	[0.003]			[0.095]	
BAWI × 1970	1226.738	7.153	0.000	-0.019	0.006	0.012	0.021**
	[895.158]	[8.054]	[0.003]	[0.011]	[0.014]	[0.089]	[0.010]
BAWI × 1980	1187.475	8.392	-0.001	-0.012	0.002	0.04	0.009
	[1203.867]	[10.691]	[0.003]	[0.012]	[0.016]	[0.073]	[0.009]
BAWI × 1990	1173.078	7.309	-0.002	-0.021	0.000	0.057	0.001
	[1160.515]	[10.648]	[0.003]	[0.014]	[0.019]	[0.082]	[0.008]
BAWI × 2000	988.524	6.664	0.002	-0.010	-0.002	0.068	-0.005
	[897.787]	[12.067]	[0.004]	[0.012]	[0.020]	[0.076]	[0.007]
Observations	553	790	790	632	632	790	474
Years	7	10	10	8	8	10	6

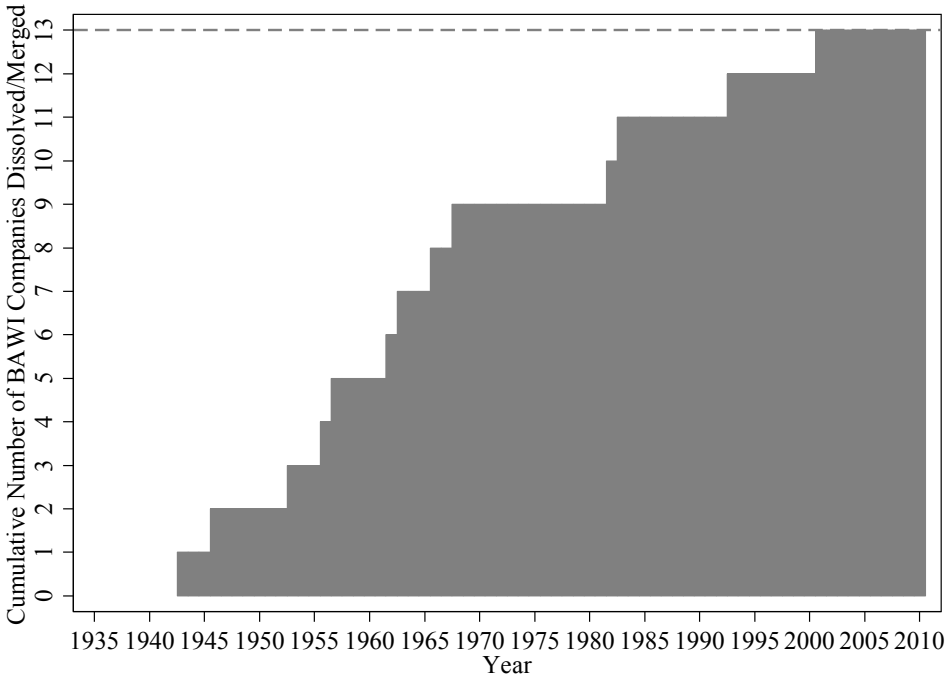
Notes: All regressions include 79 county dummies and the number of year dummies listed in the final row. Data are not available for years in which coefficients are not reported. Standard errors are adjusted for heteroscedasticity and clusters at the county level. Significant at the *10% level, **5% level, and ***1% level.

Table 8. Synthetic Control Matching Results, Female Labor Force Participation Rate

	(1)	(2)	(3)	(4)
	Treated Group	Synthetic Control Group	Difference	P-Value from One-Tailed Test
1910	0.4138	0.4136	0.0002	0.390
1920	0.2702	0.2701	0.0001	0.429
1930	0.2725	0.2723	0.0002	0.360
1940	0.2828	0.2299	0.0529	0.039
1950	0.2553	0.2125	0.0428	0.009
1960	0.3412	0.3017	0.0394	0.022
1970	0.3858	0.3637	0.0221	0.089
1980	0.4470	0.4223	0.0247	0.129
1990	0.4990	0.4841	0.0149	0.266
2000	0.5076	0.4990	0.0009	0.347
Counties	11	68		

Notes: To calculate the p-values in column (4), I conduct a permutation test in which I draw 11 random counties from the donor pool and run the entire synthetic control analysis treating those randomly selected counties as if they were treated. Repeating this 1000 times yields a sampling distribution for the difference in column (3). Using this distribution, I can calculate the likelihood that the actual estimate from the synthetic control analysis could have arisen by chance.

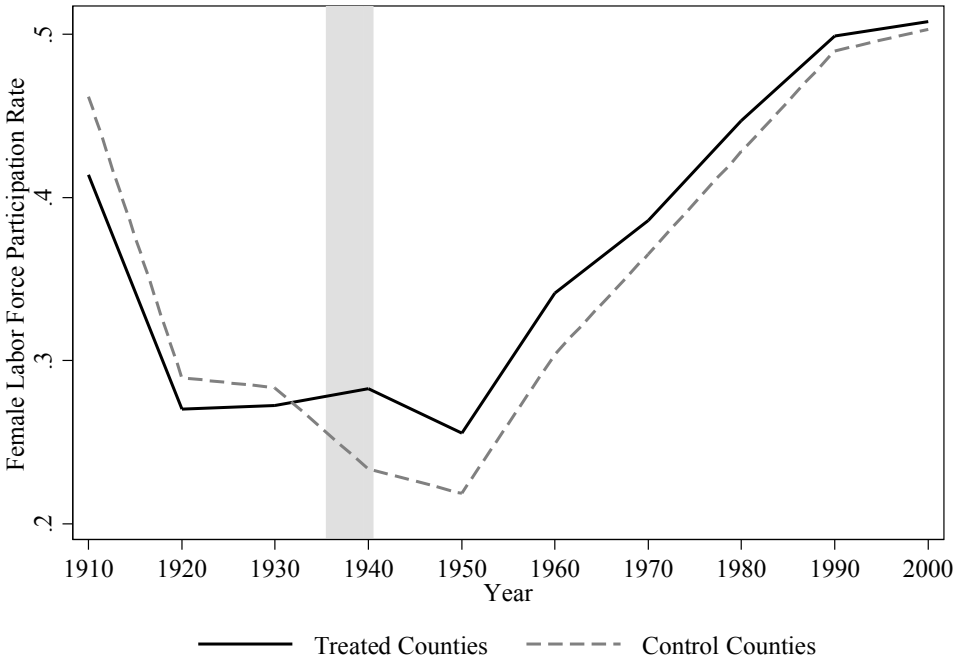
Figure 1. BAWI Company Dissolutions/Mergers



Notes: Information based on business records maintained by the Mississippi Secretary of State.

Figure 2. Female and Labor Force Participation Rates for Treated and Control Counties

A. Female Labor Force Participation Rates



B. Male Labor Force Participation Rates

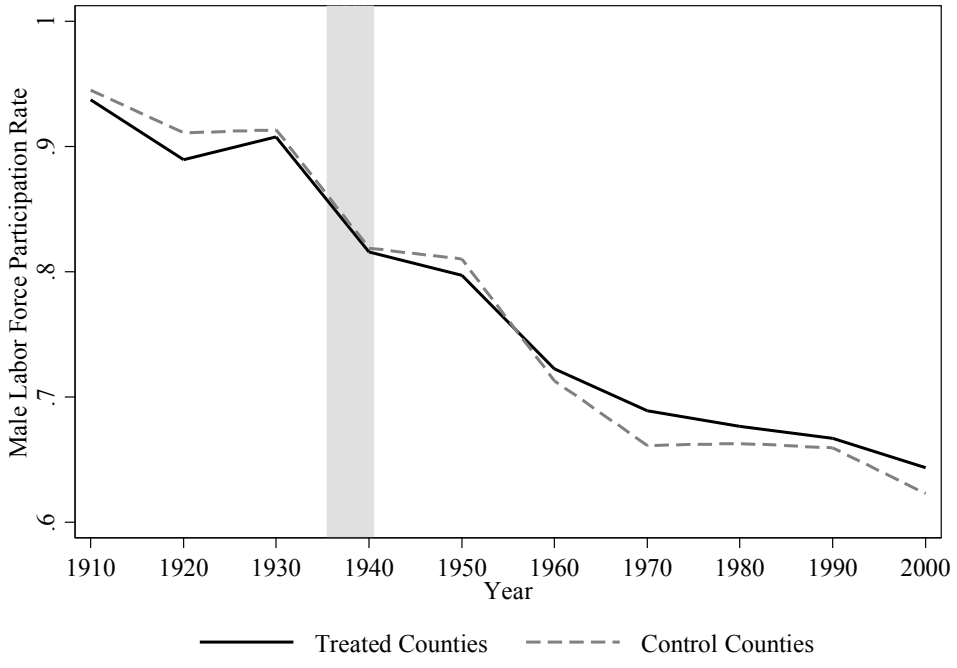


Figure 3. Additional Outcomes for Treated and Control Counties

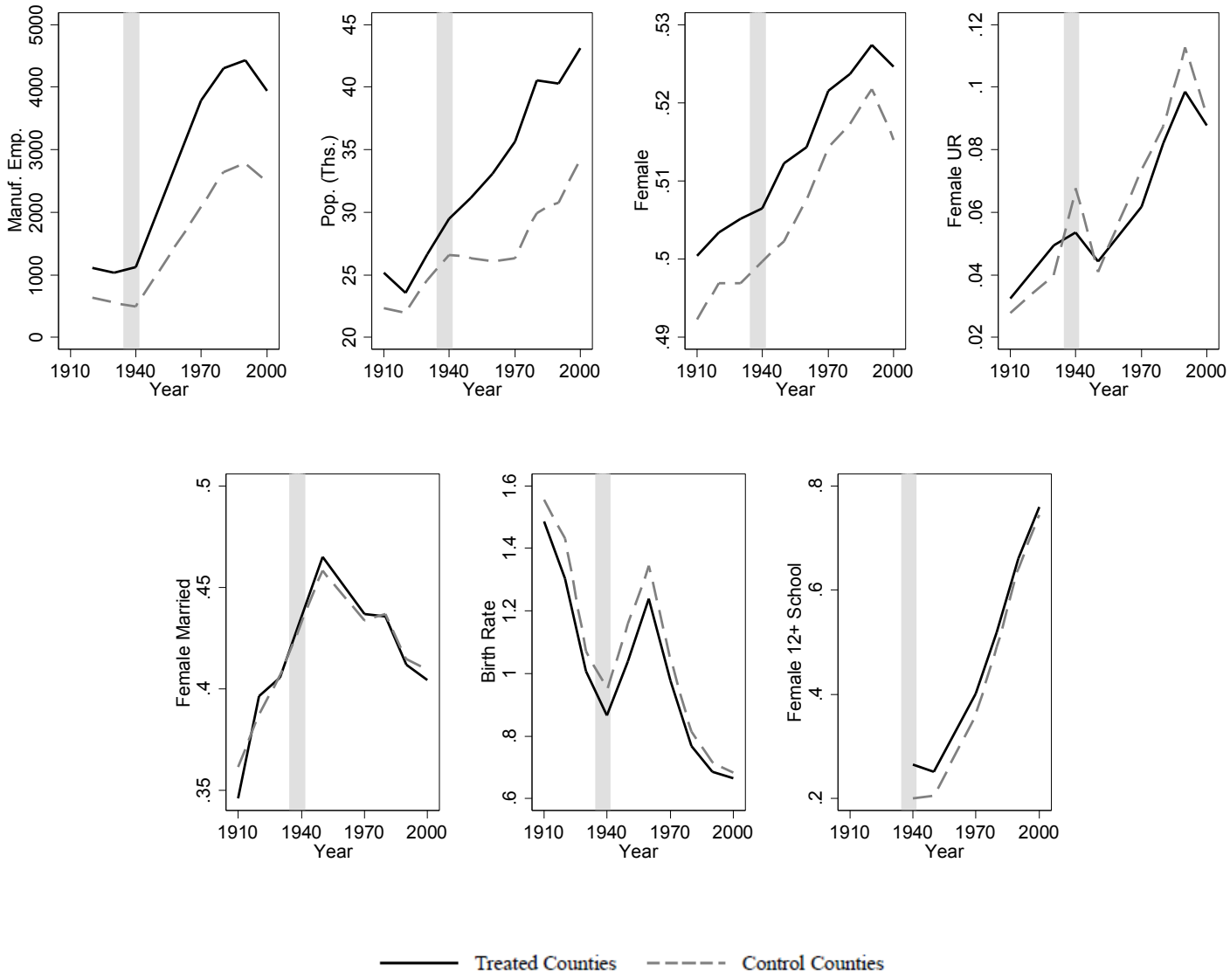


Figure 4. Mississippi Counties in Synthetic Control Matching Analysis

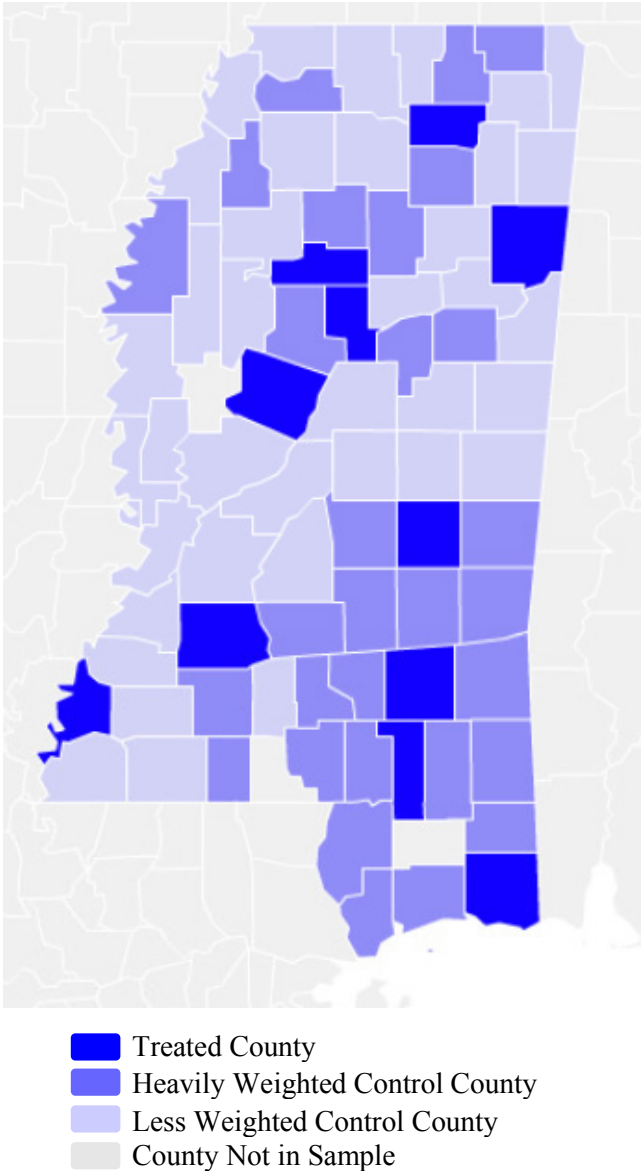
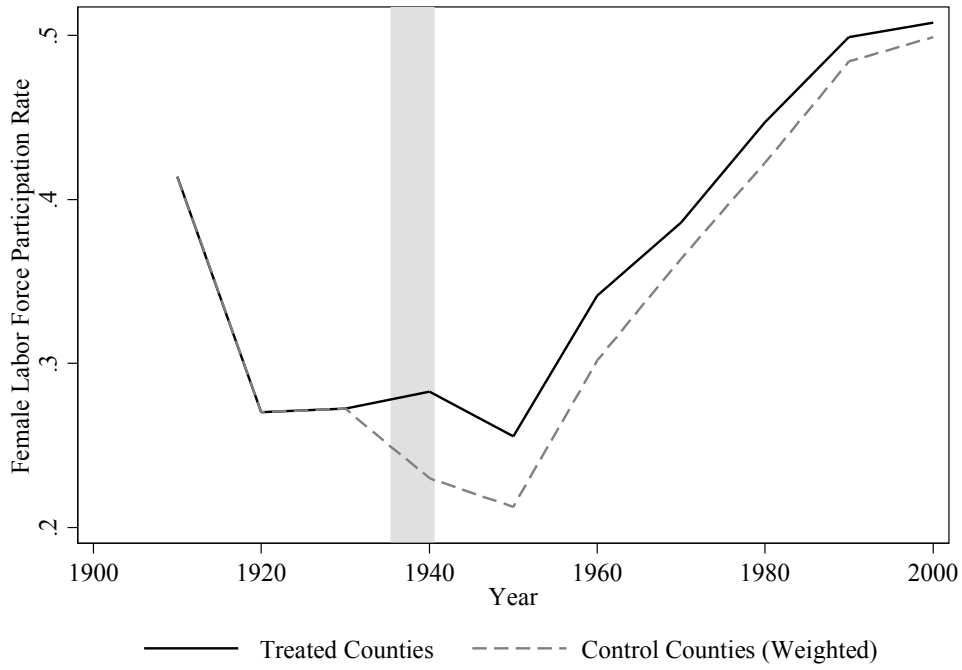


Figure 5. Female and Labor Force Participation Rates for Treated and Control Counties, Synthetic Control Matched Sample

A. Female Labor Force Participation Rates



B. Male Labor Force Participation Rates

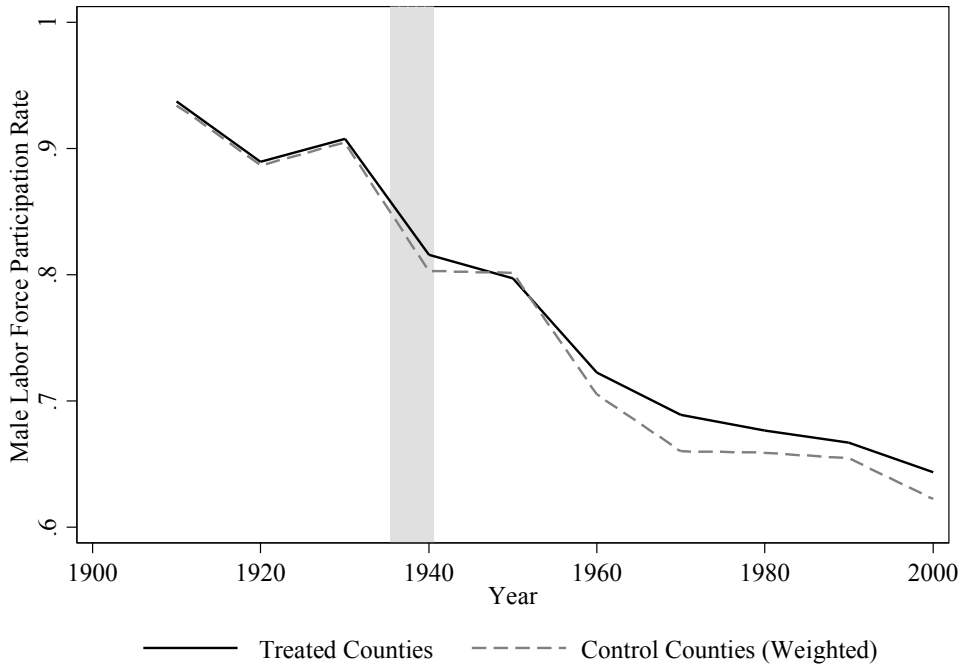


Figure 6. Permutation Test Results for Female Labor Force Participation Rates

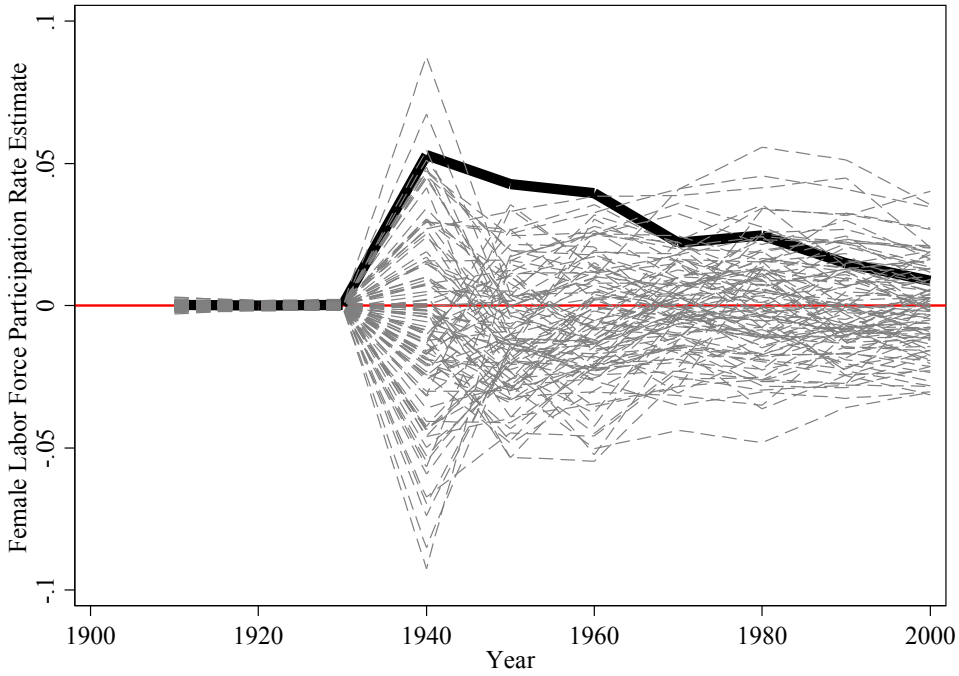


Figure 7. Synthetic Control Estimates by Plant Type and Size

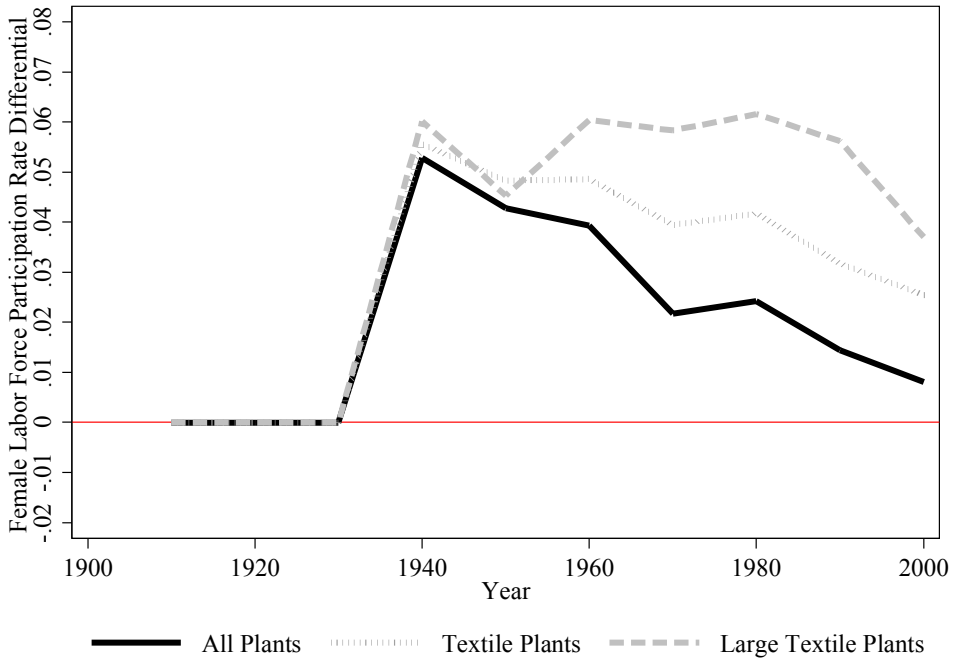
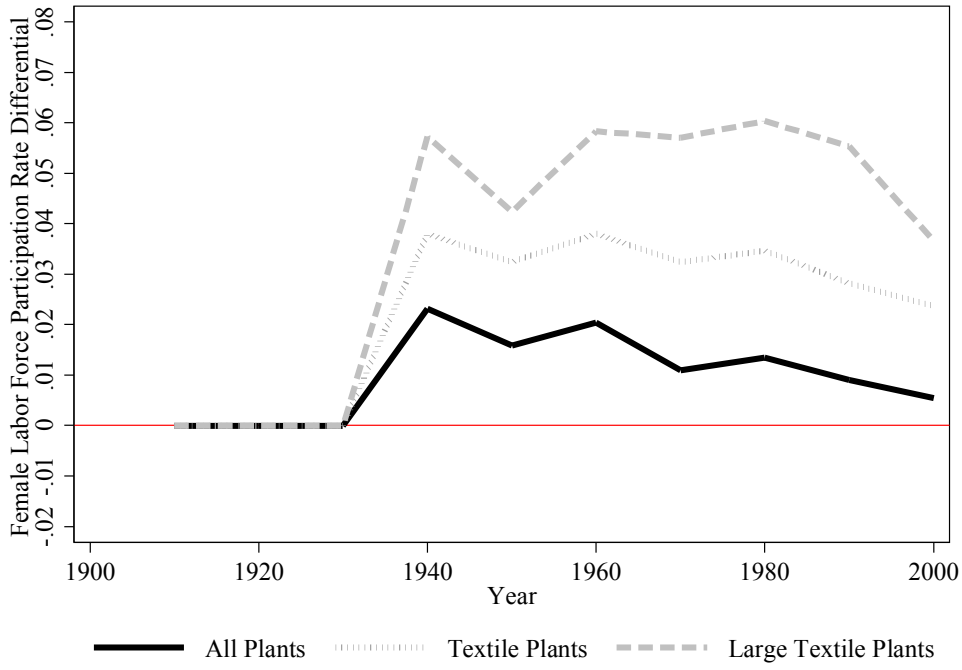


Figure 8. Synthetic Control Estimates by Plant Type and Size, Controlling for Active BAWI Plant



Appendix Table A1: Data Sources

Variable	Source(s)		
	IPUMS	CCDB	NHGIS
Population			1820-2000
Share Female			1820-2000
Share Male			1820-2000
Share White	1900-1940		1950-2000
Share Black	1900-1940		1950-2000
Female Labor Force Participation	1880,1900-1940	1960	1950,1970-2000
Male Labor Force Participation	1880,1900-1940	1960	1950,1970-2000
Female Age Breakouts	1900-1940		1950-2000
Male Age Breakouts	1900-1940		1950-2000
Female Unemployment	1910,1930-1940		1950,1970-2000
Male Unemployment	1910,1930-1940		1950,1970-2000
Female In School	1900-1940		
Male In School	1900-1940		
Female 12+ Years Schooling	1940		1950,1970-2000
Female 12+ Years Schooling	1940		1950,1970-2000
Female Married	1900-1940		1950
Male Married	1900-1940		1950
Average Value of Farmland and Buildings per Acre			1860-1960